

DRAFT SCOPING REPORT FOR THE PROPOSED EZELSJACHT 140MW WIND ENERGY FACILITY (WEF) AND ASSOCIATED INFRASTRUCTURE NEAR DE DOORNS, IN THE WESTERN CAPE PROVINCE

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Reg. EAP (EAPASA)	Stuart Heather-Clark
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EXECUTIVE SUMMARY

South Africa Mainstream Renewable Power Developments (Pty) Ltd (“Mainstream”) is proposing to develop, own and operate the Ezelsjacht Wind Energy Facility (WEF) with a generation capacity of up to 140 megawatts (MW).

The proposed Ezelsjacht WEF is located approximately 13 km south-east of the town De Doorns, within the Cape Winelands District Municipality of the Western Cape Province. The proposed WEF falls within both the Breede Valley and Langeberg Local Municipalities. The overall objective of the proposed development is to generate electricity by means of renewable energy capturing wind energy to feed into the national grid.

The proposed WEF will consist of up to a maximum of 35 wind turbine generators (WTG), with a hub height and rotor diameter of approximately 200 m respectively. The WEF will also include Battery Energy Storage System (BESS), internal and access roads (with a width of up to 12 m), a construction laydown area/camp, Operation & Maintenance (O&M) Building and 33/132kV Independent Power Producer (IPP) portion of the onsite substation. As mentioned, the WEF will have a generation capacity of up to 140 MW.

The supporting grid infrastructure (assessed in a separate Environmental Authorisation (EA) application Electrical Grid Infrastructure (EGI) for WEF) will consist of the 132kV Eskom portion of the on-site substation, as well as 132kV overhead distribution lines/powerlines.

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NO TABLE OF FIGURES ENTRIES FOUND.

ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
BA	Basic Assessment
BAR	Basic Assessment Report
B.Sc.	Bachelor of Science
CA	Competent Authority
CARA	Conservation of Agricultural Resources Act, 1983 (No. 43 of 1983)
CBA	Critical Biodiversity Area
CBD	Central Business District
CR	Critically Endangered
DFFE	Department of Forestry, Fisheries and Environment (formerly Department of Environmental Affairs (DEA))
DWS	Department of Water and Sanitation (formerly Department of Water Affairs (DWA))
DM	District Municipality
DMRE	Department of Mineral Resources and Energy (formerly Department of Mineral Resources (DMR))
EA	Environmental Authorisation, i.t.o. NEMA
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
EC	Electrical Conductivity
ECO	Environmental Control Officer
EGI	Electricity Grid Infrastructure
EIA	Environmental Impact Assessment
EIA Regulations, 2014	Environmental Impact Assessment Regulations, 2014 (GN R 982 of 2014, as amended by GN R 326 of 2017)
EIAR	Environmental Impact Assessment Report
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
ESA	Ecological Support Areas
FEPA	Freshwater Ecosystem Priority Area
GA	General Authorisation
GDP	Gross Domestic Product
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IRP	Integrated Resource Plan
ISO	International Standards Organization
LN	Listing Notice
LN 1, 2014	Environmental Impact Assessment Regulations Listing Notice 1, 2014 (GN R 983 of 2014, as amended by GN R 327 of 2017)
LN 2, 2014	Environmental Impact Assessment Regulations Listing Notice 2, 2014 (GN R 984 of 2014, as amended by GN R 325 of 2017)

Acronym / Abbreviation	Definition
LN 3, 2014	Environmental Impact Assessment Regulations Listing Notice 3, 2014 (GN R 985 of 2014, as amended by GN R 324 of 2017)
M.Sc.	Master of Science
NDCR	National Dust Control Regulations, 2013
NDP	National Development Plan
NEMA	National Environmental Management Act, 1998 (No. 107 of 1998)
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (No. 57 of 2003)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004)
NEM: PAA	National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003)
NEM: WA	National Environmental Management: Waste Act, 2008 (No. 59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas, 2011
NHRA	National Heritage Resources Act, 1999 (No. 25 of 1999)
NWA	National Water Act, 1998 (No. 36 of 1989)
Pr.Sci.Nat.	Registered Professional Natural Scientists
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resource Information System
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SDF	Spatial Development Framework
SHE	Safety, Health and Environment
SIA	Social Impact Assessment
SLR	SLR Consulting (South Africa) (Pty) Ltd
S&EIA	Scoping and Environmental Impact Assessment
WEF	Wind Energy Facility

1. INTRODUCTION

1.1 PROJECT BACKGROUND

South Africa Mainstream Renewable Power Developments (Pty) Ltd (“Mainstream”) is proposing to develop, own and operate the Ezelsjacht Wind Energy Facility (WEF) with a generation capacity of up to 140 megawatts (MW), Battery Energy Storage System (BESS) and associated infrastructure. The overall objective of the proposed development is to generate electricity by means of renewable energy capturing wind energy to feed into the national grid.

The proposed Ezelsjacht WEF (this project) is located approximately 13 km south-east of the town De Doorns, within the Cape Winelands District Municipality of the Western Cape Province (Figure 1-1). The site for the proposed 140 MW WEF falls within both the Breede Valley and Langeberg Local Municipalities.

The proposed WEF will consist of up to a maximum of 35 wind turbine generators (WTG), with a hub height and rotor diameter of approximately 200 m respectively. The WEF will also include BESS, internal and access roads (with a width of up to 12 m), a construction laydown area/camp, Operation & Maintenance (O&M) Building and 33/132kV Independent Power Producer (IPP) portion of the onsite substation.

This project is one (1) of four (4) projects currently undergoing authorisation, which is collectively known as the ‘**Ezelsjacht Renewable Energy Facilities**’.

Taking the above into consideration, Mainstream has appointed SLR Consulting (South Africa) Pty Ltd as the Independent Environmental Assessment Practitioner (EAP) to undertake a full Scoping and Environmental Impact Assessment (EIA) process for the proposed Ezelsjacht WEF Project.

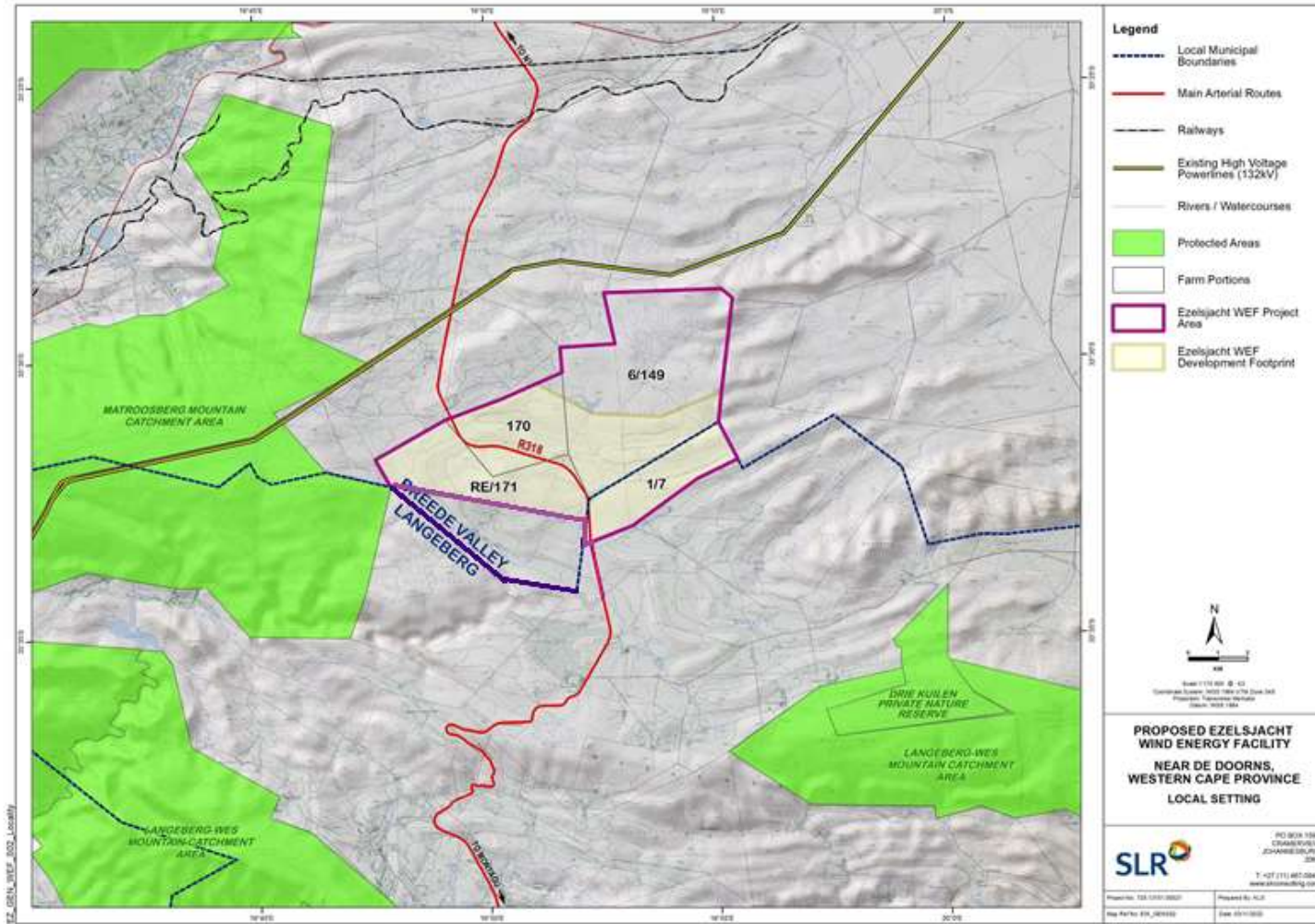


Figure 1-1: Locality Map of the entire project area and affected properties and associated development footprint for the Ezelsjacht WEF

2. ADMINISTRATIVE AND LEGAL FRAMEWORK

2.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 of 1998

NEMA, as amended, establishes principles, and provides a regulatory framework for decision-making on matters affecting the environment. Section 2 of NEMA sets out a range of environmental principles that are to be applied by all organs of state when taking decisions that significantly affect the environment. Included amongst the key principles is that all development must be socially, economically, and environmentally sustainable and that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural, and social interests equitably. The participation of I&APs is stipulated, as is that decisions must consider the interests, needs and values of all I&APs.

Chapter 5 of NEMA provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals. Section 24 provides a framework for granting of environmental authorisations. To give effect to the general objectives of Integrated Environmental Management (IEM), the potential impacts on the environment of listed or specified activities must be considered, investigated, assessed, and reported on to the competent authority. Section 24(4) provides the minimum requirements for procedures for the investigation, assessment, management, and communication of the potential impacts.

2.2 NEMA EIA REGULATIONS, 2014

The EIA Regulations 2014 (as amended) promulgated in terms of Chapter 5 of NEMA and published in Government Notice (GN) R982 (as amended) control certain listed activities. These activities are listed in Listing Notice 1 (GN R983 (as amended)), Listing Notice 2 (R984 (as amended)) and Listing Notice 3 (R985 (as amended)) and are prohibited from starting until an EA has been obtained from the competent authority. Such an EA, which may be granted subject to conditions, will only be considered once there has been compliance with GN R982 (as amended).

GN R983 (as amended) sets out the procedures and documentation that need to be complied with when applying for an EA. A BA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notices 1 and/or 3 and a Scoping and EIA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notice 2. Since the Ezelsjacht WEF includes activities listed in Listing Notice 2 (see Table 2-1), it is necessary that a full Scoping and EIA process is undertaken in order for the Department of Forestry, Fisheries and Environment (DFFE) to consider the application in terms of NEMA.

Table 2-1: NEMA Listed Activities applied for as part of the proposed project

No.	Activity description	Description of activity in relation to the proposed project
GN R983 (Listing Notice 1)		
11(i)	<i>The development of facilities or infrastructure for the transmission and distribution of electricity, (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kV or more.</i>	Project infrastructure will include facilities or infrastructure for the transmission and distribution of electricity. The supporting grid infrastructure for the proposed renewable energy facilities will consist of the 33/132kV IPP portion of the on-site substation (approximately 120 m x 120 m in extent). A BESS substation (if required) & internal overhead and underground lines of up to 33kV and cabling.
12(ii)(a)(c)	<i>The development of infrastructure or structures with a physical footprint of 100 square metres or more where such development occurs within a watercourse or within 32 m of a watercourse.</i>	The proposed project will require the placement of project infrastructure (i.e. wind turbines, substations, internal and access roads and underground cables,) with a combined physical footprint of more than 100m ² . The proposed site contains drainage lines and watercourses which will be traversed and located within 32m of some of the project infrastructure.
14	<i>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such good occurs in containers with a combined storage capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</i>	The proposed project would require the storage and handling of dangerous goods which could include, fuels (i.e., diesel or petrol for the operation of machinery and equipment, etc), lubricants and materials for the BESS. The BESS will be up to 500MWh and the technology to be used will be determined during the development phase, but most likely will comprise an array of containers, outdoor cabinets and/or storage tanks.
19	<i>The infilling or depositing of any material of more than 10 cubic metres into or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</i>	The proposed site contains drainage lines and watercourses which will be traversed. Although the final layout will be designed to avoid the identified surface water features / watercourses as far as possible, some of the internal site and access roads, cables, pylons, sub stations etc. to be constructed (as required) will need to traverse some of the identified surface water features / watercourses.

No.	Activity description	Description of activity in relation to the proposed project
		Therefore the proposed project may require the removal of soil in excess of 10m ³ from a watercourse as a result of the construction of project infrastructure, as well as upgrades to existing roads and laying of underground cables within the project area.
24(ii)	<i>The development of a road where the road is wider than 8 metres</i>	Internal and access roads are required for the project site in order to provide access to the wind turbines, substations and associated infrastructure, as well as to facilitate access throughout the site. Existing roads will be used wherever possible, although new site roads will be constructed where necessary. In addition, turns will have a radius of up to approximately 50m for abnormal loads (especially turbine blades) to access the various wind turbine positions. The proposed project would require the development of access roads with a width of up to 12m. The access roads would be constructed during the construction phase of the proposed project.
28(ii)	<i>Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</i> <i>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</i> <i>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</i>	The proposed WEF project would be established on land previously used for agriculture and the total area required for the proposed development is in excess of 1 ha. The proposed project is considered to be a commercial / industrial development and will have a footprint that exceeds 1 ha.
56(i)(ii)	<i>The widening of a road by more than 6 m, or the lengthening of a road by more than 1 km –</i> <i>(i) where the existing reserve is wider than 13.5 m;</i> <i>or</i> <i>(ii) where no reserve exists, where the existing road is wider than 8 m.</i>	The existing roads may be widened to accommodate large trucks carrying infrastructure accessing the project site and in order to provide access to wind turbines, substations and associated infrastructure, as well as to facilitate access throughout the sites.
GN R984 (Listing Notice 2) No. 324)		
1	<i>The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more.</i>	The proposed project will involve the development of a WEF with a contracted capacity of up to 140MW outside of an urban area in the Western Cape Province.

No.	Activity description	Description of activity in relation to the proposed project
15	<i>The clearance of an area of 20 hectares or more of indigenous vegetation.</i>	The proposed WEF project will require the clearance of 20ha or more of indigenous vegetation.
GN R985 (Listing Notice 3)		
2(i.)(ii.)	<i>The development of reservoirs, excluding dams with a capacity of more than 250 cubic metres. i. Western Cape ii. In areas containing indigenous vegetation</i>	An onsite reservoir of approximately 400m ³ will be required for the development.
4(i.)(ii.)(aa)	<i>The development of a road wider than 4 metres within a reserve of less than 13.5 metres within iii. the Western Cape Province, ii. All areas outside urban areas (aa) Areas containing indigenous vegetation</i>	The proposed project will be outside an urban area, it will also require the construction of a main access road with a width of up to 12m and internal access roads with a width of up to 7m (which may be wider during construction for blade transportation), in order to provide access to each wind turbine, substations and associated infrastructure, as well as to facilitate access throughout the sites. The project site overlaps with CBAs and ESAs.
10(i.)(ii.)	<i>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres in (i) the Western Cape Province, (ii) all areas outside urban areas,</i>	The proposed project will require the development of storage and operation facilities for dangerous substances associated with the BESS (technology dependent) with a capacity of 30 to 80 cubic metres in the Western Cape Province.
12(i)(ii)	<i>The clearance of area of 300 square metres or more of indigenous vegetation in (i) the Western Cape Province, (ii) within a critical biodiversity area identified in bioregional plans</i>	The proposed WEF, substation, BESS and associated infrastructure will require the clearance of more than 300m ² of indigenous vegetation within the project site, and. The project site overlaps with CBAs and ESAs.
14(ii)(a)(i) (i) (ff)	<i>The development of, (ii) infrastructure or structures with a physical footprint of 10 square metres or more where such development occurs- (a) Within a watercourse i. Western Cape i.) Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i>	The proposed project will require the development of infrastructure with a footprint in excess of 10m ² . The project infrastructure also overlaps in places within CBAs and ESAs.

No.	Activity description	Description of activity in relation to the proposed project
18(i)(ii)(aa)	<p><i>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre,</i></p> <p><i>i) Western Cape</i></p> <p><i>ii.) All areas outside urban areas:</i></p> <p><i>(aa) Areas containing indigenous vegetation;</i></p>	<p>In order to provide access to wind turbines, and associated infrastructure, as well as to facilitate access throughout the sites, existing internal roads will need to be upgraded as part of the proposed development (where required). Internal roads will be widened by more than 4m or lengthened by more than 1km. These roads located within the application site will occur within the Western Cape Province, outside urban areas. In addition, the proposed development area contains indigenous vegetation.</p>

2.3 NATIONAL WATER ACT NO 36 OF 1998

Chapter 4 of the National Water Act No 36 of 1998 (as amended), requires proponents to submit applications to the competent authority (Regional Office of the Department of Water and Sanitation (DWS)) where a water use listed under Section 21 of the Act is triggered. Water Use is defined broadly by the Act and includes, taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), alteration of a watercourse, removing water underground for certain purposes and recreation.

Possible water uses that could be triggered by the proposed development of the proposed project are outlined in Table 2-2. An application for a Water Use License (WUL) or General Authorisation (GA) must be undertaken in accordance with the regulations of GN R267 of 2017 and be submitted to the competent authority following the granting of an EA by DFFE and the project being selected as preferred bidder by the DMRE under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), or by another private off taker.

Table 2-2: List of potential Section 21 water uses applicable to the proposed project

No.	Water Use	Description of activity in relation to the proposed project
a	<i>Taking of water from water resource</i>	Abstraction of groundwater from a borehole will be required for various construction related activities such as concrete batching, earthworks for infrastructure and roads, dust suppression as well as general domestic water uses for flushing toilets, cleaning facilities and other general maintenance. During the operational phase of the Project, water will be required for general domestic water uses such as e.g. flushing toilets, cleaning facilities, dust suppression, road and other general maintenance.
c	<i>Impeding or diverting the flow of water in a watercourse</i>	The construction and operation of the project, it may potentially lead to an impeding or diverting of flow/ alteration of beds, banks, and course of a watercourse.
i	<i>Altering the bed, banks, course, or characteristics of a watercourse</i>	
e	<i>Engaging in a controlled activity.</i>	Potential irrigation with treated wastewater. Refer to below description.
g	<i>Disposing of waste in a manner that may detrimentally impact a water resource.</i>	Proposed conservancy tanks to be located at construction camps and then O&M buildings. The facility also intends to install a small domestic treatment plant, that will store, treat and then reuse water at the O&M buildings during facility operations. This to minimise potable water use, but the system may at time discharge water as irrigation. The expected volumes will be less than 50m ³ per day and within the associated water quality standards, thus meeting the GA limits for this water use.

Mainstream will be required to submit an application for a Water Use License (WUL) or General Authorisation (GA) Registration to the Regional Head of the Department of Human Settlements, Water and Sanitation in the Western Cape Province after the proposed project has been awarded preferred bidder status under the REIPPPP of the DMRE, or by another offtaker.

2.4 NATIONAL HERITAGE RESOURCES ACT NO 25 of 1999

The National Heritage Resources Act, 1999 (No. 25 of 1999) (NHRA) provides for the identification, assessment, and management of the heritage resources of South Africa. Section 38(1) of the NHRA lists development activities that would require authorisation by the responsible heritage resources authority. Activities considered applicable to the proposed project include the following:

“(a) The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length; ...

*(c) Any development or other activity which will change the character of a site;
 (i) exceeding 5 000 m² in extent.*

(d) the re-zoning of a site exceeding 10 000m² in extent”

Under the legislation, the South African Heritage Resources Agency (SAHRA), was established, which replaced the National Monuments Council. SAHRA is responsible for the preservation of heritage resources with exceptional qualities of special national significance (Grade I sites). A Provincial Heritage Resources Authority, established in each province, will protect Grade II heritage resources which are significance within the context of a province or region. Buildings and sites of local interest (Grade III sites) is the responsibility of local authorities as part of their planning functions. In this case, the Heritage Western Cape (HWC) will need to be consulted with extensively throughout the process.

The NHRA requires that a person who intends to undertake a listed activity notify the relevant provincial heritage authority at the earliest stages of initiating such a development. The relevant provincial heritage authority would then in turn, notify the person whether a Heritage Impact Assessment (HIA) should be submitted. However, according to Section 38(8) of the NHRA, a separate report would not be necessary if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act (No. 73 of 1989) (now replaced by NEMA) or any other applicable legislation. The decision-making authority should, however, ensure that the heritage evaluation fulfils the requirements of the NHRA and take into account in its decision-making any comments and recommendations made by the relevant heritage resources authority.

A Notice of Intent to develop (NID) was submitted to HWC by ASHA Consulting (Pty) Ltd on 09 November 2022 (**HWC22110903**).

Within the scope of this project, Section 38 of the NHRA (25 of 1999), states that, as described above, an assessment of potential heritage resources in the development area needs to be done. A Heritage Impact Assessment (HIA), Archaeological Impact Assessment (AIA), Paleontological Impact Assessment (PIA) and Cultural Landscape Assessment (CLA) has therefore been commissioned to explore how the proposed development may impact on heritage resources and potential cultural artefacts as protected by the Act.

2.5 NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT NO 59 of 2008

The National Environmental Management: Waste Act, 2008 (No. 59 of 2008) (NEM:WA) regulates all aspects of waste management and has an emphasis on waste avoidance and minimisation. NEM:WA creates a system for listing and licensing waste management activities. Listed waste management activities above certain thresholds are subject to a process of impact assessment and licensing. Activities listed in Category A require a Basic Assessment process, while activities listed in Category B require an EIA process. NEM:WA also provides for the setting of norms and standards for the storage and disposal of waste. These norms and standards are listed in GN R926 of 2013 (storage) and GN R636 of 2013 (disposal).

The proposed development of the proposed project does not trigger a Listed Activity in terms of NEM:WA, thus a Waste Management License for the project is not required. Any waste product produced would be disposed of via suitably qualified and licensed third-party service providers. Waste related impacts would also be further addressed in the Environmental Management Programme as part of the EIA Phase of the project.

2.6 LEGISLATION CONSIDERED IN THE PREPARATION OF THE SCOPING REPORT

In accordance with the EIA Regulations 2014 (as amended), all legislation and guidelines that have been considered in the EIA process must be documented. In addition to Sections 2.1 to 2.5, Table 2-3 provides a summary of other applicable and potentially applicable legislation.

Table 2-3: Additional Applicable Legislation

Applicable legislation	Relevance
National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004)	<p>The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA), as amended, aims to provide for the management and conservation of South Africa’s biodiversity within the framework of NEMA, the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources and the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. The Act places severe restrictions on activities that could have adverse effects on threatened or protected species.</p> <p>The purpose of the Act includes the following:</p> <ul style="list-style-type: none"> • The management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act, 1998; • The protection of species and ecosystems that warrant national protection; and • The sustainable use of indigenous resources and the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. <p>The Act makes provision for the protection of threatened or protected ecosystems and species as well as provisions guarding against the introduction of alien and invasive species. The Act identifies restricted activities involving listed threatened, protected or alien species. These activities includes picking parts of, or cutting, chopping off, uprooting, damaging, or destroying, any specimen of a listed threatened or protected species. As stipulated in Section 57 of the Act, a person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7.</p> <p>A permit may be required if we engage in restricted activities for the proposed project based on the specialist report in accordance with Section 88 of the Act. DESTEA will be the competent authority for the application. The presence of any threatened or protected ecosystems and species within the project site and requirement for permits will be confirmed in the Impact Assessment Phase.</p>
National Environmental Management: Protected Areas Act, 2003 (Act No.57 of 2003 as amended)	<p>The overarching aim of the National Environmental Management: Protected Areas Act (NEMPAA) Act No. 57 of 2003, within the framework of NEMA, is to provide for:</p> <ul style="list-style-type: none"> • the declaration and management of protected areas; • co-operative governance in the declaration and management of protected areas;

Applicable legislation	Relevance
	<ul style="list-style-type: none"> • effect a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity; • a representative network of protected areas on state land, private land and communal land; • promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas; • promote participation of local communities in the management of protected areas, where appropriate; and • the continued existence of South African National Parks. <p>Three formally protected areas are partially within 10km of the proposed WEF project area, these being the Matroosberg and Langeberg-Wes Mountain Catchment Areas (MCAs) and Drie Kuilen Private Nature Reserve, all of which would be considered sensitive receptors. It should be noted however that, Langeberg-Wes MCA and Drie Kuilen Private Nature Reserve are some distance from the WEF project area (8kms+) and partially outside the viewshed. Thus impacts on these two Protected Areas would be reduced. Matroosberg MCA occupies much of the western sector of the study area and adjoins a portion of the south-western boundary of the WEF project area. Much of this MCA is however outside the viewshed for the WEF project area and visual impacts would be restricted to areas located along the eastern boundary of the MCA.</p>
<p>Conservation of Agricultural Resources Act (CARA) (Act No. 43 of 1983)</p>	<p>This Act provides for the control over the utilization of the natural agricultural resources of the country in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants. Section 5 of the Act prohibits the spread of weeds through the prohibition of their sale. GN R1084 (published under CARA) provides categories for the classification of the various weeds and invader plants, and restrictions where these species may occur. Regulation 15E of GN R1084 provides methods to be implemented for the control of weeds and invader species.</p> <p>CARA finds application throughout the project lifecycle of the proposed project. As a result, soil conservation and erosion prevention management and mitigation measures need to be implemented. Furthermore, a Weed Control and Management Plan must be developed and implemented for the duration of the project life cycle of the proposed project.</p>

Applicable legislation	Relevance
	<p>Rehabilitation after disturbance to agricultural land is also 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)). The construction and operation of the facility will therefore not require consent from the Department of Agriculture, Land Reform and Rural Development in terms of this provision of CARA.</p>
<p>Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970), as amended</p>	<p>The Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970), as amended provides for the subdivision of all agricultural land within the Republic thereby prohibiting certain activities from being undertaken without consent from relevant authority, the Minister of the Department of Agriculture, Land Reform and Rural Development. This Act finds relevance to the proposed Ezelsjacht Project as any portion of land that is zoned for agriculture and will need to be leased for a period exceeding 10 years is regulated by the Act.</p>
<p>National Forests Act, 1998 (No. 84 of 1998)</p>	<p>The National Forest Act (NFA) empowers the Minister of DFFE to declare and list a tree, group of trees, woodland, or a species of trees as protected. A list of protected tree species is included in GN R908, published in November 2014. Section 7 of the Act prohibits the cutting and disturbance of NFA-listed trees.</p> <p>A permit is required for the removal of NFA-listed tree species in terms of Section 4 of the Act. Prior to the submission of the permit application to the competent authority, a survey of the project site is required in order to ascertain the presence and distribution of NFA-listed tree species.</p> <p>The presence of any NFA-listed tree species within the project site will be confirmed in the Impact Assessment Phase.</p>
<p>National Veld and Forest Fire Act, 1998 (No. 10 of 1998)</p>	<p>The National Veld and Forest Fire Act (NVFA) in Chapter 4 requires landowners to prepare and maintain firebreaks, as well as the role of adjoining landowners and the fire protection association in an area.</p> <p>The Act through Chapter 5 requires all landowners to acquire firefighting equipment and have available personnel for firefighting. Landowners with land where a veldfire may start or burn or from whose land it may spread must have firefighting equipment and personnel available.</p>

Applicable legislation	Relevance
	<p>There are no permitting requirements for the proposed project in accordance with the NVFA. However, it must be ensured that firebreaks within the boundaries of the project site are prepared and maintained and that firefighting equipment and personnel for the duration of the project life cycle of the proposed development is made available.</p>
<p>Occupational Health and Safety Act, 1993 (No. 85 of 1993) and Major Hazard Installation Regulations</p>	<p>This Act provides for the health and safety of persons at work and the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.</p> <p>The construction and operation of the proposed project will include activities that are deemed as hazards and/risk to the health and safety of the employees employed on the project. Such hazards/risks should be managed in accordance with the relevant requirements of the Act.</p>
<p>Hazardous Substances Act, 1973 (Act No. 15 of 1973)</p>	<p>The Hazardous Substances Act, 1973 (Act No. 15 of 1973) (HAS) was promulgated to provide for the control of substances which may cause injury, ill-health, or death. Substances are defined as hazardous if their inherent nature is toxic, corrosive, irritant, strongly sensitising, flammable and pressure (under certain circumstances) which may injure ill-health, or death in humans.</p> <p>The Act provides for the division hazardous substances or products into four groups in relation to the degree of danger, the prohibition and control of the importation, manufacture, sale, use, operation, application, and disposal of such substances.</p> <ul style="list-style-type: none"> • Group 1: includes all hazardous substances defined in the Act; • Group 2: substances include mixtures of Group 1 substances; • Group 3: substances include substances found in certain electronic products (i.e., product with an electronic circuit); and • Group 4: substances includes all radioactive substances. <p>The use or sale of Group I, II and III hazardous substances is prohibited. Should the use of these substances be required for the proposed project, a permit application should be submitted to the Department of Health (DoH) in terms of Section of the Act.</p>
<p>Municipal Systems Act, 2000 (Act No. 32 of 2000)</p>	<p>The Municipal Systems Act, 2000 (Act N. 32 of 2000) was promulgated for the administration of municipalities. The Act requires that the Constitution and other legislation, i.e., NEMA be incorporated into strategic plans at local government level. The Act regulates municipal service delivery and provides a comprehensive range of service delivery mechanisms through which municipalities may provide municipal services. The Act explains the process to be applied and the criteria to be considered in reviewing and selecting municipal service delivery mechanisms.</p>

Applicable legislation	Relevance
	<p>The Act provides that each municipal council must adopt a single, inclusive, and strategic Integrated Development Plan (IDP) for the development of the municipality. At a municipal level, IDPs may require the implementation of renewable energy projects. As a result, IPPs should consult with the relevant structures of the municipality within which a development is located.</p>
<p>The Spatial Planning and Land Use Management Act, 2013 (No. 6 of 2013) (SPLUMA)</p>	<p>The Spatial Planning and Land Use Management Act, 2013 (Act No. 6 of 2013) aims to confirm and regulate the role of municipalities in land use planning and management. Objectives of the Act relevant to the proposed project ensure that the system of spatial planning and land use management promotes social and economic inclusion and to provide for the sustainable and efficient use of land.</p> <p>The current zoning of the project site is agriculture; thus, a rezoning application would be required to change the zoning of the site from agriculture to special purpose.</p>
<p>Civil Aviation Act, 2009 (Act No. 13 of 2009)</p>	<p>The Civil Aviation Act, 2009 (Act No. 13 of 2009) (CAA), governs civil aviation in the Republic. The Act provides for the establishment of a stand-alone authority mandated with the 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 (SACAA), an agency of the Department of Transport (DoT).</p> <p>The SACAA achieves the objectives of the Act by complying with the Standard 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 development or activities in South Africa that potentially could affect civil aviation must be assessed by SACCAA in terms of the CARs and the South African Civil Aviation Technical Standards (SA CATs) in order to ensure civil aviation safety.</p> <p>The SACAA will be provided with the Scoping and EIA reports of the proposed project for their comment during the 30-day review and comment periods.</p>
<p>National Traffic Act, 1996 (No. 93 of 1996)</p>	<p>The Act and the National Traffic Regulations, 2000 provide certain limitations on vehicle dimensions and axle and vehicle masses that a vehicle using a public road at any given time must comply with. Certain vehicles and loads cannot be moved on public roads without exceeding the limitations in terms of the dimensions and/or mass as prescribed. Where such a vehicle or load cannot be dismantled, without disproportionate effort, expense, risk, or damage, into units that can travel or be transported legally. Such load is classified as an abnormal load and is permitted to be transported on public roads under an exemption permit issued in terms of Section 81 of the Act.</p> <p>A permit application in terms of Section 81 of the Act will be required for the transportation of key infrastructure components and machinery to the project site during the construction phase of the proposed project.</p>

2.7 GUIDELINES

The guidelines listed in Table 2-4 have been or will be considered during the EIA process.

Table 2-4: Guidelines considered in the EIA process

Guideline	Governing Body	Relevance
Mitigating biodiversity impacts associated with solar and wind energy development (2021)	International Union of Conservation of Nature	Provides guidelines for mitigating biodiversity impact associated with the development of wind energy developments.
Procedures for the Assessment and Minimum Criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation	DFFE	Provides procedures for ground-truthing environmental themes identified by the web-based Screening Tool. The baselines studies used in the Scoping Report have been undertaken in accordance with the requirements of this Notice, where relevant.
Public Participation in terms of NEMA, EIA Regulations (2017)	DFFE	The purpose of this guideline is to ensure that an adequate public participation process was undertaken during the Scoping and EIA process.
Guideline on need and desirability in terms of the EIA Regulations (2014)	DFFE	These guidelines inform the consideration of the need and desirability aspects of the proposed project.
EIA Guideline for Renewable Energy Projects (2015)	DFFE	This guideline aims to ensure that all potential environmental issues pertaining to renewable energy projects are adequately and timeously assessed and addressed as necessary so as to ensure sustainable roll-out of these technologies by creating a better understanding of the environmental approval process for renewable energy projects.

3. EIA APPROACH AND PROCESS

3.1 DETAILS OF THE EIA PROJECT TEAM

The details of the EIA project team that were involved in the preparation of this Scoping Report are provided in **Table 3-1**. SLR has no vested interest in the proposed project other than fair payment for consulting services rendered as part of the EIA process and has declared its independence as required by the EIA Regulations 2014, as amended (see Appendix 1).

Table 3-1: Details of the EIA Project Team

General				
Organisation	SLR Consulting (South Africa) (Pty) Ltd			
Postal address	PO Box 798 RONDEBOSCH 7701			
Tel No.	+27 (0)21 461 1118 / 9			
Fax No.	+27 (0)21 461 1120			
Name	Qualifications	Professional registrations	Experience (Years)	Tasks and roles
Stuart-Heather Clark	B.Sc. (Hons) Civil Engineering M.Sc. Environmental Management	IAIAsa ¹ EAPASA ²	24	Registered EAP for the project. Compilation and ensuring reporting meets the legislated requirements.

3.2 QUALIFICATIONS AND EXPERIENCE OF THE EAP

- **Stuart Heather-Clark (EAP)** is a Technical Director in SLR’s Environmental Management Planning and Approvals (EMPA) team in Africa. He holds a B.Sc. (Honours) in Civil Engineering and a Master’s degree in Environmental Science and has 24 years of relevant experience. He has expertise in a wide range of environmental disciplines, including EIAs, EMPs, environmental planning and review and public consultation and is a registered EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA).

Relevant curricula vitae are attached in Appendix 2.

3.3 ASSUMPTIONS AND LIMITATIONS

The assumptions pertaining to this EIA are listed below:

¹ International Association for Impact Assessment South Africa (IAIAsa)

² Environmental Assessment Practitioners Association of South Africa (EAPASA)

- It is assumed that SLR has been provided with all relevant project information and that it was correct and valid at the time it was provided;
- It is assumed that the project site identified for the construction and operation of the proposed project by Mainstream represents a technically feasible site for the construction and operation of a WEF which is based on the design undertaken by technical consultants on the project;
- There will be no significant changes to the project description or surrounding environment between the completion of the EIA process and implementation of the proposed project that could substantially influence findings and recommendations with respect to mitigation and management, etc.; and
- Should any future infrastructure being proposed within the project site trigger additional listed activities not included in this EIA process, a separate application process for EA would need to be undertaken and submitted to the relevant competent authority.

3.4 SCOPING PHASE

3.4.1 Objectives

In accordance with Appendix 2 to the EIA Regulations 2014 (as amended), the objectives of the scoping process are to:

- Identify the relevant policies and legislation relevant to the activity;
- Present the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred activity, technology and sites related to the project proposal;
- Identify the key issues to be addressed in the assessment phase;
- Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required, as well as the extent of further consultation to determine the risks and impacts that activity will impose on the preferred site throughout the project life cycle of the activity; and
- Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of residual risks that need to be managed and monitored.

The scoping process consists of a series of steps to ensure compliance with these objectives and the EIA Regulations 2014 as set out in GN R982 (as amended). The process involves an open, participatory approach to ensure that all impacts are identified, and that decision-making takes place in an informed, transparent, and accountable manner. A flowchart indicating the generic EIA process and associated timelines is presented in Figure 3-1 below.

3.4.2 Pre-Application Authority Consultation and Notification

SLR attended a pre-application meeting with DFFE on **19 October 2022 (Reference: 2022-09-0033)** (Refer attached in Appendix 3). The purpose of this meeting was to provide DFFE with an overview of the proposed *Ezelsjacht Renewable Energy Facilities* and to obtain clarity on the legislative requirements and the approach to the EIA process for the Ezelsjacht WEF project (this project), in order to ensure agreement on the way forward. Furthermore, the purpose of the meeting was also to discuss the proposed methodology to be followed for the undertaking of the specialist studies to support the application for EA as well as the planned public participation process to be undertaken.

Summary of Key points from the Pre-Application Meeting with DFFE

ATTENDANCE	<p>SLR Consulting (South Africa) (Pty) Ltd ('SLR') – Environmental Consultant</p> <ul style="list-style-type: none"> • Liandra Scott-Shaw (LSS) – Associate Environmental Consultant • Katherine Wiles (KW) – Associate Environmental Consultant • Humayrah Bassa (HB) - Associate Environmental Consultant and support as Registered EAP for meeting • Andisiwe Mkhize (AM) – Environmental Consultant <p>Apologies:</p> <ul style="list-style-type: none"> • Stuart Heather-Clark - Registered EAP for the proposed project <p>South Africa Mainstream Renewable Power Developments (Pty) Ltd ('Mainstream') – Applicant</p> <ul style="list-style-type: none"> • Liza Janse van Vuuren (LJvV) - Development Executive 	<p>Department of Forestry, Fisheries and the Environment (DFFE) – Competent Authority</p> <ul style="list-style-type: none"> • Muhammad Essop (ME) – Control Environmental Officer: Priority Infrastructure Projects • Herman Alberts (HA) – Environmental Officer Specialised Production: Priority Infrastructure Projects • Trisha Rene Pillay (TRP) - Environmental Officer Specialised Production: Priority Infrastructure Projects • Coenrad Agenbach (CA) - Control Environmental Officer: Priority Infrastructure Projects
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Summary of Discussion		
NOTES	COMMENT	RESPONSE
<p>1. Confirmation at submitting separate applications; and 4</p> <p>2. Specific requirements in terms of report writing.</p>	<p>CE added that whilst it was acceptable to submit four (4) separate applications, SLR must try and align the projects in some respects (i.e., the WEF/SEF application must talk to the relevant Grid application).</p>	<p>KW confirmed that the Draft BARs for the grids would be circulated for public comment simultaneously with the Draft EIRs and that the interlinkages would be discussed briefly in the reports as well as in terms of the cumulative impact assessment.</p>
	<p>ME added that generic Environmental Management Programmes (EMPr) must be compiled for the substations and powerlines.</p>	<p>KW agreed and noted that the generic EMPs for the substation and the powerline would be included in the DEIRs and DBARs.</p>
<p>3. If DFFE agreed with combining the PPP for the proposed developments in</p>	<p>ME and TR indicated that they have no concerns with combining certain portions of the PPP but stressed that the</p>	<p>KW noted that they would ensure I&APs provide comment on each specific project (i.e., Ezelsjacht WEF/Ezelsjacht SEF and Ezelsjacht</p>

<p>terms of newspaper adverts and site notices.</p>	<p>Comments and Response Reports (CRRs) must be specific for each project.</p>	<p>WEF Grid/Ezelsjacht SEF Grid) so that CRRs can be submitted for each project.</p>
<p>4. DFFE to confirm whether they are in agreement with proposed specialist studies and approach.</p>	<p>ME asked KW how the specialists' studies to be undertaken for the proposed projects were determined. ME stressed that he would like to see a section in the DSR's and the DBAR listing all the required specialists' studies, their associated sensitivities and verification of these based on the site visit.</p>	<p>KW explained that specialists' studies to be undertaken were informed by the environmental sensitivities and results generated from the National DFE Screening Tool.</p> <p>KW indicated that the current approach was to have desktop sensitivities where certain specialists had not been to site during the Scoping phase. LJV enquired if the site visit was a mandatory requirement in terms of compiling a Site Sensitivity Verification Report (SSVR) in instances where specialists can based on experience indicate the sensitivity of the area. ME requested the EAP to respond. HB confirmed that the SSVR had to be undertaken by either a specialist <u>or an EAP</u>.</p> <p>KW added that there may be a concern on timing since some specialist may not get to site but that SLR would discuss this with Mainstream and the specialists.</p> <p>It was agreed that SSVRs would be submitted as part of the DSR circulations.</p>
	<p>KW also enquired regarding the BESS triggers and noted that previous experience was to include the BESS activities even if at this stage Mainstream was not sure on the technology. (Noting that Lithium-ion often didn't trigger LNs, and Redox flow did).</p>	<p>ME stressed that as long as the potential impacts are assessed and an activity is not just added for the sake of adding it, this would be fine.</p>

3.4.3 Specialist Studies to be Undertaken

The results of the specialist teams site verification reports and the terms of reference are presented in Sections 8.3 & 8.4. The terms of reference of these investigations have been designed to address all the issues that have been identified by the EIA project team.

As part of these studies, specialists will gather data relevant to identifying and assessing environmental impacts that might occur as a result of the proposed project in their particular field of expertise. They will provide baseline information and identify and assess impacts according to predefined rating scales (refer to Section 8.5). Specialists will also suggest ways in which negative impacts could be mitigated and benefits could be enhanced. The results of the specialist studies will be integrated into an EIA Report.

3.4.4 Application for Environmental Authorisation

An 'Application Form for Environmental Authorisation' will be submitted to DFFE on **11 November 2022** at the same time as making this draft version of the Scoping Report available for public review and comment. Public Participation activities completed to date in support of the application for Environmental Authorisation for the proposed project are outlined in Box 3-1 below.

2014 EIA REGS AUTHORISATION TIMELINE – SCOPING & EIR

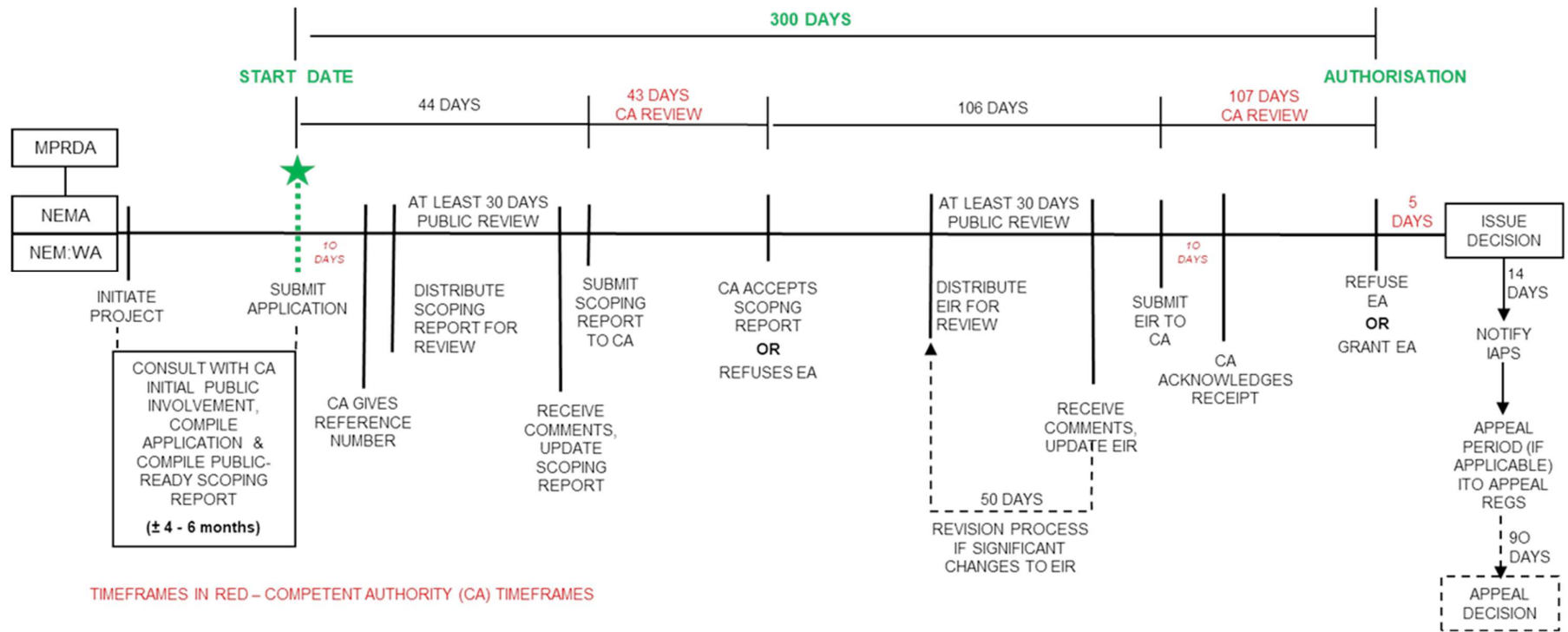


Figure 3-1: Flow Diagram Showing the EIA Process with associated timelines

Box 3-1: Public Participation Tasks undertaken during the Scoping Phase

TASKS UNDERTAKEN DURING THE SCOPING PUBLIC PARTICIPATION PROCESS

- I&AP Identification**

The I&AP database was developed through a process of obtaining information from SLR's existing stakeholder database of projects in the area and liaison with potentially affected I&APs within the surrounding area. Key stakeholders, including organs of state, ward councillors, affected and adjacent landowners have been identified and registered on the database (see Appendix 3).

- Advertisements and Site Notices**

A newspaper advert (English and Afrikaans), providing notification of the proposed project and the Scoping and EIA process was placed on **10th November 2022** in the *Worcester Standard* newspaper (see Appendix 3). Site Notices (in English and Afrikaans) have been placed at the entrances of the project site and in the town of De Doorns, Touws Rivier and Montagu where there is a lot of foot traffic (libraries etc) in order to advertise the Scoping and EIA process of the proposed project.

3.4.5 Compilation of the Scoping Report

This draft Scoping Report has been prepared in compliance with Appendix 2 of the EIA Regulations 2014 (as amended) (see Table 3-2 below).

This report aims to present all information in a clear and understandable format suitable for easy interpretation by I&APs, State Departments/Organs of State, the competent and commenting authorities and provides an opportunity for I&APs to comment on the proposed project and the Plan of Study for the EIA (see Section 8).

Table 3-2: Requirements of a Scoping Report in terms of the EIA Regulations, 2014 (as amended)

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
2(a)	<i>(i & ii) Details and expertise of the Environmental Assessment Practitioner (EAP) who prepared the report, including a CV.</i>	Y	Chapter 0 Sections 3.1 and 3.2 Appendix 2
(b)	<i>The location of the activity, including:</i>	Y	Chapter 5 Table 5-1
	<i>(i) the 21-digit Surveyor General code of each cadastral land parcel; or</i>		
	<i>(ii) where available, the physical address and farm name</i>		
	<i>(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;</i>		
(c)	<i>A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is:</i>	Y	Chapter 5 Figure 1-1 and 1-2.
	<i>(i) a linear activity, a description, and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or</i>		

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
	<i>(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken.</i>		
(d)	<i>A description of the scope of the proposed activity, including:</i>	Y	Chapter 2 Section 2.2
	<i>(i) all listed and specified activities triggered;</i>		
	<i>(ii) a description of the activities to be undertaken, including associated structures and infrastructure.</i>	Y	Chapter 5 Section 5.3 – 5.5
(e)	<i>A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.</i>	Y	Chapter 2 Section 2.1– 2.7 Chapter 4 Section 4.1 – 4.3
(f)	<i>A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.</i>	Y	Chapter 4
(h)	<i>A full description of the process followed to reach the proposed preferred activity, site and location within the site, including:</i>	Y	Section 5.7
	<i>(i) details of all the alternatives considered;</i>		
	<i>(ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs;</i>	Y	Chapter 3.4
	<i>(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</i>		To be provided on completion of the draft Scoping Report 30-day review and comment period.
	<i>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Y	Chapter 6
	<i>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed, or mitigated.</i>	Y	Section 7.3
	<i>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</i>	Y	Chapter 8 Section 8.5
<i>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Y	Chapter 8 Section 8.5	

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
	<i>(viii) the possible mitigation measures that could be applied and level of residual risk;</i>	Mitigation measures to be provided in the Environmental Management Programme to be prepared in the EIA Phase.	
	<i>(ix) the outcome of the site selection matrix;</i>	N/A	No alternative sites have been considered. Refer to Section 5.7
	<i>(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</i>	Y	Chapter 5 Section 5.7
	<i>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity.</i>	Y	
<i>(i)</i>	<i>A plan of study for undertaking the environmental impact assessment process to be undertaken, including:</i>	Y	Chapter 8
	<i>(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;</i>		
	<i>(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;</i>		
	<i>(iii) aspects to be assessed by specialists;</i>		
	<i>(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;</i>		
	<i>(v) a description of the proposed method of assessing duration and significance;</i>		
	<i>(vi) an indication of the stages at which the competent authority will be consulted;</i>		
	<i>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and</i>		
	<i>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;</i>		
	<i>(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</i>		
<i>(i)</i>	<i>An undertaking under oath or affirmation by the EAP in relation to:</i>	Y	Appendix 1
	<i>(i) the correctness of the information provided in the report;</i>		
	<i>(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and</i>		

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
	<i>(iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;</i>		
<i>(k)</i>	<i>An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment.</i>		
<i>(l)</i>	<i>Where applicable, any specific information required by the competent authority.</i>	N/A	N/A
<i>(m)</i>	<i>Any other matter required in terms of Section 24(4)(a) and (b) of the Act.</i>	N/A	N/A

3.4.5 Completion of the Scoping Phase

The following steps are envisaged for the remainder of the Scoping Phase:

- After closure of the 30-day comment and review period on the Draft Scoping Report, the Scoping Report will be updated to incorporate the comments received. Comments will be assimilated and responded to in a Comments and Responses Report; and
- The Final Scoping Report will be submitted to DFFE for consideration.

If the Scoping Report is accepted, the project will proceed onto the Impact Assessment Phase (see Section 8.1). A Plan of Study for EIA as required in terms of Section 2(i) of Appendix 2 of GN R982 (as amended) is included in Chapter 8 of this report.

3.5 IMPACT ASSESSMENT PHASE

3.5.1 Objectives

In accordance with Appendix 3 of GN R982 (as amended) the key objectives of the EIA are to:

- Determine the policies and legislation relevant to the activity and document how the proposed activity complies with and responds to the policy and legislative context;
- Describe the need and desirability of the proposed activity in the context of the project site as contemplated in the accepted Scoping Report;
- Identify feasible alternatives related to the project proposal;
- Ensure that all potential key environmental issues and impacts that would result from the proposed project are identified;
- Assess potential impacts of the proposed project alternatives during the different phases of project development;
- Identify the most ideal location of the activity within the affected property based on the lowest level of environmental sensitivity identified during the assessment;
- Present appropriate mitigation or optimisation measures to avoid, manage or mitigate potential impacts or enhance potential benefits, respectively; and
- Identify residual risks that need to be managed and monitored.

Provide a reasonable opportunity for I&APs to be involved in the EIA process.

The undertaking of the above-mentioned activities as part of the EIA process ensures an informed, transparent, and accountable decision-making process by the competent authority.

3.5.2 Integration of Assessment

The specialist information and other relevant information will be integrated into a Draft Environmental Impact Report (EIR), which will include an Environmental Management Programme (EMPr). The specialist studies will be included as appendices to the Draft EIR. The Draft EIR will be released for a 30-day review and comment period and all I&APs on the project database will be notified of when the Draft EIR is available for comment.

After closure of the comment period, all comments received on the Draft EIR will be incorporated and responded to in a C&RR. The Draft EIR will then be updated to a final report, which will include the C&RR, and will be submitted to DFFE for their consideration and decision making.

After DFFE has reached a decision, all I&APs on the project database will be notified of the outcome of the application for EA and the reasons for the decision. A legislated appeals period in terms of the National Appeal Regulations, 2014 (GN R993) will follow the issuing of the decision. In terms of Regulation 4(1)(a), an appellant must submit an appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered I&AP, and any Organ of State with interest in the matter within 20 days from the date that the notification of the decision for the application for EA was sent to the registered I&APs by the applicant

4. NEED & DESIRABILITY

The DFFE (then, the Department of Environmental Affairs) Guideline on Need and Desirability (GN R891, 2014) notes that while addressing the growth of the national economy through the implementation of various national policies and strategies, it is also essential that these policies take cognisance of strategic concerns such as climate change, food security, as well as the sustainability in supply of natural resources and the status of our ecosystem services. Thus, the over-arching framework for considering the need and desirability of development in general is taken at the policy level through the identification and promotion of activities / industries / developments required by civil society as a whole. The DFFE guideline further notes that at a project level (as part of an EIA process), the need and desirability of the project should take into consideration the content of regional and local plans, frameworks, and strategies.

In light of the above, this section aims to provide an overview of the need and desirability for the proposed Ezelsjacht WEF Project by highlighting how it is aligned with the strategic context of international, national, regional, and local development policy and planning, and broader societal needs as appropriate

4.1 INTERNATIONAL POLICY AND PLANNING FRAMEWORK

4.1.1 United Nations Framework Convention on Climate Change and Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty addressing climate change, negotiated, and signed by countries at the United Nations Conference on Environment and Development (UNCED), or the 'Earth Summit', held in Rio de Janeiro from 3 to 14 June

1992. The primary objective of the treaty is to stabilize greenhouse gas emissions in the atmosphere to a level that prevents human-induced interference with the earth's climate system. The treaty places an obligation on signatory countries such as South Africa to adopt national policies and take concomitant measures on the mitigation of climate change impacts by limiting their anthropogenic emissions of greenhouse gases as well as to report on the steps undertaken to return their emissions to pre-1990 levels. In addition, the treaty requires more developed economies (i.e., USA) to provide financial resources to meet the costs incurred by developing nations in complying with their obligations to produce national inventories of their emissions.

The UNFCCC laid the foundation for the implementation of the Kyoto Protocol which was signed by Parties in 1997 and enforced in 2005. In 2016, the UNFCCC was superseded by the 2016 Paris Agreement at the Conference of Parties (COP19) in Warsaw, Poland.

The Kyoto Protocol marked the implementation of the first measures of the UNFCCC and applies to six greenhouse gases namely CO₂, CH₄, N₂O, HFCs, PFCs and SF₆. The protocol primarily operationalises the aims of the UNFCCC by committing industrialised countries and economies in transition to limit and reduce their greenhouse emissions in accordance with the agreed individual targets. The protocol requires signatories to adopt policies, measures on mitigation and to report greenhouse gas emissions periodically³. South Africa is the world's 14th largest emitter of greenhouse gases and accounts for highest emissions of CO₂ on the continent⁴.

South Africa's emissions are a result of its reliance on the combustion of fossil fuels for the generation of electricity. In 2019, South Africa emitted approximately 478.61 million tonnes of CO₂ annually and 279.9 million tonnes was from electricity generation⁵.

In order to fulfil the requirements of the UNFCCC and the Kyoto Protocol, government has developed legislation and policy to provide the framework indicating how commitments to reduce greenhouse gas emissions will be met. These policies include the National Climate Change Response Policy, Climate Change Bill, and the Carbon Tax Act, 2019 (Act No. 15 of 2019) and are explored further in Section 4.2 of this Scoping Report.

Taking the above into consideration, the proposed development of the Ezelsjacht WEF Project will generate at least 140 MW_{ac} of electricity from renewable energy, thereby reducing government reliance electricity generation from the combustion of fossil fuels which leads to the inevitable release of greenhouse gases such as CO₂ into the atmosphere. From this perspective, the proposed project is in alignment with the obligations placed on South Africa in response to climate change through the UNFCCC and the Kyoto Protocol.

4.1.2 Paris Agreement

The Paris Agreement is an agreement in terms of the UNFCCC on climate change, mitigation, adaptation, and finance signed in 2016 at COP21 held in Le Bourget near Paris, France. The agreement set out to improve upon and replace the Kyoto Protocol by committing countries to keep the long-term rise of global

³What is the Kyoto Protocol? | UNFCCC. Accessed on 7 April 2021

⁴The Carbon Brief Profile: South Africa | Carbon Brief. Accessed on 7 April 2021

⁵<https://ourworldindata.org/co2/country/south-africa>. Accessed on 7 April 2021

temperature rise to below 2°C, above pre-industrial levels and to pursue efforts to limit the increase to 1.5°C recognizing that this would substantially reduce the risks and impacts of climate change.

South Africa signed the Paris Agreement and submitted its pledge in 2015. The pledge is also known as the 'Nationally Determined Contribution' or NDC. According to the pledge, South Africa adopted a 'peak, plateau and decline' approach whereby it is anticipated the greenhouse gas emissions will peak by 2025, plateau for a decade and then start to decline. By signing the agreement, countries are required to adopt the conditions of the agreement into their own legal systems through ratification, acceptance, approval, or accession. The agreement will become enforceable when ratified by at least 55 countries, which together account for at least 55 % of the global greenhouse gas emissions.

By prioritising the procurement of electricity from renewable energy technologies through the Integrated Resources Plan (IRP) and the REIPPPP, government has begun acting on the obligations of the Paris Agreement. Therefore, the development of the Ezelsjacht 140MW WEF Project, which will contribute at least 140 MW_{ac} of electricity from renewable energy (wind) will aid government in reaching its target to peak with greenhouse gas emissions by 2025. From this perspective, the proposed project aligns with the Paris Agreement and any updates thereto.

4.2 NATIONAL POLICY AND PLANNING FRAMEWORK

4.2.1 Energy White Paper, 1998

The 1998 White Paper on the Energy Policy of the Republic of South Africa is the primary policy document which guides all subsequent policies, strategies, and legislation within the energy sector. It provides specific policy statements on what government intends for the energy system as a whole and sets out five (5) key objectives. These objectives have subsequently formed the foundation and informed the development of energy policy in South Africa and still remain relevant. Various other energy policies have been developed and are in different stages of implementation. Some of the key policies developed following the 1998 White Paper on Energy Policy include:

- The White Paper on Renewable Energy, 2003;
- The National Energy Efficiency Strategy of the Republic of South Africa, 2008; and
- The Integrated Resources Plan 2010/2019.

The proposed project will have a total generating capacity of up to 140 MW_{ac} which will be added to the grid. This capacity will through the REIPPPP aid government meet its targets of ensuring energy security and supply as per the objectives of the provisions of the 1998 White Paper on Energy Policy.

4.2.2 Electricity Regulation Act, 1999 (Act No. 47 of 1999)

The Electricity Regulation Act, 1999 (Act No. 47 of 1999), as amended provides a national regulatory framework for the electricity supply and makes the National Energy Regulator of South Africa (NERSA) the overseer and enforcer of the framework. The Act requires that anyone with the intention to generate, transmit, reticulate, distribute, import, and export electricity to obtain approval from NERSA.

The proposed Ezelsjacht WEF Project will require a generation license from NERSA in terms of the Act. The application process for the generation license will be undertaken when a positive decision on the application

for an EA has been issued by DFFE and the project is granted preferred bidder status by the DMRE under the REIPPPP, or by another off taker.

4.2.3 Integrated Energy Plan, 2016

The development of a National Integrated Energy Plan (IEP) was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998, and in terms of the National Energy Act, 2008 (No. 34 of 2008) which places an obligation on the Minister of the DMRE to publish the IEP in the Government Gazette. The intention of the IEP is to provide a roadmap of the future of the energy landscape for South Africa which guides future energy infrastructure investments and policy development. The National Energy Act, 2008 (No. 34 of 2008) requires the IEP to have a planning horizon of no less than 20 years. The development of the IEP is therefore a continuous process as it needs to be reviewed periodically to consider changes in the macroeconomic environment, developments in new technologies and changes in national priorities and imperatives.

As a fast-emerging economy, South Africa needs to balance the competing need for continued growth with its social needs and the protection of the natural environment. South Africa needs to grow its energy supply to support economic expansion and in so doing, alleviate supply bottlenecks and supply-demand deficits. In addition, it is essential that all citizens are provided with clean and modern forms of energy at an affordable price. From the myriad of factors which had to be considered and addressed during the Integrated Planning Process, eight (8) key objectives were identified:

- Objective 1: Ensure security of supply;
- Objective 2: Minimise the cost of energy;
- Objective 3: Promote the creation of jobs and localisation;
- Objective 4: Minimise negative environmental impacts from the energy sector;
- Objective 5: Promote the conservation of water;
- Objective 6: Diversify energy supply sources and primary sources of energy;
- Objective 7: Promote energy efficiency in the economy; and
- Objective 8: Increase access to modern energy.

In the 2016 Draft, the IEP indicates the South Africa is endowed with renewable energy resources in the form of solar irradiation, and wind in coastal and mountainous areas, which have in the past remained untapped.

The proposed Ezelsjacht WEF Project is aligned with the precepts of the IEP in exploring renewable energy sources in the country in order to ensure a security of supply to promote the creation of jobs whilst minimising negative environmental impacts within the energy sector. Wind Energy Facilities have limited water requirements in comparison to other energy generation technologies, such as coal-fired power stations, which further supports the objectives of the IEP regarding the promotion of water conservation. As a result, the construction and operation of the proposed project supports the objectives of the IEP from a need and desirability perspective.

4.2.4 Integrated Resources Plan, 2019

The IRP, published in 2010 and promulgated in March 2011 and is a subset of the IEP is an electricity capacity plan which aims to provide an indication of the country’s electricity demand, how this demand will be supplied and what it will cost. The recent IRP 2019 supports a diverse energy mix and presents policy interventions to ensure energy security for South Africa’s electricity supply. Following the promulgation of the IRP 2010, a total of 18 000 MW of new generation capacity has been committed which comprises 9 564 MW of coal power from the Medupi and Kusile power stations, and 1 332 MW from the Ingula Pump Storage Project, 6 422 MW from renewable energy facilities and Independent Power Producers (IPPs), 1 055 MW from Open Cycle Gas Turbine Peaking Plants that will use diesel⁶. Through the IRP 2019, government recognises that coal will continue to play a significant role in electricity generation given the abundance of coal reserves. However, the existing Eskom fleet of coal-fired power stations will be decommissioned until 2030 and only then will 1 500 MW be procured from coal-fired power sources. From a renewable energy perspective, government has allocated 14 400 MW of new capacity to be procured from wind facilities between 2022 and 2030.

Figure 4-1 illustrates a snapshot of South Africa’s energy mix to date, as presented in the IRP 2019⁷.

	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen, Biomass, Landfill)
Current Base	37,149		1 860	2,100	2 912	1 474	1 980	300	3 830	499
2019	2,155	-2,373					244	300		Allocation to the extent of the short term capacity and energy gap.
2020	1,433	-557				114	300			
2021	1,433	-1,403				300	818			
2022	711	-844			513	400	1,000	1,600		
2023	750	-555				1,000	1,600		500	
2024			1,860				1,600	1,000	500	
2025						1,000	1,600		500	
2026		-1,219					1,600		500	
2027	750	-847					1,600	2,000	500	
2028		-475				1,000	1,600		500	
2029		-1,694			1,575	1,000	1,600		500	
2030		-1,050		2,500		1,000	1,600		500	
TOTAL INSTALLED CAPACITY by 2030 (MW)	33,364		1,860	4,600	5,000	8,288	17,742	600	6,380	
% Total Installed Capacity (% of MW)	43		2.36	5.84	6.35	10.52	22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)	58.8		4.5	8.4	1.2*	6.3	17.8	0.6	1.3	

- Installed Capacity
 - Committed/Already Contracted Capacity
 - Capacity Decommissioned
 - New Additional Capacity
 - Extension of Koeberg Plant Design Life
 - Includes Distributed Generation Capacity for own use
- 2030 Coal Installed Capacity is less capacity decommissioned between years 2020 and 2030.
 - Koeberg power station rated/installed capacity will revert to 1,926MW (original design capacity) following design life extension work.
 - Other/ Distributed generation includes all generation facilities in circumstances in which the facility is operated solely to supply electricity to an end-use customer within the same property with the facility.
 - Short term capacity gap is estimated at 2,000MW.

Figure 4-1: A snapshot of the IRP 2019

⁶ What you need to know: South Africa's Integrated Resource Plan 2019 (miningreview.com).

⁷ Cliffe Dekker Hofmeyr - The Integrated Resource Plan 2019: A promising future roadmap for generation capacity in South Africa.

In line with the IRP 2019, the DMRE launched a Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) in August 2020⁸ to fill the current 2 000 MW short-term supply gap of electricity between 2019 and 2022 to alleviate supply constraints and reduce the extensive need of diesel-based peaking electrical generators. Due to the nature of the RMIPPPP, the objective of the DMRE was to procure energy from projects that were near ready. By December 2020, at least 28 bidders with near ready projects submitted bids to the DMRE to potentially supply the required 2 000 MW. These projects comprised gas, solar, wind and hybrid energy projects. In March 2021, the DMRE announced eight successful preferred bidder projects to supply 2 000 MW to the grid. In October 2021, 25 successful bidders were announced for bid window five of the independent power producers (IPP)'s project. On 3rd October 2022 bids received for bid window six were also announced with a total of 56 bids received.

Taking the above into consideration, the proposed Ezelsjacht WEF Project has a total generating capacity of up to 140 MW_{ac} and it is understood that Mainstream will bid the project into the REIPPPP upon receiving a positive EA from DFFE. Considering that the project will utilise wind energy technology to generate electricity, the project is aligned with the targets of the IRP 2019.

Renewable Energy Independent Power Producer Procurement Programme

The Renewable Energy Independent Power Producer Procurement (REIPPPP) Programme is a competitive tender process that was launched to facilitate private sector investment into grid-connected renewable energy generation. Through the REIPPPP, government intends to enhance its power generation capacity, reduce reliance on the combustion of fossil fuels for the generation of electricity, stimulate an indigenous renewable energy industry and contribute to socio-economic development and environmentally sustainable growth. The programme supports the implementation of the National Development Plan and is centred on the procurement of electricity produced by the private sector through Independent Power Producers. Technologies such as wind energy amongst others are currently considered under the programme.

The programme evaluates projects through various criterion which include job creation, local content, enterprise development and socio-economic development. The requirement from each criterion is summarised below.

a) Job Creation

Under the REIPPPP, this criterion requires IPPs to disclose the percentage of the project's total jobs that will be awarded to South African citizens, especially historically disadvantaged community members within communities where projects are located (Eberhard, 2015). The Ezelsjacht WEF Project will contribute to employment opportunities for the duration of the construction and operation phase of the project to local communities within the vicinity of the project site.

b) Local Content

This criterion requires IPPs to spend a certain percentage of the total value project value in South Africa to ensure that the country derives positive economic benefits from the implementation of these projects. To date, REIPPPP projects have attracted at least USD 20.5 billion in investment into

⁸ IPP Risk Mitigation (ipp-rm.co.za).

the South African economy. For the Ezelsjacht WEF Project, a large percentage of Capital Expenditure from the project will be spent in South Africa.

c) Enterprise Development

This criterion intends to direct investment from IPPs towards Exempted Micro Enterprises and Qualifying Small Enterprises that are owned by historically disadvantaged women. Since its inception, the REIPPPP has directed at least R6 billion towards enterprise development (Eberhard and Naude, 2015).

d) Socio-economic Development

This criterion aims to direct funding to socio-economic initiatives in such a way that a project has a positive socio-economic impact on an area by funding initiatives and projects related to improvements in healthcare, infrastructure, and education. This criterion requires that this funding be directed towards initiatives within the project area. IPPs are required to spend a threshold of 1 % of the project revenue towards these initiatives with a target of up to 1.5 %. According to Eberhard and Naude (2015), R9.3 billion was pledged to socio-economic developments in Bidding Round 4.

Taking the above into consideration, socio-economic initiatives with focus on improving healthcare, infrastructure, and education within the project area of the Ezelsjacht WEF Project will derive positive economic benefits from the implementation of the project through this criterion that IPPs are required to meet under the REIPPPP.

4.2.5 Renewable Energy Development Zones and Strategic Transmission Corridors

In 2015, the then Department of Environmental Affairs through the Council for Scientific and Industrial Research (CSIR) embarked on a programme of Strategic Environmental Assessments (SEAs) for large-scale developments to support Strategic Integrated Projects. The intention of the SEAs was to pre-assess environmental sensitivities within development areas at a regional scale to simplify site-specific EIAs when they are undertaken and to focus the assessment to addressing the specific sensitivities of the site. The outcome of the programme led to the identification of eight Renewable Energy Development Zones (REDZ) and Power Corridors meant for the development of large-scale wind and solar renewable energy facilities in terms of *Strategic Integrated Project 8: Green Energy in Support of the South African Economy*, as well as the associated grid connection corridors for the development of grid connection infrastructure in terms of *Strategic Integrated Project 10: Electricity Transmission and Distribution*. Following the undertaking of further SEAs by the CSIR, DFFE through GN R144 (published on 26 February 2021) identified additional REDZs for the development of large-scale wind and solar renewable energy facilities in the Mpumalanga, North West, and Western Cape Provinces. The additional REDZs identified include the Emalahleni REDZ (REDZ 9), Klerksdorp REDZ (REDZ 10) and Beaufort West REDZ (REDZ 11). Furthermore, DFFE issued GN R383 (published on 29 April 2021) which identifies two additional power corridors in the Northern Cape and KwaZulu-Natal Provinces for the development of large-scale grid connection infrastructure. The identified power corridors include the Expanded Western Corridor and Expanded Eastern Corridor. Although the project site for the Ezelsjacht WEF is located outside of the REDZs (Figure 4-2) the project will nevertheless contribute towards the need for the generation of electricity from renewable energy sources as highlighted by national policy and planning guidelines. As the project site does not fall within a REDZ, the project does

not satisfy Regulation 3 of GN R114 of 2018. As a result, the Application for EA for the proposed project requires the undertaking of a Scoping and EIA process in accordance with Regulation 21 – 24 of the EIA Regulations 2014 (as amended), and the application will be considered within a period of 107 days from the day of receipt of the final EIA Report by DFFE.

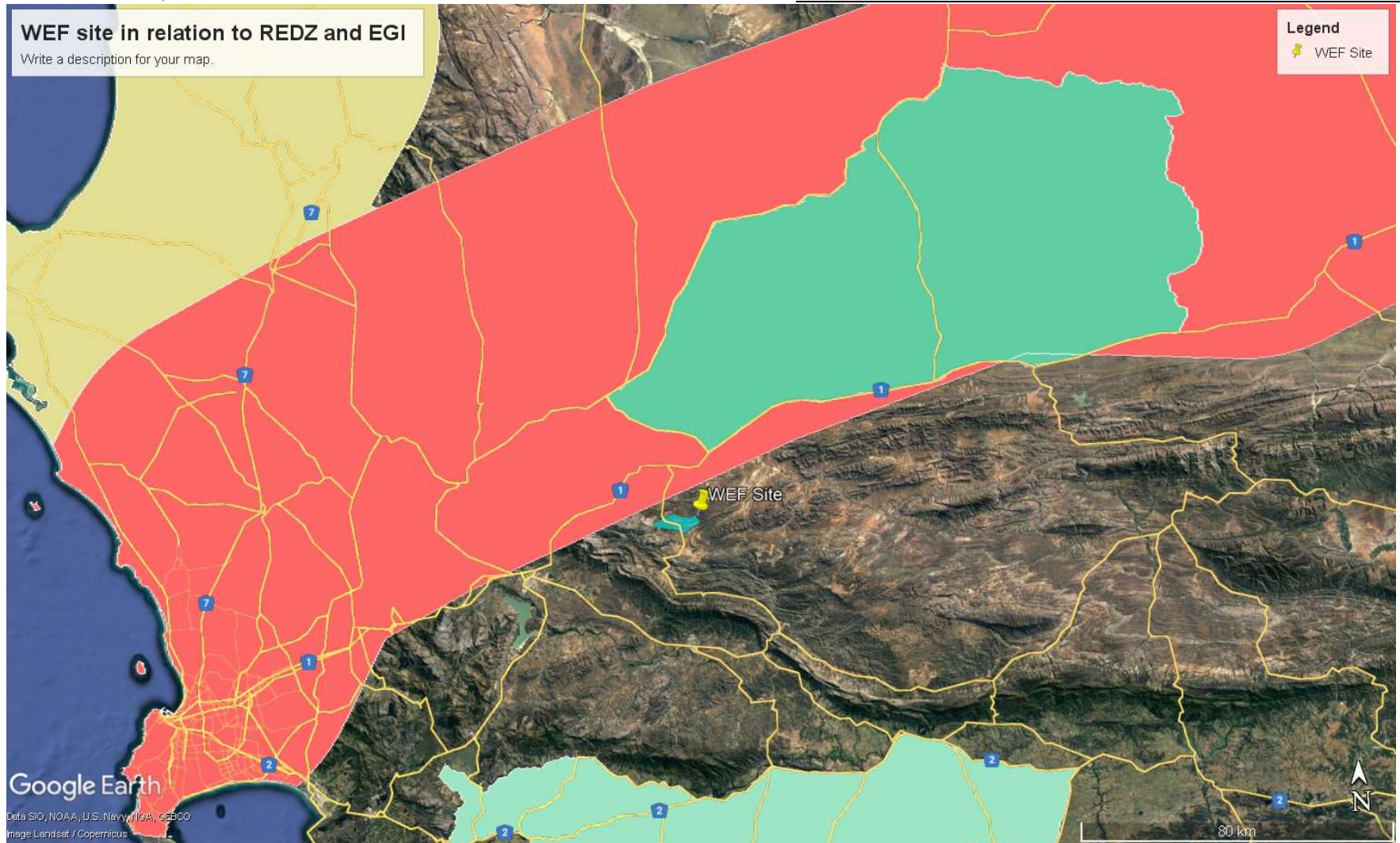


Figure 4-2: Location of the WEF within the context of the REDZ and Strategic Transmission Corridors.

4.2.6 National Climate Change Response Strategy

The need for a National Climate Change Response Strategy was recognised as an urgent requirement by government during the ratification process of the UNFCCC in 1997. The document notes that climate change is a *'cross cutting issue that affects the entire economy as well as many specific sectors including energy, transport, agriculture, water resources management and provision of water services and health'*. The aim of the strategy is to promote and maximise the integration of the government department programmes whilst minimising negative impacts associated with climate change.

Taking into consideration that South Africa is the largest emitter of greenhouse gas emissions on the continent and 14th worldwide, and the fact that the majority of these emissions are from electricity generation through the combustion of fossil fuels, the proposed Ezelsjacht WEF Project will positively contribute towards the reduction in greenhouse gas emissions - a key objective of the National Climate Change Response Strategy.

4.3 REGIONAL AND LOCAL POLICY AND PLANNING FRAMEWORK

Socio-economic development imperatives are meant to inform spatial planning. Spatial Development Frameworks (SDFs) in particular are central to socio-economic development planning and are drawn up in order to guide overall development in a direction that local and provincial authorities see as desirable. Indeed, the basic purpose of an SDF is to specify the spatial implications of Integrated Development Plans (IDPs), land use planning guidelines and socio-economic development strategies designed to optimise economic opportunities.

It is therefore important to consider whether spatial planning may impose any constraints on the project components and whether it offers guidance in the early screening of project alternatives. National renewable energy and grid infrastructure development planning processes also have potential relevance given their focus on maximising positive and minimising negative socio-economic impacts. With this mind, the following provincial, regional and national planning documents were found to be of relevance and were consequently reviewed:

- Western Cape SDF 2014
- Western Cape Land Use Planning Guidelines: Rural Areas 2019
- Cape Winelands District Municipality IDP 2021-2022
- Cape Winelands District Municipality Draft SDF 2021-2025
- Breede Valley Local Municipality IDP 2022-2027
- Breede Valley Local Municipality SDF 2018/19
- Langeberg Local Municipality IDP 2021-2022
- Langeberg Local Municipality SDF 2015
- The DEA Strategic Environmental Assessment (SEA) for the roll-out of large-scale wind and solar development which identifies Renewable Energy Development Zones (REDZs).
- The DEA National Electricity Grid Infrastructure Strategic Environmental Assessment (SEA) which identifies Transmission Corridors.

A summary of provincial and local planning policies in the Western Cape Province aligned to the proposed project as well the suitability of the project site for the development of the Ezelsjacht WEF are described

below. The proposed construction and operation of the proposed WEF is considered to be in alignment with the objectives of the policies, even though the contributions to the objectives from the proposed project can be negligible.

4.3.1 The Western Cape Climate Change Municipal Support Programme (2012)

The effective implementation of the National Climate Change Response White Paper (NCCRWP) and the Disaster Management Amendment Act (Act No. 16 of 2015) (DMAA) is dependent on the efforts of provincial and local governments. In fulfilment of this, the Western Cape Government reviewed and revised its original Climate Change Response Strategy (2008) in 2014 to be in line with the NCCRWP. As part of this, and as the result of an expressed need from municipalities in the Western Cape for support on climate change, the Climate Change Municipal Support Programme was initiated in 2012 to support municipalities with the development of Climate Change Response Plans / Frameworks. Initially there was a call for interest to all municipalities, and the Western Cape Provincial Government worked with the municipalities who answered the call in developing first generation Sustainable Energy Plans (in 4 municipalities) and Adaptation Plans (2 local municipalities and 1 district municipality). In 2013/14, the approach was modified to focus on developing high level responses at a District level, to subsequently then be rolled out to the local level. The approach has also shifted to an integrated climate change response (combining mitigation and adaptation), which is now international best practice particularly at the local level. West Coast District was the first to follow this integrated climate change response approach.

4.3.2 Western Cape Provincial Spatial Development Framework (SDF) (2014).

Western Cape Provincial Spatial Development Framework (SDF) (2014). In terms of the Western Cape Provincial Spatial Development Framework (WCSDF, 2014), Policy R4 (recycle and recover waste, deliver clean sources of energy to urban consumers, shift from private to public transport, and adapt to and mitigate against climate change) highlights the need support of IPPs, and sustainable energy producers to assist in a reducing the power shortage and mitigating against climate change. One (1) of many economic sectors targeted for growth is renewable energy. Further to this, regional economic infrastructure targeted by the Western Cape, includes the Development of the renewable sector (including associated grid connection infrastructure, such as this project). Western Cape's Green Economy Strategic Framework is centred on investment in new and expanding market opportunities that support a low carbon, resource efficient and socially inclusive economic pathway, revolving around (amongst others), expanding the renewable sector through off grid investments, Power Purchase Agreements (PPAs) and lobbying.

4.3.3 Breede Valley Local Municipality Integrated Development Plan (IDP), 2020 – 2021

The vision statement of the Breede Valley Local Municipality *IDP states, A unique and caring Valley of service excellence, opportunity and growth*'. The IDP on electricity and energy indicates that approximately 3 346 households have no access to electricity (StatsSA Community Survey 2016).

Given that at least 3 346 households do not have access to electricity within the municipal area of the Breede Valley Local Municipality, the addition of 140 MW_{ac} from the Ezelsjacht WEF Project will provide much needed capacity to the grid and aid the municipality in meeting some of its targets for the electrification of communities. Furthermore, indirect positive socio-economic benefits of the project, i.e., project expenditure within the surrounding area and employment opportunities for residents will negligibly contribute to the

Breede Valley Local Municipality's economy. As a result, the project is in alignment with the objectives of the district municipality

4.3.4 Cape Winelands District Municipality Integrated Development Plan (IDP), 2022 – 2023

The Cape Winelands Municipality IDP, 2022 – 2023 indicates that the municipality has a 13 % unemployment rate. The IDP further indicates that in most instances electricity in the rural areas is provided by ESKOM. Although the grid is comprehensive, it does not cover all areas. The construction and operation of the Ezelsjacht WEF Project with a generation capacity of up to 140 MW_{ac} will add much needed capacity to the grid and positively contribute towards the electrification of households without electricity within the municipal area. Although negligible, the employment opportunities associated with the construction and operation phases of the proposed project will contribute towards the stimulation of the local economy through the creation of employment and business opportunities for unemployment residents within the municipal area.

Taking into consideration the need for electricity within the municipality and the high unemployment rate, the implementation of the Ezelsjacht WEF Project will enable the municipality in realising some of its key objectives as outlined in the IDP. As a result, the project is considered to be in alignment with the IDP of the Cape Winelands District Municipality.

4.3.5 Site Suitability

The identification and selection of the site as a suitable area for the development of the Ezelsjacht WEF Project was determined based on the availability of resource and grid, high level environmental sensitivity features (to be confirmed during this S&EIA process), landowner willingness and other considerations. From a technical perspective, the project site identified for development is considered to be feasible for the development of the Ezelsjacht WEF with a total generating capacity of up to 140 MW_{ac}.

5. PROJECT DESCRIPTION

This chapter provides general project information and presents a description of the project considered by Mainstream.

5.1 GENERAL PROJECT INFORMATION

5.1.1 Applicant Details

Component	Description
Company Name	South Africa Mainstream Renewable Power Developments (Pty) Ltd
Address:	4 th Floor Mariendahl House Newlands on Main Corners Main & Campground Roads Claremont 7800
Responsible person:	Rebecca Thomas
Tel:	021 657 4045
Fax:	073 871 5781
E-mail:	rebecca.thomas@mainstreamrp.com

5.2 LOCATION OF THE PROPOSED PROJECT

The Ezelsjacht WEF Project site is located 13 km south-east of the town De Doorns within the Cape Winelands District Municipality of the Western Cape Province. The site proposed for the WEF component falls within the Breede Valley and Langeberg Local Municipalities. Access to the project site is provided via R318 .

5.3 SUMMARY OF PROPERTY AND TECHNICAL INFORMATION

Table 5-1 includes technical and project-specific details of the key infrastructure components and support services that will be required to support the operations of the WEF for a 20-year period.

Table 5-1: Detailed Project Information

Component	Ezelsjacht WEF
Property Information	
Farm name & portion number:	Portion 1 of Farm De Braak No. 7 Portion 6 of the Farm Ratelbosch No.149 Farm Zout Riviers No. 170 Remainder of Farm Ezelsjacht No. 171
Surveyor General 21-digit code:	C0500000000000700001 C08500000000014900006 C08500000000017000000 C08500000000017100000
Name of Landowner:	Graeme Falck
Development site	+/- 3,594 hectares
Centre coordinates of site:	33°31'41.39"S 19°52'4.52"E
Technical Details – Wind Turbines	
Turbines	Up to 35 wind turbines
Capacity	Combined generation capacity of up to 140 MW _{ac}
Turbine Hub height	Up to approximately 200m
Rotor diameter	Up to approximately 200m
Transformers	Electrical transformers (11/33kV) located adjacent to each wind turbine
Substation & Electrical Infrastructure	
IPP Substation capacity	33 / 132 kV IPP Substation
IPP Substation footprint	Approximately 120 m x 120 m in extent
Cabling	Underground and overhead powerlines (up to 33 kV)
Building	Substation Building
BESS Infrastructure	
BESS Capacity	Up to 500MWh
BESS footprint	Up to 5 ha
BESS technology	The type of technology would be determined during the EIA phase, but will most likely be either solid state or redox flow.
Buildings	<ul style="list-style-type: none"> Operational Control Centre Substation Building The BESS will be located within the 25ha Infrastructure Area that has been assessed and will cover an area of approx. 5 ha.

		<ul style="list-style-type: none"> A Battery Energy Storage System (BESS) will be located next to the IPP portion / yard of the shared onsite 33/132kV substation and will cover an area of 5 ha.
Building & Supporting Infrastructure		
Buildings		<ul style="list-style-type: none"> Operation and Maintenance Building Ablution Facilities Warehouse / Workshop / Control Centre and Office
Other		<ul style="list-style-type: none"> Access roads & internal roads of up to approximately 12m wide Fencing and Lighting Lightening protection infrastructure Telecommunication infrastructure 400 m³ reservoir, water pipeline and stormwater channels Permanent Laydown Area Temporary Construction Camp and Laydown Area
Support Services		
Water Demand	Construction	Water for Roads – approx. 40 000m ³ /annum Water for Civil Works – approx. 25 000m ³ /annum Water for Domestic Use – 10 000m ³
	Operation	Water for Domestic Use – approx. 1 000 m ³ /per annum Water for Dust Suppression – approx. 10 000 m ³ /per annum
Waste Generation	Construction	General Waste would be managed on site in accordance with the principles of the waste management hierarchy. Hazardous Waste may be generated on site depending on the design / type of panel procured. Hazardous waste will be disposed of at a registered facility. Effluent would be managed by means of conservancy tanks (16 000 L in capacity which are cleaned once a month and disposed of at the nearest municipal facility).
	Operation	Effluent would be managed using septic Tanks (16 000 L in capacity which are cleaned 2/3 times a week) or a Clarus Fusion System (16 000 L capacity which are cleaned once every six months), or similar, which utilises a chemical process to recycle water from the Operations and Maintenance Buildings as well as Sub-Station Buildings. This treated water can then be used to water vegetation.
Employment Opportunities		
Construction Phase		<ul style="list-style-type: none"> Approx. 200 people however the number of people employed at one time may vary as different contracts and subcontracts on the project are completed at a time onsite.
Operation Phase		<ul style="list-style-type: none"> Approx. 20 people and this is due to the fact that the staff will mainly be responsible for the daily operations and maintenance activities of the project.
Recruitment for the duration of the project lifecycle will be undertaken in collaboration with local authorities, community leadership structures and agencies and no labourers will be hired onsite. Mainstream will therefore implement mitigation and management measures to ensure that no employee or job applicant is discriminated against on the basis of race, gender, nationality, age, religion, or sexual orientation.		

5.4 KEY PROJECT COMPONENTS

5.4.1 Wind Turbine

A wind turbine is a rotary device that extracts energy from the wind. The mechanical energy generated is converted to electricity. Wind turbines can rotate either on a horizontal or vertical axis. Larger capacity turbines used in large scale Wind Farms for the commercial production of electricity are typically horizontal axis wind turbines (HAWT), which are three-bladed and mechanically pointed into the wind by computer-controlled motors, as is proposed for this project. These have high blade tip speeds of up to about 325 km/hour, high efficiency, and low torque ripple, which contribute to good reliability. Figure 5-2 illustrates the external and internal components that make up a typical wind turbine and also key aspects associated with the turbine erection process.

Since the turbine technology is continually evolving it is not possible for the developer, at this early stage in the proposed project process, to specify the exact turbine model and specification (or even what would be available in the marketplace). Assumptions have been made as to the maximum possible area of impact by the potential turbine blades based on a range of turbine sizes. This area of impact is referred to as the “rotor swept area envelope”, as it 1) takes into account multiple turbine size scenarios at once, and 2) assumes each turbine has the largest blade it can from the lowest hub height and extends this all the way up to the highest hub height. This reflects an worst-case area of impact that is not likely to be realised in the final turbine model scenario.

Above sets out these specifications which are visually depicted in Figure 5-1 below.

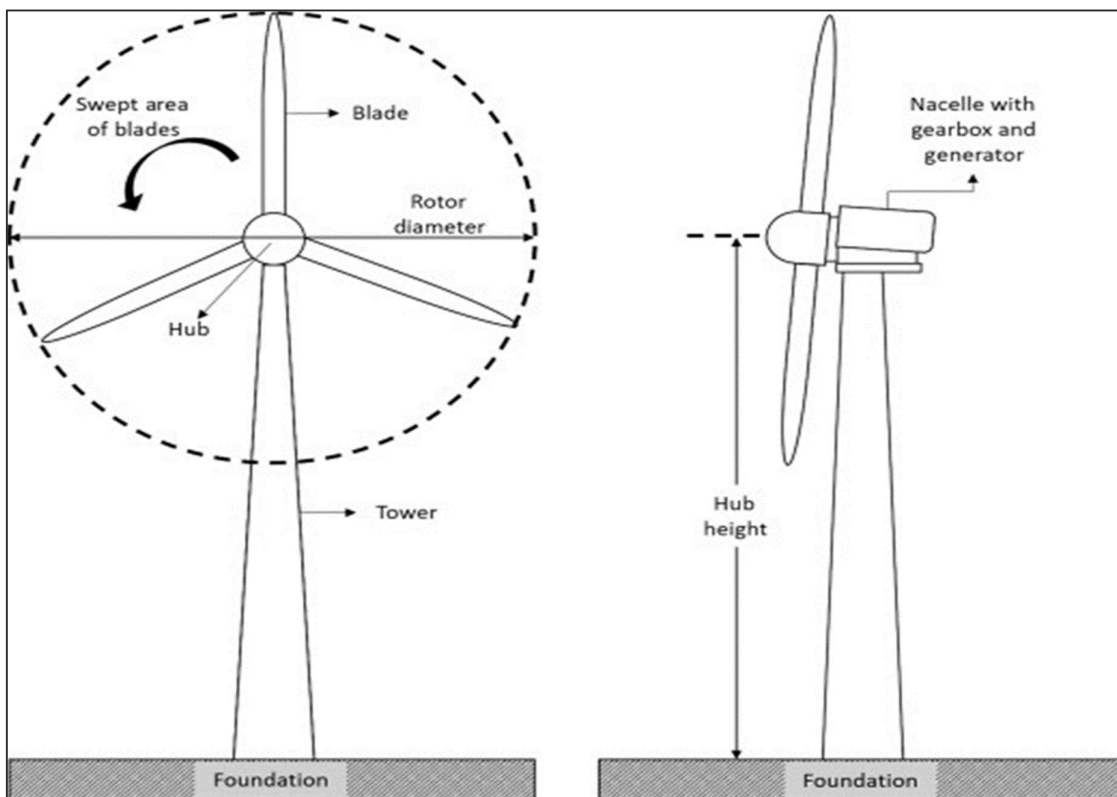


Figure 5-1: Rotor swept area envelope

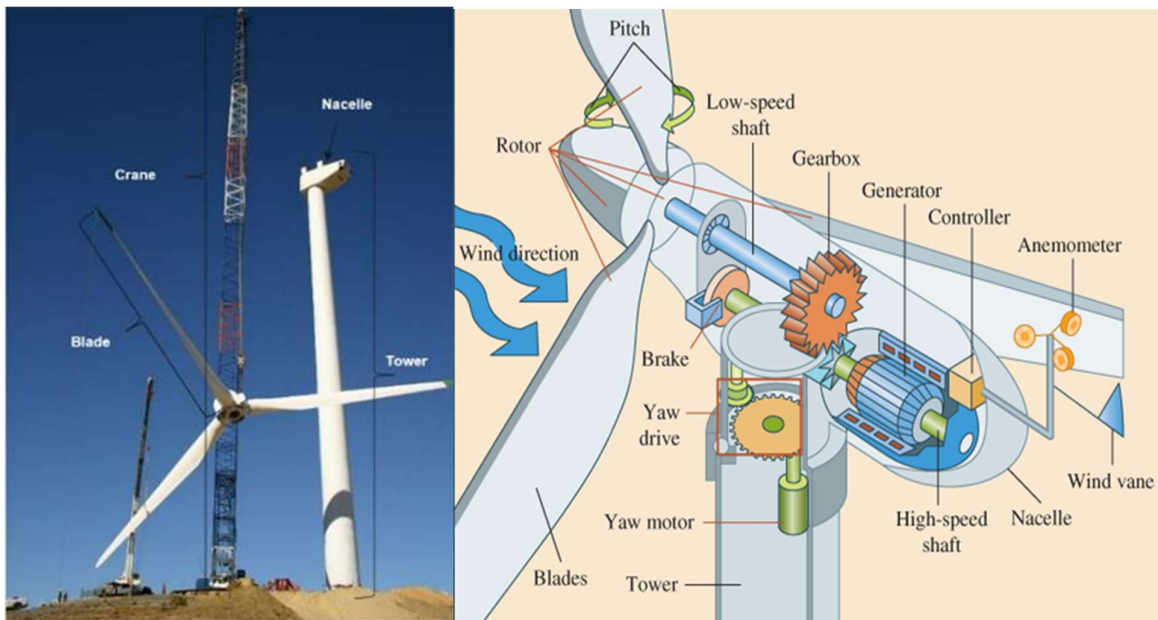


Figure 5-2: External (left) and internal⁹ (right) components of a typical wind turbine

5.4.2 Nacelle

Larger wind turbines are actively controlled to face the oncoming wind direction, which is measured by a wind vane situated on the back of the nacelle. By reducing the misalignment between wind and turbine pointing direction (yaw angle), the power output can be maximised, and non-symmetrical loads minimised. The nacelle turns the turbine to face into the wind ('yaw control'). The nacelle also contains the generator, control equipment, gearbox and wind speed instrument (anemometer) to monitor the wind speed and direction.

The turbine controls the angle of the blades ('pitch control') to make optimal use of the available wind and avoid damage at high wind speeds. By turning the blades sideways into the wind, i.e., away from the direction of the wind ('furling'), the turbine ceases its rotation, accompanied by both electromagnetic and mechanical brakes. This would typically occur at very high wind speeds, typically over 72 km/h (20 m/s), depending on the characteristics of the specific turbine. The wind speed at which shut down occurs is called the cut-out speed. The cut-out speed is a safety feature which protects the wind turbine from damage. Normal wind turbine operation usually resumes when the wind drops back to a safe level. Refer to Figure 5-2 above illustrating the typical components of the nacelle.

5.4.3 Substation

The IPP portion of the on-site 33 / 132 kV substation comprises an transformer (step-up facility) and an inverter which converts power from Direct Current (DC) to Alternating Current and will step up electrical current from 33 kV to 132 kV. The substation will consist of at least one small building, outdoor electrical plant, equipment, and transformers. An Eskom Switching Station will be constructed adjacent to the IPP Substation. The Switching Station will be assessed separately in a BA process of the grid connection infrastructure associated with the solar PV facility. The 132kV switching portion (assessed in the BA

⁹ <http://9.dragonpark-bonn.de/this-diagram-describe-the-wind-turbine-parts.html>

application) will be ceded to Eskom once the shared onsite substation is constructed and the necessary transfer of rights undertaken). The 132kV switching station will be located adjacent to the 33/132kV transformer in the Infrastructure Area (25 hectares).

5.4.4 Battery Energy Storage System

The Battery Energy Storage System (BESS) allows for the storage of surplus energy generated by the wind energy facility for later use. The BESS enables a balance between supply and demand of electricity during the day and uses the stored energy during peak demand periods, i.e., morning and evenings. Energy generated from is DC and converted to AC by the inverters and then transferred to the on-site substation where it is determined if the energy should be stored or evacuated. When the energy is required, it is evacuated into the grid network, and when it is not required, it is transferred to the BESS and stored for later use (Figure 5-3). A BESS consists of stacked up containers, or a multi-story building with a maximum height of 8 m and will have a footprint of up to 1 ha (Figure 5-4).

Several battery technologies are being considered for utilisation for the proposed project. These include solid state and flow type batteries. Solid State batteries consist of one or more electrochemical cells that convert chemical energy into electrical energy. Each cell consists of an anode and cathode. Electrolytes within the cells allow ions to move between the electrodes and terminals, which enables the flow of current out of the battery. Examples of solid-state batteries include Lithium-ion and Sodium Sulphur batteries. Flow batteries are rechargeable and the rechargeability function is enabled by the dissolution of chemical components in liquids contained within the system that are separated by a membrane. The advantage associated with flow batteries is that they are easily rechargeable through the replacement of the electrolyte fluid. Typical examples of flow batteries include Vanadium Redox (VRB) flow batteries. The final BESS technology for utilisation for the proposed project will be selected during the detailed design of the wind energy facility post the issuance of the Environmental Authorisation, and when the project has been granted preferred bidder status under the DMRE's REIPPPP and a supplier of the batteries has been appointed. This Scoping Report and the EIA Report will consider and assess solid state and redox flow BESS technology options.



Figure 5-3: A process diagram illustrating the usage of a BESS in the electric grid.

Source: <https://www.cleanenergyreviews.info/blog/ac-coupling-vs-dc-coupling-solar-battery-storage>

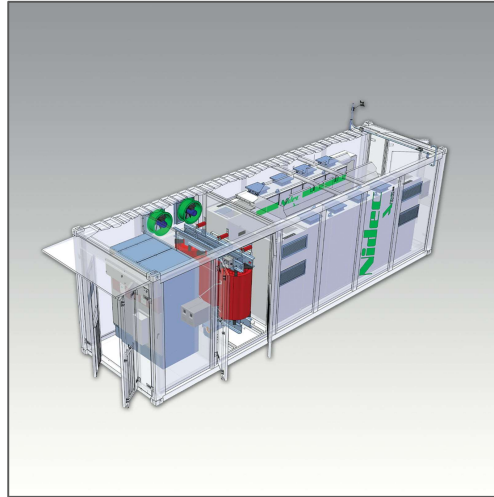


Figure 5-4: A BESS container

Source: <https://www.nidec-industrial.com/markets/battery-energy-storage-solutions>

5.4.5 Operations and Maintenance Buildings

Additional infrastructure is required in order to support the operations of a wind energy facility, and to provide services to personnel tasked with the operations and maintenance of a facility. Operations & Maintenance Buildings (O&M) typically include Offices, Operational and Control Centre, Workshop, Warehouse, and Ablution Facilities.

5.4.6 Roads

Entrance to the site as already mentioned will be via R318. A main access road will be constructed for the provision of access from the existing road network to the project site. Within the project site, internal roads will be constructed to provide access to the wind turbines and other components of the WEF.

5.5 SUPPORT SERVICES

The proposed project will require support services and infrastructure for the duration of the project. Support services and infrastructure required will include water, waste and sewage removal, water, and electricity.

5.5.1 Water Demand

During the construction phase of the proposed project, water will be either from a registered service provider, existing boreholes within the project site or through surface water abstraction. The anticipated water usage for the project for the duration of the 24-month construction phase is included in Table 5-1 above. The water would be required for the following uses:

- Drinking;
- Ablution facilities;
- Access Road construction;
- Dust suppression
- Fire-fighting reserve
- Cleaning of facilities; and
- Construction of foundations for turbines and substation.

During the operation phase, water will be supplied either by a registered service provider, boreholes within the project site or through abstraction. The anticipated quantities required are listed in Table 5-1 above and would be necessary for domestic use, and dust suppression.

5.5.2 Wastewater and Waste Removal

Wastewater: Effluent will be generated during the construction and operation phase of the project. A Service Level Agreement will be reached with a registered service provider for the collection of sewage from the project site using a honey sucker truck and be disposed of at the near Wastewater Treatment Works (WWTWs) during the 24-month construction phase. A new clarifusion system will be deployed during the construction phase of the proposed project which will utilise a chemical process to recycle water from the Operations and Maintenance Buildings. The recycled water will be used for domestic applications within the project site, i.e., watering vegetation, etc.

Solid Waste: There will be solid waste generated for the duration of the proposed project and will comprise of hazardous and non-hazardous waste components. During the construction and operation phase of the proposed project, non-hazardous solid waste components will comprise spoil from construction-related activities, general domestic waste (i.e., wooden pallets, cardboards, etc.) and concrete.

Hazardous materials used on site during operations will include fuels, oils, lubricants, cleaning products, and specialised gases (for use in switchgear etc.). Minimal waste is expected to be generated during the operation phase. For certain types of transformers or backup generators, oil that needs to be replaced will be recycled, if possible, or safely stored and removed from the site and correctly disposed of.

All solid wastes generated (hazardous and non-hazardous) will be disposed of at a licensed landfill site by means of contracting a suitably registered waste handling company. This will be the responsibility of the Engineering Procurement Construction (EPC) Contractor during construction phase of the proposed project and will have overall oversight to verify that the collection, transport, handling, and disposal of these wastes is being undertaken in a suitable manner.

Waste during the decommissioning phase will be similar to that produced during the construction phase; this includes wooden and plastic packaging, cable off cuts, disused wind turbines, office, and domestic waste. All solid wastes generated will be disposed of at appropriately licenced landfill sites for general, and/or hazardous waste streams.

In addition, Mainstream will have to ensure that any waste due to breakdowns and maintenance of the BESS is collected by the battery supplier or a licensed service provider and disposed in the appropriate manner in accordance with environmental legislation and best practice guidelines.

5.5.3 Air and noise emissions

Air emissions: Temporary air emissions will occur during the construction phase due to the use of construction machinery and the clearing of vegetation which may result in wind-blown dust and fugitive dust emissions. Little to no emissions are anticipated during the operation phase through management of on-site vehicle speed and vegetation and soil landscaping.

Noise emissions: The key temporary noise sources during the construction phase will be from the mobile machinery, vehicles, workers, and plant construction activities including high speed ramming using percussion hammers. Some construction activities may be required afterhours.

5.5.4 Traffic

There will be some traffic during the construction phase of the proposed project for the delivery of project components, machinery, and labour. The transportation route has not yet been finalised.

Transport routes for the proposed project will be finalised once all suppliers are finalised after undergoing a procurement period. Traffic volumes are anticipated to diminish during the construction phase of the proposed project, and only a limited number of vehicles will travel to and from the project site for operation and maintenance purposes. Where appropriate, mitigation and management measures for the control and management of traffic-related impacts will be included in the EMP for the proposed project.

5.5.5 Employment opportunities

Refer to Table 5-1.

5.5.6 Schedule and Life of Project

It is anticipated that a Power Purchase Agreement (PPA) will be signed for a period of up to 20 years. Beyond this duration, the proposed project may continue to operate subject to further approvals or be decommissioned.

5.6 MAIN ACTIVITIES

The proposed project will be carried out in the following phases:

- Development / Planning phase;
- Site preparation;
- Construction phase;
- Operational phase; and
- Decommissioning phase.

Activities to be undertaken during each of the phases are described in the following sections of this report.

5.6.1 Development and Planning Phase

During the development and planning phase of the proposed project, Mainstream will assess the key parameters required for the construction and operation of the Wind Energy Facility. This will include:

- Enviro-legal and other permitting;
- A detailed layout of the proposed project;
- Eskom grid connection requirements; and
- Detailed geotechnical investigations of the project site.

During the development and planning phase of the proposed project, the project will be adapted in order to meet regulatory requirements, time schedules and expectations of all relevant parties.

5.6.2 Site Preparation Phase

Should the proposed project be granted a positive decision by DFFE and selected as a preferred bidder in a renewable energy procurement programme or conclude a private offtake agreement and Financial Close be achieved, site preparation activities will commence. Thereafter the project site will be marked out, a construction camp set up and the access road to the site be constructed. This phase would include the clearance of vegetation, installation of perimeter fencing and levelling of the site and preliminary earthworks.

The clearance of vegetation will not be a site wide activity and will depend on the final turbine layout and designs of supporting infrastructure.

5.6.3 Construction Phase

Construction of the proposed project will be initiated following the completion of the site preparation activities. The construction phase will include the following:

- Establishment of a site camp for the temporary storage of construction equipment and machinery;
- Clearance of selected areas within the project footprint for the placement of pylon foundations and clearance of the WEF infrastructure footprints;
- Excavation of pylon and anchor / stay and busbar foundations;
- Foundation steelwork (reinforcing)
- Concrete pouring within all foundations;
- Assembly of pylon tower sections on-site;
- Erection of pylon tower sections using a 50-ton crane to pick up pylon towers from the ground for final assembly;
- Stringing of the powerline cables;
- Sag and tension of the powerline to ensure minimum clearance heights are achieved;
- Rehabilitation of disturbed areas;
- Testing and commissioning of WEF and grid connection infrastructure; and
- Removal of equipment and disassembly of site camp.

Where possible, materials, plant and equipment will be locally sourced within the region. As far as practically possible bulk of the specialist equipment (i.e., distribution transformers, busbars, circuit breakers, lightening arrestors and air break switches / isolators, etc.) will be sourced locally in South Africa, alternatively it would have to be imported (should no supply be available in South Africa).

5.6.4 Operations Phase

The proposed WEF and associated infrastructure will be operated on a 24 hour, 7 days a week. The operation of the proposed project will comprise the following activities:

1. Maintenance of the WEF infrastructure; and
2. Bush clearing within the powerline servitudes for safety purposes in line with Eskom and IEC standards.

5.6.5 Decommissioning Phase

The WEF (including associated infrastructure) is expected to operate for at least 20 years. If decommissioned, all components will be removed, and the site rehabilitated. Where possible, all materials will be recycled, otherwise they will be disposed of in accordance with local regulations and international best practice.

5.7 ALTERNATIVES

The EIA Regulations 2014 (as amended) through Regulation (2)(g)(iv) of Appendix 2 ('Scoping Report') require that alternatives be considered during the Scoping phase of a project. Chapter 1 of the EIA Regulations 2014 (as amended) defines 'alternatives' as a 'different means of meeting the general purpose and requirements of the activity', and alternatives may include:

- the property on which or location where it is proposed to undertake the activity;

- the type of activity to be undertaken;
- the design or layout of the activity;
- the technology to be used in the activity; and
- the option of not implementing the activity.

The alternatives considered in relation to the Ezelsjacht WEF are discussed in detail in the following sections.

5.7.1 The property on which or location where it is proposed to undertake the activity

In general, the site selection process of a site for the development of a wind energy facility is dependent on several aspects of which are favourable at the identified project site for the construction and operation of the Ezelsjacht WEF. These aspects include the, topography, extent of the area available for development, proximity of the site to the nearest grid connection point and access to the site. Taking the detail included in Section 4.3.5 into consideration, the project location is considered suitable for the placement of the Ezelsjacht WEF, and no other locations are being assessed or considered for the placement of the project.

5.7.2 The type of activity being undertaken

The development of the Ezelsjacht WEF is proposed in order to add up to 140 MW_{ac} of electricity generated from a renewable energy facility into the grid. Therefore, no other activity alternatives have been considered for the project.

5.7.3 The design or layout of the activity

Mainstream have appointed specialists to undertake field-based surveys of the project site to determine the suitability of the site from an environmental perspective for the placement of the Ezelsjacht WEF in the area. Areas with sensitive environmental features within the project site will be delineated by the specialists, and will inform the layout considered for the Ezelsjacht WEF Project. This layout will be assessed in detail during the Impact Assessment Phase of the project, taking into consideration the identified sensitive environmental features present within the project site.

5.7.4 Technology Alternatives

As the development of the wind energy facility is the subject of this EIA, other renewable energy technologies have not been assessed within this report. However, through the project development process, Mainstream will continue to consider various wind turbine designs to gain maximum efficiency of the site.

Other technologies such as BESS, will be assessed in the Impact Assessment Phase of the project, the option of either using Solid State or Redox Flow BESS for the Ezelsjacht WEF Project. Solid State BESS, i.e., Lithium ion are efficient for mobile and high-power applications such as mobile phones and laptops, whilst Redox Flow options are suitable for providing power to large utility applications and have a longer lifespan before they require replacement. The Impact Assessment Phase of the project will assess the selection of each technology option as a preferred option from a technical perspective.

5.7.5 The option of not implementing the activity 'NO-GO' Alternative

The 'No-Go' alternative is the option of not constructing the WEF and associated infrastructure and where the *status quo* of the current status and/or activities on the project site would prevail. This alternative would result in no additional impact on the receiving environment.

Should the 'No-Go' alternative be considered, there would be no impact on the existing environmental baseline and no benefits to the local economy and affected communities. The alternative bears the opportunity cost of missed socio-economic benefits to the local community that would otherwise realise from establishing the farms / properties which form part of the project site. The option of not developing also entails that the bid to provide renewable / clean energy to the national grid and contribute to meeting the country's energy demands will be forfeited.

6. DESCRIPTION OF THE BASELINE ENVIRONMENT

6.1 BIOPHYSICAL ENVIRONMENT

6.1.1 Climate

The study area has a Mediterranean climate seasonality, experiencing warm, dry summers and mildly cold, wet winters. The mean temperatures range 33°C (January) to 5°C (July). The mean annual precipitation is 267 mm. during the late autumn/winter months. According to Ekovler, 2022 *“January is the driest month, with an average of 22 mm of rainfall. June, with an average of 50 mm rainfall, is the peak rainfall month”*.

The highest maximum recorded temperature is 28.2°C, and the lowest minimum temperature is 4.1°C. The hottest months of the year are January and February, while the coldest month of the year is July (Climate-Data.Org, 2022).

6.1.2 Geology

The geology of the combined renewable energy facility project area is shown on the 1: 250 000 scale geology sheet 3319 Worcester (Council for Geoscience, Pretoria; Gresse & Theron 1992) (Figure 2). The area is underlain by several coastal to shallow marine formations of the Table Mountain and Bokkeveld Groups (Cape Supergroup) of Early to Middle Devonian age (c. 410 – 390 Ma) (Thamm & Johnson 2006). The sandstone-dominated units (Rietvlei, Gamka and Hexrivier Formations) tend to build rocky ridges and scarps while the intervening mudrock-dominated subunits (Gydo, Voorstehoek and Tra Tra Formations) underlie subdued, low-lying terrain and are generally poorly exposed at surface. The geology of these Devonian sedimentary bedrocks is outlined by Gresse and Theron (1992) and Penn-Clarke et al. (2018a) as well as several previous palaeontological impact assessments in the wider De Doorns – Touwsrivier – Montagu region (e.g. Almond 2011, 2015 and references therein). In this sector of the Cape Fold Belt – known as the Cape Syntaxis (De Beer 1992) – the Cape Supergroup bedrocks show a complex pattern of folding, often associated with a pervasive tectonic cleavage (especially within fine-grained facies), and are dissected by numerous faults, as is clear from the geological map (Figure 6-1).

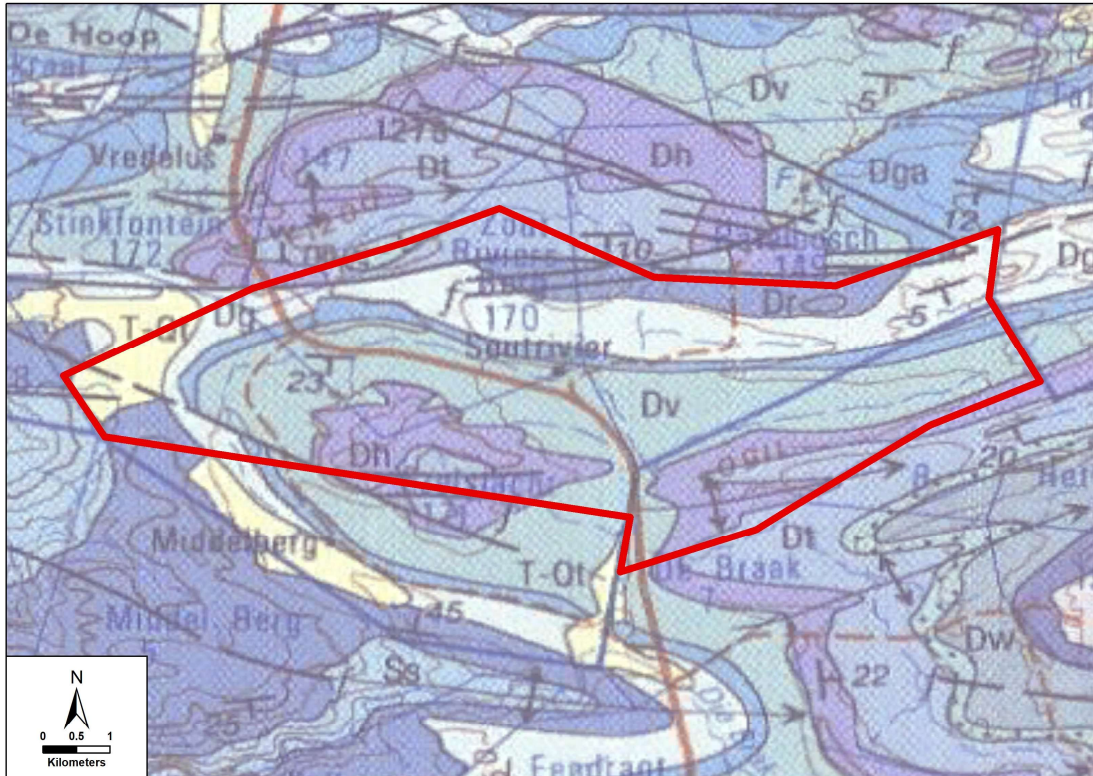


Figure 6-1: Extract from 1: 250 000 geology sheet 3319 Worcester (Council for Geoscience, Pretoria) showing the location of the WEF project area between De Doorns and Touwsrivier, Western Cape Province. The area is underlain by several coastal to shallow marine formations of the Table Mountain and Bokkeveld Groups (Cape Supergroup) of Early to Middle Devonian age (c. 410 – 390 Ma) (Map supplied by SLR).

KEY TO MAIN GEOLOGICAL UNITS:

Ceres Subgroup (= Lower Bokkeveld Group)

Dga (blue) = Gamka Formation (mainly sandstones / wackes)

Dv (blue-green) = Voorstehoek Formation (mudrock-dominated)

Dh (purple) = Hexrivier Formation (mainly sandstones / wackes)

Dt (blue) = Tra Tra Formation (mainly mudrocks with minor sandstones)

T-Qt (pale yellow) = Tertiary / Quaternary colluvium (scree gravels, sands).

N.B. Extensive cover of the Palaeozoic bedrocks by thin colluvial (slope) deposits and rocky soils is not depicted on the map.

6.1.3 Topography

The site proposed for the Ezelsjacht WEF development lies to the north of the Langeberg Mountain Range at an average altitude of approximately 1200 above mean sea level (amsl). The area is largely characterised by rolling hills and undulating plains. Areas of greater relief occur in the west and south-east of the study area where the Kwadousberg and Waboomberg Mountain Ranges extend into the study area, and also to the south where the Koo River valley forms a distinctive feature in the landscape. These areas are characterised by incised valleys with steep slopes.

Maps showing the topography and slopes within and in the immediate vicinity of the WEF area are provided in Figure 6-2 and Figure 6-3.

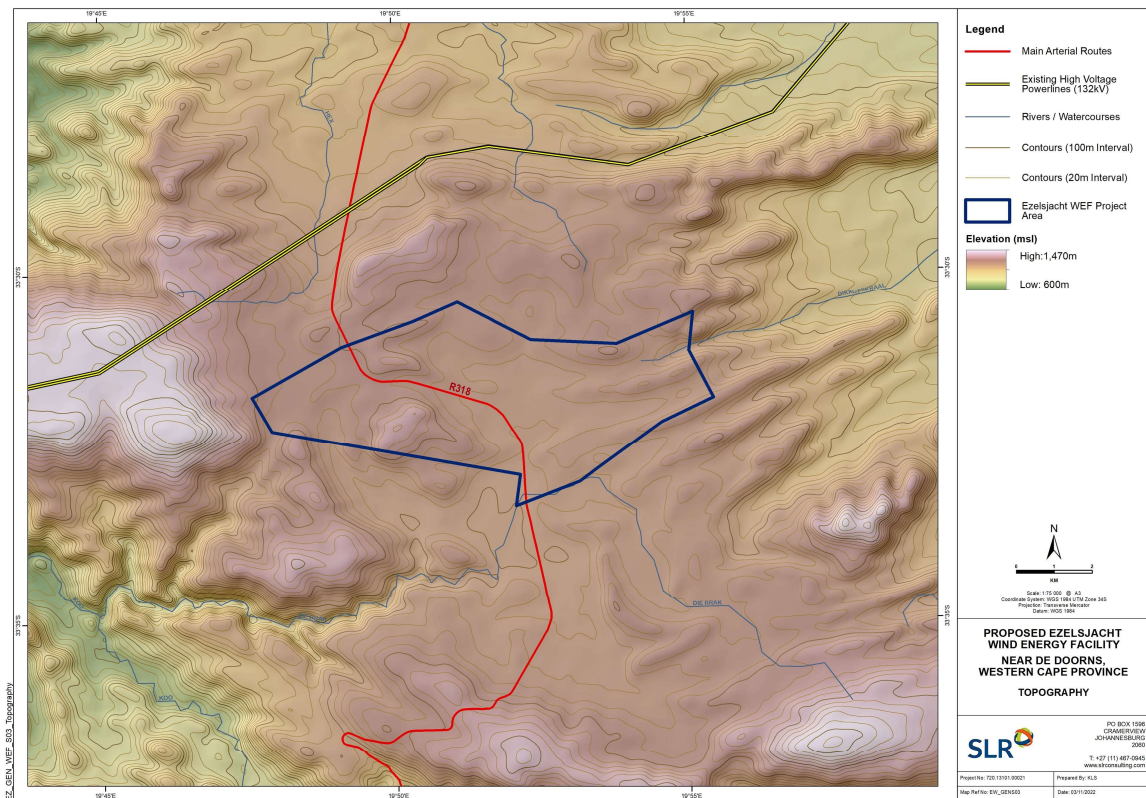


Figure 6-2: Topography of the study area

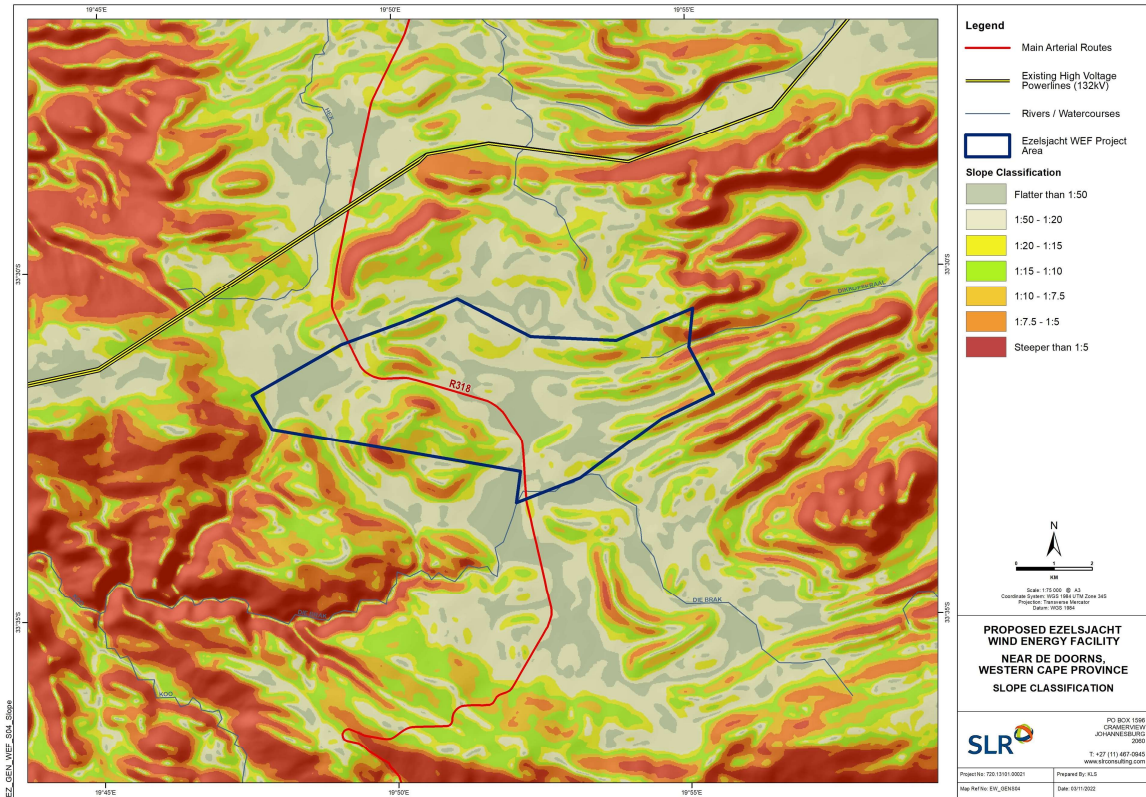


Figure 6-3: Slope classification within the study area.

6.1.4 Agriculture

An agricultural site sensitivity verification was undertaken by Johann Lanz (October 2022). According to the report, the site has low agricultural potential.

Agricultural land use on the wind site is predominantly grazing with relatively small areas of cultivation. The grazing capacity of the site is very low at 72 hectares per large stock unit.

6.1.5 Vegetation

The proposed study area falls within the Fynbos Biome, with two main vegetation types represented on site: Fynbos and Renosterveld, namely Matjiesfontein Quartzite Fynbos and Matjiesfontein Shale Renosterveld as portrayed in Figure 6-4 (SANBI, 2007). Fynbos, which has a high species diversity, typically grows in soil that is nutrient-poor. Renosterveld, in contrast, grows in more fertile soil and is able to support a higher fauna diversity. One of the characteristics of Fynbos is that it is flammable and it needs recurring fire for regeneration (UWC, 2022).

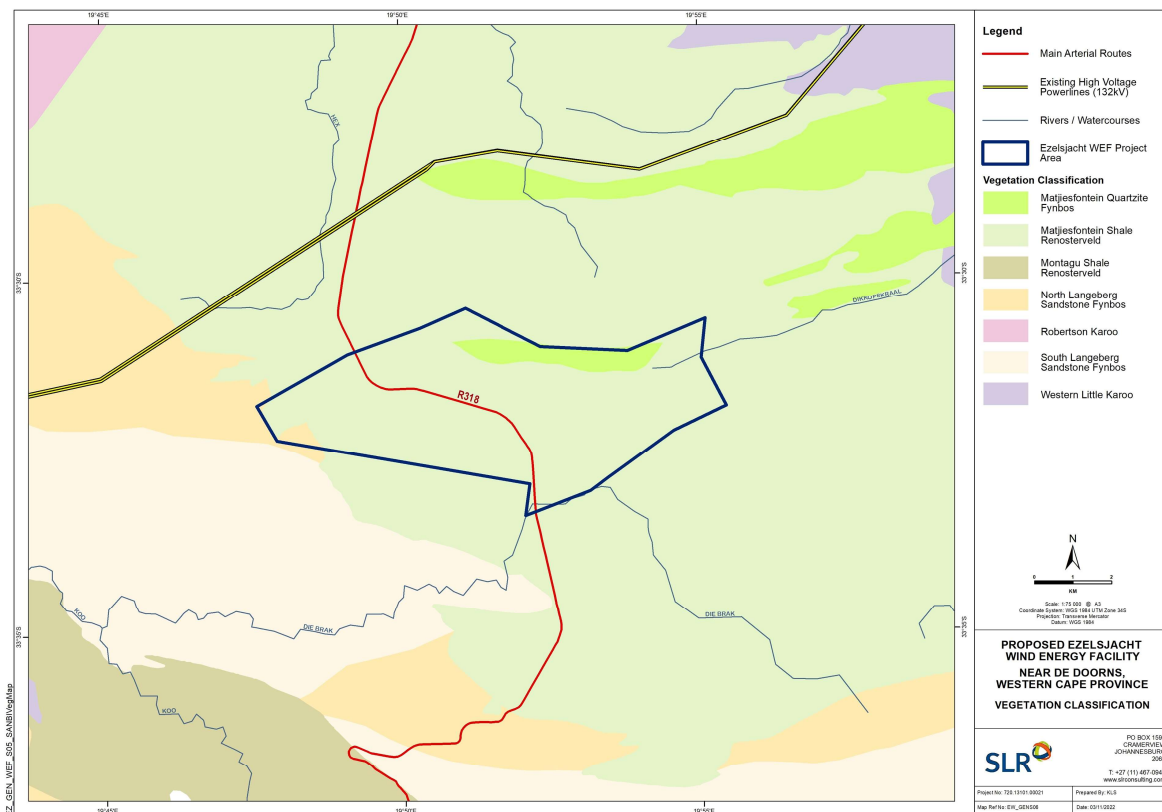


Figure 6-4: Vegetation Map

6.1.6 Fauna

According to 3foxes Biodiversity Solutions, 2022 “the site is confirmed High sensitivity for the Riverine Rabbit and the Grey Rhebok and Medium sensitivity for the Caledon Copper. *Aloeides caledoni*, the Caledon Copper is associated with summits and slopes of rocky mountains from Caledon in the east to Nieu-Bethesda

in the west. Although this species is classified as rare its' conservation status is Least Concern. Given the habitat associated with this species, it is highly unlikely that this species is present within the SEF site. Apart from the above two species, the only other fauna that is likely present within the site is the Grey Rhebok which is confirmed present and appears to be relatively common on the site (**Error! Reference source not found.**). Based on the results of the site verification, the site is confirmed High sensitivity for the Riverine Rabbit and the Grey Rhebok and low sensitivity for the Caledon Copper.



Figure 6-5: Grey Rhebok confirmed to be located on SEF site.

According to Dave Edge and Associates, 2022 *Aloeides caledoni* is a rare low density endemic confined to higher altitudes such as ridges and mountain tops. Known to occur at Touws River, Matjiesfontein and Beaufort West at altitudes in excess of 1000 m. Recorded in vegetation types FFq3 Matjiesfontein Quartzite Fynbos, FFs12 Overberg Sandstone Fynbos, FFs23 North Swartberg Sandstone Fynbos, FRs6 Matjiesfontein Shale Renosterveld and Gh1 Karoo Escarpment Grassland (Mucina & Rutherford 2006). Host plant is unknown. Flight period is from October to mid-November. Probability of occurrence at site of the WEF is approximately 5%. After a site visit, the only butterfly species recorded that might be of any concern at the proposed Ezelsjacht WEF is a possible new taxon of *Lepidochrysops near dukei*. The species occurs across all the areas surveyed.

6.1.7 Avifauna

"A total of 190 bird species have been detected during SABAP2 observations and/or during pre-construction monitoring at the proposed Ezelsjacht WEF project area, ...and so could potentially occur in the broader area. Of these, 92 are classified as priority species for solar developments. Of the 92 solar priority species, 62 have a medium-to-high probability of occurring regularly in the Broader Area, of which 52 species were recorded during the on-site pre-construction monitoring" (Chris Van Rooyen Consulting, 2022).

6.1.8 Protected Areas

According to Chris Van Rooyen Consulting, 2022: "There are seven national protected areas located close to (with 10km) of the Ezelsjacht WEF:

- *Matroosberg Mountain Catchment Area (0km, overlaps with the western portions of the PAOI).*
- *Langeberg Mountain Catchment Area (3km southeast).*
- *Drie Kuilen Private Nature Reserve (3km east).*
- *Bokkeriviere Provincial Nature Reserve (8.5km north).*
- *Elim Private Nature Reserve (9km north).*
- *Aquila Private Game Reserve (9.5km North)*
- *Rooikrans Private Nature Reserve (9.5 km east).*

6.1.9 Water Resources

According to EnviroSci, 2022: *“The site is located within quaternary catchments J12D and H40A, in the Breede-Gourtiz Water Management Area. The land has largely been transformed to cultivated fields and there are few natural areas remaining. Untransformed land is confined to drainage lines and steep slopes. The area has been subjected to significant habitat loss.*

The aquatic features were identified and delineated in-field during a site visit (total of three days) conducted in September 2022. It was determined that the proposed project has the potential to impact the following aquatic features:

- *Riverine (minor drainage lines): Incised channels with limited riparian vegetation or part of an alluvial valley;*
- *Wetland: Valley bottom wetlands, both channelled and unchannelled;*
- *Wetland: Seeps; and*
- *Artificial: Dams.*

The valley bottom wetlands, have portions of intact habitat which obtained an overall C rating for Present Ecological State (PES). However, there are reaches which have been largely modified and have deviated significantly from the reference condition. The minor drainage lines and seep wetlands remaining in the study area have been significantly impacted by past land transformation and continued agricultural activities. These aquatic systems are highly degraded and generally received a PES rating of D or E. The continued erosion within these drainage areas, coupled with the excessive sediment inputs from the cultivated and ploughed lands, has resulted in sedimentation of the larger valley bottom wetlands downslope.”

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6.2 SOCIO-ECONOMIC PROFILE

6.2.1 District Municipality

The proposed project falls within the Cape Winelands District Municipality (CWDM) in the Western Cape Province. The CWDM is a Category B municipality. The district municipality has a population of 955 473 and comprises the boundaries of this municipality, which covers an area of 22,289 km² in extent. The main attraction within the district is the

The proposed project is located within Ward 01 of the Breede Valley Local Municipality (BVLM). The BVLM is located on the most northern part of the CWDM, and includes the middle section of the Breede River Valley around the town of Worcester, which stretches up the Hex River valley to the edge of the Karoo. The municipal area comprises 3 833 km². Major towns present within the BVLM include, Worcester, Rawsonville, De Doorns and Touws River.

6.2.2 Population

The CWDMs population is projected to grow at an annual growth rate of 0.6 % from 955 473 in 2021 to 1 007 913 in 2025, and the municipality has more females (50.7 %) relative to males (49.3 %). The median age within the CWDM is 28, and those within the working age of the population constitute 60 % of the population.

Breede Valley recorded the second largest population density in the Cape Winelands District (20,4% of the Cape Winelands District population), which has a population size of 866 223 according to Community Survey 2016 data. In 2019 63.3% of the BVLM population consisted of Coloured, 24.3% as Africans, and 10.7% as White. The first language of 76.0% of the population is Afrikaans, while 16.1% speak Xhosa, 2.9% speak English and 2.7% speak Sotho.

6.2.3 Education

In 2020, the school pass rate in the CWDM was 70.4 %. Approximately, 87,9 % of school-aged children between the ages 5 and 17 are in schools. At least 20.6 % of the population within the CWDM have secondary education, while 1.3 % are those with a tertiary education. The Breede Valley municipal area experienced a relatively significant decline in the Grade 12 pass rate between 2017 (80.2%) and 2018 (77.1%), declining by 3.1 percentage points. The Grade 12 pass rate of the municipal area further declined by 0.4 percentage points between 2018 and 2019, declining to 76.7%. Declining retention- and matric pass rates can be ascribed to an array of socio-economic factors.

BVLM has had some level of secondary schooling (42,8%), followed by people who completed secondary schooling (26,7%). Only 9,5% of people residing in Breede Valley achieved a tertiary education qualification. Males account for 28,8% and 59,5% of graduates and postgraduates respectively. On the other hand, females comprise 71,2% and 40,5% of graduates and postgraduates, respectively.

6.2.4 Services

According to the Breede Valley Local Municipality IDP (2021-2022), Access to potable water is the norm in Breede Valley Municipality. According to StatsSA Community Survey 2016, the number of households with access to piped water inside the dwelling was estimated at 46 077, with 1 492 households using other sources for their water supply. Breede Valley residents have experienced a significant shift from access to potable water from outside the yard to inside the dwelling.

Good sanitation services exist across the Breede Valley municipal area, with a total of 22 726 households (95%) having access to flush toilets connected to the sewerage system and 408 (2%) to a flush toilet with septic tank. A total of 700 (3%) households have access to chemical toilets (predominantly located in informal settlements).

6.2.5 Economy

From an economic perspective, BVLM has a fairly diversified economy, with agriculture and the wholesale and retail trade being the largest sectors. A diverse secondary and tertiary economy has developed around the agricultural sector, including industrial activities associated with the fruit industry which exist in Worcester and Rawsonville and extensive wine production activity. Tourism activities related to agriculture and the wine industry are growing. The Municipal Economic Review and Outlook prepared by Western Cape Provincial Treasury indicates that GDP growth in BVLM has been 2,4% on average over the past 10 years.

6.2.6 Existing Road Network

The existing road network adjacent to the proposed development is well established, consisting of a combination of national roads, first, second and third-order roads, which provides access to the proposed development from local towns and major commercial centres within South Africa.

6.3 VISUAL PROFILE

6.3.1 Landscape Character

The physical and land use-related characteristics of the study area as described above contribute to its overall visual character. Visual character largely depends on the level of change or transformation from a natural baseline in which there is little evidence of human transformation of the landscape. Varying degrees of human transformation of a landscape would engender differing visual characteristics to that landscape, with a highly modified urban or industrial landscape being at the opposite end of the scale to a largely natural undisturbed landscape. Visual character is also influenced by the presence of built infrastructure including buildings, roads and other objects such as telephone or electrical infrastructure. The visual character of an area largely determines the sense of place relevant to the area. This is the unique quality or character of a place, whether natural, rural or urban which results in a uniqueness, distinctiveness or strong identity.

The predominant land use in the area (sheep farming) has not transformed the natural landscape across much of the study area to any significant degree and there are no towns or built-up areas in the study area influencing the overall visual character. Thus, there are low levels of human transformation and visual degradation across a significant portion of the study area and the natural character has been retained.

There are however prominent anthropogenic elements in the study area however which include the R318 Main Road and 132kV powerlines. Other, less prominent elements present in the area include lower voltage power lines, telephone poles, windmills, gravel farm access roads and farm boundary fences. The presence of this infrastructure is an important factor in this context, as the introduction of the proposed WEF would result in less visual contrast where other anthropogenic elements are already present

The scenic quality of the landscape is also an important factor contributing to the visual character of an area or the inherent sense of place. Visual appeal is often associated with unique natural features or distinct variations in landform. As such, the largely natural landscapes which occur in the wider study area would increase the scenic appeal and visual interest in the area.

Cultural landscapes are becoming increasingly important concepts in terms of the preservation and management of rural and urban settings across the world. The concept of 'cultural landscape' is a way of looking at a place that focuses on the relationship between human activity and the biophysical environment (Breedlove, 2002). In this instance, the rural / pastoral landscape represents how the environment has shaped the predominant land use and economic activity practiced in the area, as well as the patterns of human habitation and interaction.

In light of this, it is important to assess whether the introduction of a WEF into the study area would be a degrading factor in the context of the prevailing character of the cultural landscape. Broadly speaking, it is anticipated that the proposed WEF will result in visual impacts on the cultural landscape of the broader area due to the fact that there are some tourism or nature-based facilities in the study area and that the elements of the WEF is expected to be visible from the R318 Main Road.

6.3.2 Land Use

According to the South African National Land Cover dataset (Geoterraimage 2018), much of the area is classified as shrubland interspersed with patches of "Bare / Barren Land". While some of these bare / barren areas are representative of transformation due to human activity, in most cases these patches of land are merely undisturbed areas with very sparse vegetation cover. Small tracts of grassland occur in the south-west, mainly near watercourses (Figure 6-6).

Agricultural activity in the area is restricted by the arid nature of the local climate and areas of cultivation are largely concentrated in the flatter areas in the centre of the study area, with centre pivot irrigation being fairly common. As such, the natural vegetation has been retained across much of the study area. Livestock (sheep) farming is also fairly common although farm properties are quite large and livestock densities are relatively low. Thus, the area has a very low density of rural settlement, with relatively few isolated farmsteads in evidence. Built form in much of the study area is limited to isolated farmsteads, including farm worker's dwellings and ancillary farm buildings, gravel access roads, telephone lines, fences, and windmills.

Further human influence is visible in the area in the form of the R318 main road which traverses the study area in a north to south direction. In addition, existing, electrical infrastructure, including 132kV powerlines are also significant man-made features in an otherwise undeveloped landscape. In addition, the Touws River Solar Energy Facility (SEF) extends into a small portion of land on the northern boundary of the study area, thus forming a relatively isolated patch of transformed landscape.

The closest built-up area is the town of De Doorns which is situated approximately 14km west of the Ezelsjacht WEF application site. The town is outside the study area for this project and is thus not expected to influence the visual character of the study area.

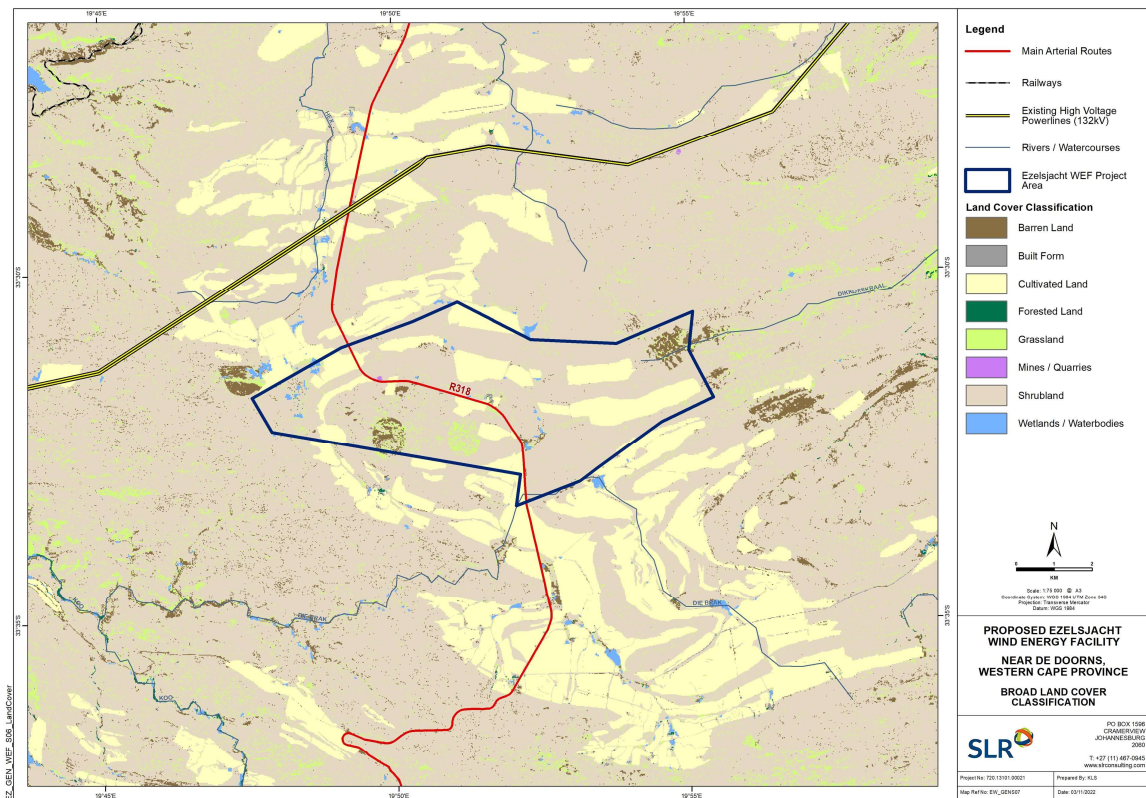


Figure 6-6: Land cover classification in the study area

6.4 HERITAGE RESOURCES

6.4.1 Archaeology

According to Asha Consulting (Pty) Ltd, 2022 *“the site is largely mountain land which is of low sensitivity from an archaeological point of view. Other surveys in high-lying areas show that archaeological sites are very rare in such contexts and, when present, are ephemeral and insignificant. The only place where sites might be found is adjacent to the river in the southwestern part of the site, but rivers are generally avoided by development. There are still some heritage concerns though. These relate to (1) historical farm complexes and (2) scenic routes and the cultural landscape.”*

6.4.2 Palaeontology

The sandstones and pebbly beds of the paralic (fluvial / coastal marine) Rietvlei Formation (uppermost Table Mountain Group) are associated locally with low-diversity trace fossil assemblages as well as a marine shelly invertebrate faunule of Early Devonian, Malvinokaffric aspect towards the east where it grades into the Baviaanskloof Formation (Theron & Basson 1989, Almond 2008).

The Lower Bokkeveld Group (Ceres Subgroup) plus overlying lowermost Bidouw Subgroup (Waboomberg Formation) in the Western Cape contains rich assemblages of shallow marine invertebrates, trace fossils and rarer fish remains of the Malvinokaffric Faunal Province of Gondwana (Cooper 1982, Oosthuizen 1984, Hiller & Theron 1988, Theron & Johnson 1991, MacRae 1999, Almond in De Beer et al. 2002, Thamm & Johnson 2006, Almond 2008, 2010, Penn-Clarke et al. 2018b, Penn-Clarke 2019). The shelly fossil assemblages – generally preserved as impressions or moulds, but occasionally in the Gydo Formation also embedded within phosphatic or siliceous nodules – are especially abundant within the mudrock-dominated units such as the Gydo, Voorstehoek and Waboomberg Formations. However, rich fossil shell beds (coquinas) are also known locally from some of the marine sandstone units such as the Gamka Formation in the De Doorns – Touwsrivier area (e.g. N of Moordhoogte Pass), as reflected in local place names such as Skulpiesklip. Scientifically important occurrences of echinoderm and other invertebrate fossils are also recorded from the Voorstehoek Formation in this region (e.g. Breimer & Macurda 1972, Jell & Theron 1999, Reid et al. 2015, Matthews 2019).

The various Late Caenozoic superficial sediments overlying the Devonian bedrocks within the project are generally unfossiliferous to sparsely fossiliferous, at most. In coarser sediments (e.g. breccio-conglomerates) these fossils may include robust, highly disarticulated and abraded (e.g. rolled bones, teeth of vertebrates), especially within calcretised older alluvium. Well-preserved skeletal remains of plants (e.g. wood, roots), vertebrates (e.g. small mammals, reptiles) and invertebrate animals (e.g. freshwater molluscs and crustaceans) as well various trace fossils (e.g. termitaria and other insect burrows) may occasionally be found within fine-grained alluvium. Human artefacts such as stone tools that can be assigned to a specific interval of the archaeological time scale (e.g. Middle Stone Age) can be of value for constraining the age of Pleistocene to Recent surface deposits like alluvial terraces.

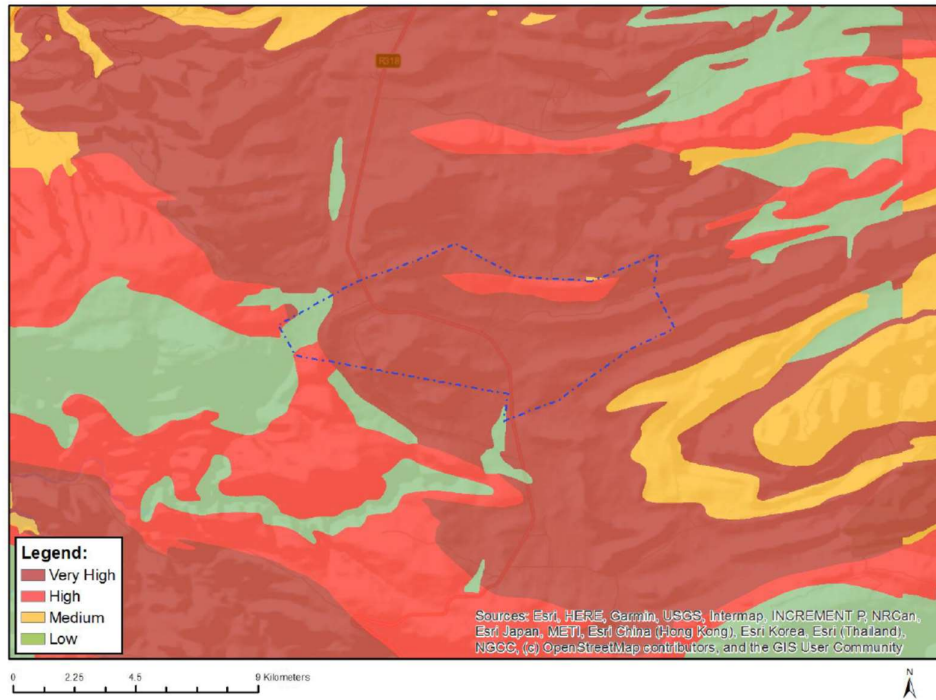


Figure 6-7: Palaeontology sensitivity Map of the Ezelsjacht WEF Project study area

7. POTENTIAL ENVIRONMENTAL IMPACTS

The purpose of the Scoping process is to identify key potential impacts and/or benefits and to screen out the impacts that do not warrant further detailed investigation and assessment during the Impact Assessment Phase. The key issues and impacts/benefits described below have been identified by the EIA project team with inputs made by I&APs (where applicable). This list of impacts will be updated and finalised once the Scoping Phase public participation process has been completed. Specialists will be required to confirm these potential impacts, as well as identify any others, and assess the significance thereof. The sequence in which these issues are listed are in no order of priority or importance.

7.1 IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

7.1.1 Terrestrial Ecosystems

Issue: The proposed project would result in the clearing of vegetation within the proposed development footprint (including wind turbines, access roads, buildings, etc.). Additional areas would also need to be cleared for temporary construction camps and laydown areas that would be required during the construction phase. Due to the nature of decommission activities, impacts during the decommissioning phase would be of a similar nature and of short-term duration. The disturbance of these ecosystems would have an impact on both flora and fauna located within the study area.

The proposed project could also result in a number of indirect impacts on terrestrial ecosystems, e.g., introduction of alien invasive plant species and the alteration of the local micro-climate beneath the modules (e.g., shading, temperature, height restriction, etc.), which may bring about changes to the species composition, diversity, vegetation structure, etc.

Response: A Terrestrial Impact Assessment will be undertaken to determine the impact on terrestrial fauna and flora and the findings presented in the EIA Report. The terms of reference for the Terrestrial Biodiversity Impact Assessment are presented in [Table 6-4](#).

7.1.2 Avifauna

Issue: The clearing of vegetation within the proposed development footprint would result in the loss of avifaunal habitat. Operations during the construction, operational and/or decommissioning phases may result in the displacement of avifaunal species due to disturbance. During the operational phase, additional impacts on avifauna may result from possible collisions with the wind turbines.

Response: The avifaunal specialists have confirmed that the site is of low sensitivity with respect to avifauna and that an Avifaunal Compliance Statement would be compiled in compliance with the *“Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial animal species”* (GN No. 1150 of 30 October 2020).

7.1.3 Freshwater Resources

Issue: The proposed project could have an impact on the freshwater systems on site either through direct disturbance (e.g., placement of infrastructure footprints within rivers or wetlands) or indirectly through

contamination from spills / uncontrolled releases (during the construction, operational and decommissioning phases).

Response: A Freshwater Ecological Assessment will be undertaken to determine the impact on the freshwater systems and the findings presented in the EIA Report. It will also be determined if a Water Use Licence is required for the proposed project. The terms of reference for the Freshwater Ecological Assessment are presented in [Table 6-4](#).

7.1.4 Soils and Agricultural Potential

Issue: The proposed project could result in the loss of arable/grazing land. Construction activities (e.g., excavations) may also increase the erosion potential of soils, which could result in the permanent loss of topsoil.

Response: An assessment will be undertaken to determine the impact on the soil and agricultural potential of the site and the findings presented in the EIA Report. The terms of reference for the Soil and Agricultural Potential Assessment are presented in [Table 6-4](#).

7.2 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

7.2.1 Creation of Employment and Local Expenditure

Issue: The proposed development of the WEF and associated infrastructure would stimulate both direct and indirect employment opportunities during the construction and operation phases. The proposed project would also result in direct and indirect local expenditure with much of the expenditure being directed at payments to labour / employees and purchase of materials.

Response: A large number of the work force (low and semi-skilled) would be sourced from the local labour force in and around the project site. Employment and local expenditure will be considered qualitatively in the EIA and the specialist Social Impact Assessment. The terms of reference for the specialist are presented in [Table 6-4](#).

7.2.2 Visual Impact

Issue: The proposed project would potentially alter the landscape character of the site. This could have some visual implications for the immediate surrounding area and neighbouring access roads (i.e., the N1 national road).

Response: The potential visual impact will be assessed in the specialist Visual Impact Assessment and the findings will be presented in the EIA Report. The terms of reference for the Visual Impact Assessment are presented in [Table 6-4](#).

7.2.3 Impact on Heritage Resources

Issue: The construction of project-related infrastructure could potentially disturb cultural heritage material on site.

Response: A Heritage Impact Assessment will be undertaken during the impact assessment phase to identify the potential impact on any heritage resources which may be located on the site. The terms of reference for this assessment are presented in Table 6-4.

7.2.4 Impact on Civil Aviation

Issue: The potential impact on civil aviation is related to the reflection of sunlight during the day from the module surface, which can present a hazard during critical phases of flight, especially approach and landing.

Response: The potential impact on civil aviation at any nearby airfields, will be investigated, in consultation with the South African Civil Aviation Authority (SACAA), taking into account, *inter alia*, distances, orientation and angle of elevation of the modules, flight paths, etc. The findings will be presented in the EIA Report.

7.2.5 Impact of Additional Traffic

Issue: The proposed project would result in an increase in traffic volumes generated during the construction and operational phases of the proposed project, which may affect the level-of-service (LOS) on the existing road network (i.e., increased vehicle trips), as well as be a nuisance (noise and visual) to any surrounding residents.

Response: A Traffic Impact Assessment will be commissioned to establish the existing traffic volumes and associated LOS, determine the Trip Generation Rate for the proposed project and associated change to the LOS, and assess the associated traffic impact. The terms of reference for this assessment are presented in Table 6-4.

7.2.6 Impact of Project-Related Noise

Issue: While noise would be generated during the construction and decommissioning phases and may be a nuisance to any nearby sensitive noise receptors, the intensity of these impacts could be high at times, the overall duration of the construction/decommissioning phases would be over the short-term. During the operational phase, some equipment (e.g., transformers) can generate noise depending on their size and basic insulation level, however, it is not expected that this would have a significant impact on ambient noise levels due to the distance of the nearest sensitive noise receptors to the Project Site.

Response: Project-related noise-impacts will not be assessed further in the impact assessment phase. The EMPr for the proposed project will include appropriate management/mitigation, where required, to address possible noise impacts.

7.2.7 Impact on Air Quality

Issue: Dust generated from vegetation clearing and the movement of vehicles on unsurfaced roads may contribute to elevated particulate matter levels in the air on a local scale. Emissions would also be generated by vehicles and other combustion-driven equipment (e.g., generators) that release nitrogen oxides (NO_x), carbon dioxide (CO₂), carbon monoxide (CO) and volatile organic compounds (VOC).

Response: Construction/Decommissioning activities may result in temporary dust emissions. This can be effectively managed through appropriate management/mitigation included in the EMPr. The nature of the project is such that no material air emissions are anticipated. Thus, this issue is scoped out from further assessment in the impact assessment phase.

7.3 PRELIMINARY ASSESSMENT OF IDENTIFIED POTENTIAL IMPACTS

As required in terms of the EIA Regulations 2014 (as amended), a preliminary assessment of the potential impacts associated with the implementation of the proposed project is included in Table 6-1. It must be noted that a conservative approach has been applied to these ratings in the absence of site – specific specialists’ assessments. The identified impacts and associated impact ratings may change once all the site-specific specialist studies have been completed. The final ratings will be included in the EIA Report. The methodology used for the assessment is described in Section 8.5.

Table 6-1: Preliminary List of Potential Impacts Identified for the Ezelsjacht WEF

Potential impact	Activity	Project phases	Consequence			Probability	Significance	Degree to which impact can:		
			Intensity	Duration	Extent			Be reversed	Cause irreplaceable loss of resources	Be avoided
Impacts on terrestrial ecosystems	Site preparation Earthworks Accidental spillages and leaks from machinery and equipment General site management	C, O, D	H	L	R	Definite	VH	Unlikely	Possible	Managed / Mitigated
Impacts on avifauna	Site clearance Earthworks Noise generated from machinery and equipment	C, O, D	L	L	R	Possible	L	Partially	Possible	Managed / Mitigated
Impacts on freshwater systems	Site preparation Earthworks Accidental spillages and leaks from hazardous substances	C, O, D	H	L	L	Probable	H	Unlikely	Possible	Managed / Mitigated
Impacts on soil and agricultural potential	Site preparation Earthworks Accidental spillages and leaks from hazardous substances	C, O, D	M	L	L	Definite	M	Partially	Possible	Managed / Mitigated
Creation of employment and local expenditure	Construction, operation and decommissioning of proposed project	C, O, D	M ⁺	H	R	Probable	H ⁺	Partially	N/A	Can be managed to enhance positive impact
Visual impacts	Site preparation Earthworks Placement of WEF facility	C, O, D	H	L	R	Definite	VH	Unlikely	Possible	Can be managed / mitigated to acceptable levels

Potential impact	Activity	Project phases	Consequence			Probability	Significance	Degree to which impact can:		
			Intensity	Duration	Extent			Be reversed	Cause irreplaceable loss of resources	Be avoided
	Movement of people, machinery, and equipment									
Impact on heritage resources	Site preparation Earthworks	C, O, D	H	L	R	Possible	H	Unlikely	Possible	Can be managed / mitigated to acceptable levels.
Impact on civil aviation	Operation of proposed project	O	L	L	R	Improbable	L	Fully	N/A	Can be managed/mitigated to acceptable levels
Impact of additional traffic	Transportation of workers, equipment, and material to site	C, O, D	L	L	R	Probable	M	Partially	Unlikely	Can be managed/mitigated to acceptable levels
Impact of project-related noise	Site preparation Earthworks Movement of vehicles and people Noise from equipment (i.e., generators, etc.)	C, D	L	L	L	Definite	L	Fully	Unlikely	Can be managed/mitigated to acceptable levels
Impact on air quality	Site preparation Earthworks Movement of vehicles and equipment	C, D	L	L	R	Definite	L	Partially	Unlikely	Can be managed/mitigated to acceptable levels

Key:

Project Phases	Intensity	Duration	Extent	Significance
C – Construction	VL – Very Low	S – Short term	L - Local	VL – Very Low
O – Operation	L – Low	M – Medium term	R - Regional	L - Low
D – Decommissioning	M – Medium	L – Long term	N - National	M - Medium
	H - High		I - International	H - High
				VH - Very High

8. PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT

This Plan of Study for the EIA is submitted in accordance with the requirements set out in Appendix 2 (h) of the EIA Regulations 2014 (as amended) which state that a Scoping Report must include a Plan of Study for EIA which sets out the proposed approach to the EIA of the application. The contents for the Plan of Study for EIA are set out in Table 6-2 below with an indication of where each requirement is addressed in the report.

8.1 IMPACT ASSESSMENT PHASE OBJECTIVES

The main objectives of the Impact Assessment phase are to:

- Conduct detailed environmental and social baseline studies of the project site for the proposed project and the surrounding environment;
- Assess the environmental (direct, indirect, and cumulative) impacts of the proposed project;
- Identify mitigation and management measures to be implemented to mitigate against negative environmental impacts, and to enhance positive environmental impacts during the project life cycle of the proposed project;
- Undertake a comprehensive Public Participation Process to provide Interested and Affected Parties (I&APs), Key Stakeholders, Organs of State with an opportunity to review and provide comments on the outcomes of the EIA process and the acceptability of the proposed mitigation and management measures;
- Develop an Environmental Management Programme (EMPr) for the proposed project; and
- Provide measures for on-going monitoring (including the undertaking of environmental audits) to ensure that the proposed project and recommended mitigation and management measures are implemented as outlined in EIA and EMPr.

Table 6-2: Summary of Plan of Study Requirements and location in the Scoping Report

Plan of Study Requirements (Appendix 2 (h) EIA Regulations 2014 (as amended in 2017))	Location in Report
(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Chapter 5 Section 5.7
(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;	Chapter 7 Section 7.1 – 7.2 and 7.3
(iii) aspects to be assessed by specialists;	Chapter 8 Section 3.4.3– 8.4
(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Chapter 8
(v) a description of the proposed method of assessing duration and significance;	

<i>(vi) an indication of the stages at which the competent authority will be consulted;</i>	Chapter 8
<i>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process;</i>	Section 8.6 - 8.6
<i>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;</i>	
<i>(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</i>	Chapter 8 Section 8.8

8.2 EIA TASKS

If the Final Scoping Report is accepted by DFFE, the impact assessment phase will commence. Any process conditions attached to the acceptance of the Scoping Report will be implemented in the EIA process. This will involve the tasks set out below.

8.2.1 Specialist studies

Various specialist studies will be undertaken concurrently, as per the Terms of Reference provided in Sections 3.4.3 and 8.4 and they will identify and assess potential impacts using the impact assessment methodology described in Section 8.5. Baseline information used to describe the affected environment in Chapter 6 will be updated where new information is identified. Stakeholder comments, concerns or issues raised during the Scoping Phase will be considered under the relevant specialist studies where relevant.

8.2.2 Draft EIA Reporting

The draft EIA Report will be prepared, building on the structure and content of the Scoping Report, following the requirements of Appendix 3 of the EIA Regulations, 2014 (as amended) and in terms of conditions of the DFFE's acceptance of the Scoping Report. Stakeholder comments, concerns or issues raised during the Scoping Phase will be considered and addressed in the EIA Report where relevant. Chapters will be updated to reflect any changes in legislation, project description, and affected environment where relevant. Reporting on the need and desirability of the proposed activities will be reviewed and updated.

The impacts, assessed by specialists for project activities during the mobilisation, operation, and decommissioning phases, will be incorporated into the draft EIA Report together with feasible and client-approved mitigation measures. A separate EMPr of the mitigation and monitoring measures will be prepared to meet NEMA requirements set out under Appendix 4 of the EIA Regulations, 2014 (as amended).

8.2.3 Public Participation

I&APs who registered with SLR will be notified of the availability of the draft EIA Report and EMPr for review and comment over a period of 30 days. The report will be available on SLR's website, via a data-free website and in hard copy at public libraries / venues.

All registered I&APs will be informed of the submission of the Final EIA Report to DFFE for consideration (report to be uploaded onto the SLR website for information) and notified of the DFFE’s decision on the Environmental Application for Authorisation.

8.2.4 Final EIA Report

After closure of the comment period, all comments, concerns, or issues received on the draft report will be incorporated and responded to in a Comments and Responses Report. Public comments relevant to informing the technical content and the assessment of impacts will be shared with the specialists to ensure issues raised are addressed in the content of the specialist reports, and the Final EIA and EMP, where appropriate. The draft EIA report will be updated to a final version, which reflects the incorporation of comments, and submitted to DFFE for consideration and review. After its review, DFFE will make a decision as to whether or not to grant an Environmental Authorisation.

8.3 SITE SENSITIVITY VERIFICATION BY SPECIALISTS

In accordance with GN R960 of 5 July 2019 and Regulation 16(1)(b)(v) of the EIA Regulations, 2014 (as amended), the submission of a Screening Report generated from DFFE’s national web-based screening tool is considered compulsory for the submission of applications for EA in terms of Regulations 19 and 21 of the EIA Regulations 2014 (as amended) (Appendix 5). The requirement of the submission of a Screening Report is triggered by the application for EA for the proposed project as the application falls within the ambit of Regulation 21 of the EIA Regulations 2014 (as amended). The specialist assessments/theme, sensitivity ratings identified by the Screening Tool and, in accordance with GN R320 of 20 March 2020, the outcomes of the site verification are summarised in Table 3-3 below. The detailed findings of the specialists relating to the outcome of the Site Sensitivity Verification is set out in the Site Sensitivity Verification Report attached as Appendix 5. Where required, the specialist studies will be undertaken with the requirements of GN R320 of 20 March 2020 and any updates thereto. Where no protocols have been provided, the specialist assessment will be undertaken in accordance with Appendix 6 of the EIA Regulations, 2014 (as amended).

Table 6-3: Specialist Assessments and Sensitivity Ratings identified by DFFE’s Web-based Screening Tool

Specialist Assessment / Theme	Sensitivity Rating as per Screening Report	Sensitivity Rating as per Specialist Verification	Response
Agriculture	High	Medium and Low	This site sensitivity verification verifies the entire site as being of medium and low agricultural sensitivity. Medium and low agricultural sensitivity is appropriate in terms of the site's climate, terrain and soils, which limit agricultural potential, thus a Soil and Agricultural Agro-Ecosystem Specialist Assessment will be undertaken into the EIA Phase of the project.
Flicker	Very High	Very High	A site sensitivity verification has been conducted in respect of the Visual Impact Assessment (VIA) for the proposed 140MW Ezelsjacht WEF near De Doorns in the Western Cape Province. This verification has been based on a desktop-level assessment supported by field-based observation.
Landscape (Wind) Theme / Visual	Very High	Very High	

Specialist Assessment / Theme	Sensitivity Rating as per Screening Report	Sensitivity Rating as per Specialist Verification	Response
			As outlined above, the findings of the VIA have been further assessed and verified in relation to the sensitivities identified in terms of the Landscape Theme of the National Environmental Screening Tool. A VIA including Flicker will be provided for the EIA Phase of the development.
Archaeological and Cultural Heritage	Low	Low	The site identified for WEF development does indeed appear to be largely of low sensitivity (the main exceptions are the Soutfontein farm complex and associated graveyard, as well as the R318 scenic route and wider landscape) and it is suggested here that the assessment should proceed into the EIA phase. There are no fatal flaws in terms of the WEF site, although it is likely that cultural landscape impacts will be highly significant, especially given the lack of similar projects in the area.
Palaeontology	Very High	Low	Impacts on local palaeontological heritage resources due to the proposed Wind Energy Facility and associated infrastructure are anticipated to be of VERY LOW (-ve) significance. A palaeontological heritage assessment is not recommended as part of the Environmental Authorisation process for the WEF development and there are no objections on palaeontological grounds to its authorisation. A Chance Fossil Finds Protocol should be included within the EMPR for the development.
Terrestrial Biodiversity	Very High	High	The terrestrial biodiversity theme illustrates that large parts of the site are classified as Very High sensitivity for the Terrestrial Biodiversity Theme. This is due to the presence of areas of CBA 1, ESA1, ESA 2 and the Matroosberg Mountain Catchment Area within the project area. Although some parts of the WEF site are considered to be degraded as a result of previous cropping and excessive livestock grazing, the majority of the site can still be considered to be in a near-natural condition. As such, the CBA and ESA status of the site is upheld and cannot be contested. As such a full terrestrial biodiversity assessment of the development will be conducted in the EIA phase.
Aquatic Biodiversity	Very High	High	In conclusion, the DFFE Screening Tool identified one sensitivity rating within the development footprint, namely, Very high.

Specialist Assessment / Theme	Sensitivity Rating as per Screening Report	Sensitivity Rating as per Specialist Verification	Response
			Although there is some overlap with the findings on site and the Screening Tool's outcome (i.e. confirmation of Very High sensitivity theme on site), the development footprint contains various other sensitivities (Very high and Medium - low) that were identified following the undertaking of infield assessment and spatial input considerations.
Avifauna	Low	High	The occurrence of Species of Conservation Concern was confirmed during the integrated pre-construction monitoring programme for the overlapping Ezelsjacht WEF area, with observations of the above four SCC listed in the screening tool recorded during pre-construction monitoring. Other Red List species were also during preconstruction monitoring include Black Stork (Globally Least Concern, Regionally Vulnerable), Blue Crane (Globally Vulnerable, Regionally Near Threatened), Lanner Falcon (Globally Least Concern, Regionally Vulnerable), Secretarybird (Globally Endangered, Regionally Vulnerable). Based on the field surveys to date, a classification of High sensitivity for avifauna for the whole PAOI would be appropriate. A full Avifauna Impact Assessment will be provided in the EIA Phase.
Civil Aviation (Wind)	High	Medium	The Screening Tool identified the site as being of 'medium' sensitivity, thus a Civil Aviation Compliance Statement has been compiled (see Appendix 5)).
Defence	Low	Low	There are no military bases / facilities present within the vicinity of the project site. Thus, no further assessment is deemed necessary.
RFI	Low	Low	No further assessment is deemed necessary. SARA0 has been identified as a stakeholder on the project database and will be afforded with the opportunity to provide comments during the 30-day review and comment period of the Scoping Report.
Geotechnical	-	-	No preliminary Geotechnical sensitivities or sensitivity rating was identified or provided based on the DFFE Screening Tool (i.e. a preliminary sensitivity rating was not provided that could then be confirmed or altered based on further assessment). Nevertheless, this Site Sensitivity Verification Report (SSVR) provides an overall sensitivity rating for the site.

Specialist Assessment / Theme	Sensitivity Rating as per Screening Report	Sensitivity Rating as per Specialist Verification	Response
Socio-Economic	-	-	A detailed Social Impact Assessment for the project will be undertaken during the impact assessment phase. A Social SSVR is included in this Scoping Report
Plant Species	High	Medium	The following will be undertaken into the EIA Phase: <ul style="list-style-type: none"> Faunal Species Assessment for the Riverine Rabbit Fauna Species Assessment for the Grey Rhebok Plant Species Assessment for Amphithalea spinosa as well as any other plant SCC that are detected within the final development footprint.
Animal Species	High	High	
Traffic	-	-	
Bats	High	High	At present, the site sensitivities have been verified to be high by the specialist, but this will only be fully confirmed after the full twelve months of monitoring, as well as the extra monitoring period, have been incorporated into the study. The final Bat Assessment will be provided with the EIA Phase.
Noise	Very High	Very High	Due to the number of potential noise-sensitive locations in the area, it is recommended that the potential significance of the noise impact be assessed on the verified receptors in a noise specialist study to be conducted into the EIA phase

The terms of reference for the proposed specialist studies are presented in Section 8.4 of the Scoping Report. The proposed specialist studies will involve the gathering of data (desktop and site verification, where required) relevant to ground-truthing and assessing environmental impacts that may occur as a result of the proposed project. The identified environmental impacts will be assessed in accordance with pre-defined rating scales (see Section 8.5). Specialists will also recommend appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively.

8.4 TERMS OF REFERENCE FOR THE SPECIALIST STUDIES

8.4.1 General Terms of Reference for the Specialist Studies

The following general Terms of Reference will apply to the Specialist Studies:

- Describe the baseline conditions that exist on site and identify any sensitive areas that would need special consideration;
- Review the Comments and Responses Reports in the Final Scoping Report to ensure that all relevant issues or concerns relevant to the field of expertise are addressed;

- Identify and assess potential impacts of the construction, operation, and decommissioning phases, as well as the No-Go Alternative;
- Identify and list all legislation and permit requirements that are relevant to the proposed project;
- Identify areas where issues could combine or interact with issues likely to be covered by other specialists, resulting in aggravated or enhanced impacts;
- Indicate the reliability of information utilised in the assessment of impacts as well as any constraints to which the assessment is subject (e.g., any areas of insufficient information or uncertainty);
- Consider the precautionary principle in the assessment of all potential impacts;
- Identify feasible ways in which impacts could be mitigated and benefits enhanced giving an indication of the likely effectiveness of such mitigation and how these could be implemented in the construction and management of the proposed project;
- To ensure that specialists use a common standard, the determination of the significance of the assessed impacts will be undertaken in accordance with a common Convention (see Section 8.5);
- Comply with DFFE guidelines as well as any other relevant guidelines on specialist study requirements for EIAs;
- Include specialist expertise and a signed statement of independence; and
- Comply with the relevant specialist assessment and minimum report content requirements listed in the gazetted Specialist Protocols (GN R320 of 20 March 2020), or where no protocol has been prescribed, comply with the provisions of Appendix 6 of the EIA Regulations 2014 (as amended).

8.4.2 General Terms of Reference for the Specialist Studies

The specific, additional Terms of Reference for each of the proposed specialist studies is provided in Table 6-4 below.

Table 6-4: Specific Terms of Reference for the proposed Specialist Studies

Specialist Study (appointed consultants)	Terms of Reference
Terrestrial Biodiversity/ Animal and Plant Species (3 Foxes)	<p>In accordance with the “<i>Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity/Animal Species/Plant Species</i>”, The following will be undertaken into the EIA Phase:</p> <ul style="list-style-type: none"> • Faunal Species Assessment for the Riverine Rabbit • Fauna Species Assessment for the Grey Rhebok • Plant Species Assessment for <i>Amphithalea spinosa</i> as well as any other plant SCC that are detected within the final development footprint. <p>The proposed terms of reference for the study is as follows:</p> <ul style="list-style-type: none"> • Identify, map (vegetation types, locations of species of conservation concern and conservation value / sensitivity map) and describe the flora present on site that could be affected by the proposed project, based on a field survey and available literature; • Provide a broad description of the existing environment in terms of its fauna (focusing on

Specialist Study (appointed consultants)	Terms of Reference
	<p>vertebrates, but with cognition of invertebrates of conservation concern), based on a field survey and available literature;</p> <ul style="list-style-type: none"> • Identify and describe sensitive faunal habitats within the study area; • Comment on the conservation status and ecological importance of species on a local, regional, and national scale; • Identify any species of special concern viz. species with conservation status, endemic to the area or threatened species that exist or may exist on site; • Provide a conservation importance rating of the vegetation on site (in local, regional, and national terms); • Incorporate the relevant requirements of the Terrestrial Plant and Animal Species Protocols; • Investigate ecological / biodiversity processes that could be affected (positively and/or negatively) by the proposed project; • Provide guidance for the requirement of a permit in terms of the National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004) to remove or destroy threatened or protected species; • Assess the significance of the loss of vegetation, faunal species, and impact on ecological / biodiversity processes as a result of the implementation of the proposed project; and • Identify practicable mitigation measures to reduce any negative impacts to the indigenous vegetation (including species and techniques that could potentially be used for rehabilitation purposes) and indicate how these could be implemented in the construction and management of the proposed project.
<p>Avifauna (Chris Van Rooyen Consulting)</p>	<p>In accordance with the “Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Avifauna”, a Avifauna Assessment will be undertaken. The proposed terms of reference for the study is as follows:</p> <p>Delineate areas of high sensitivity for priority species, including any No-Go areas;</p> <p>Assess the significance of potential impacts of the proposed project on avifauna; and</p> <ul style="list-style-type: none"> • Identify practicable mitigation measures to reduce impacts to avifauna and indicate how these could be

Specialist Study (appointed consultants)	Terms of Reference
	<p>implemented in the construction and management of the proposed project.</p>
<p>Aquatic (Freshwater) (EnviroSci)</p>	<p>The Screening Tool identified the site as being of “very high” for aquatic biodiversity, the findings of the field-based survey by the specialist confirmed that although there is some overlap with the findings on site and the Screening Tool’s outcome (i.e. confirmation of Very High sensitivity theme on site), the development footprint contains various other sensitivities (Very high and Medium - low).</p> <p>Thus, in accordance with the <i>“Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity”</i>, a Aquatic/Freshwater Impact Assessment will be undertaken. The proposed terms of reference for the study is as follows:</p> <ul style="list-style-type: none"> • Identify, map, and describe the freshwater systems on site, both natural and man-made, that could be affected by the proposed project, based on a field survey and available literature; • Describe the ecological condition, sensitivity, ecological important and conservation value of all identified freshwater systems; • Identify and assess the significance of potential impacts associated with the proposed project on the freshwater systems; • Investigate ecological / biodiversity processes that could be affected (positively and/or negatively) by the proposed project; • Identify practicable mitigation measures to reduce impacts on the aquatic fauna and flora during construction and operation; and • Provide guidance for the requirement of any licences or permits from DWS that might be necessary.
<p>Soils and Agricultural Potential (Johann Lanz)</p>	<p>The Screening Tool identified the site as being of “high sensitivity” for the agriculture theme. In accordance with the <i>“Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources by onshore wind and/or solar photovoltaic energy generation facilities where the electricity output is 20 megawatts or more”</i>, an Agricultural Specialist Assessment is required. The proposed terms of reference for the study is as follows:</p>

Specialist Study (appointed consultants)	Terms of Reference
	<ul style="list-style-type: none"> • Identify, map, and describe the soils on site that could be affected by the proposed project based on fieldwork and available literature; • Provide a description of the agro-ecosystem that includes soil classification and terrain analysis; • Assess the broad agricultural potential of the site; • Provide an analysis of the current land productivity based on production figures of the past five years of all agricultural activities undertaken on the project site; • Determine the employment figures of both permanent and temporary labour associated with the agricultural activities of the past three years; • Identify any existing negative impacts on agricultural productivity of the project site such as the presence of waste dump areas, alien vegetation and existing land degradation; • Assess the significance of potential impacts of the proposed project on the soil and agricultural potential; and • Identify practicable mitigation measures to reduce impacts and indicate how these could be implemented in the construction and management of the proposed project.
<p>Social (Independent Econ)</p>	<p>Provide a broad social description of the area in the vicinity of the proposed project; Provide a detailed description of the socio-political history and demographics of the area; Identify and assess potential social impacts as a result of the proposed project. This may include, but is not limited to, the following aspects:</p> <ul style="list-style-type: none"> • Creation of employment and local expenditure; • Impact on local communities and surrounding landowners due to external construction workers and influx of job-seekers; • Sense of health and well-being of affected communities and surrounding landowners; • Impact on existing land use and economic activities; • Generation of clean, renewable energy; and • Social sustainability of the proposed project, identifying feasible alternatives to ensure social equity and justice. • Determine whether the distribution of negative impacts unfairly discriminate against any person,

Specialist Study (appointed consultants)	Terms of Reference
	<p>particularly vulnerable or disadvantaged persons; and</p> <ul style="list-style-type: none"> Identify practicable mitigation measures that would reduce potential negative impacts and enhancement measures to increase potential social benefits.
Visual (SLR Consulting)	<p>Quantify and assess the existing scenic resources/visual characteristics in and around the proposed site in relation to the surrounding areas;</p> <ul style="list-style-type: none"> Evaluate and classify the landscape in terms of its sensitivity to a changing land use; Determine viewsheds (visual horizons) and important viewpoints in order to assess the visual impact of the proposed project; Assess the significance of potential visual impacts resulting from the proposed project from various important viewpoints, e.g., transport corridors, neighbouring farmsteads / residential areas, recreational areas and other surrounding land-uses (i.e., viewer-observer distances, bulk, compatibility with surrounding area, viewer catchments, etc.); and Identify practicable mitigation measures to reduce negative visual impacts and to identify how these can be built into the project design.
Heritage/Archaeological/Paleontological/Cultural (ASHA Consulting, Natura Viva cc)	<p>Provide a description of the archaeology, palaeontology and cultural heritage of the site and identify and map any sites of archaeology, palaeontology or cultural significance that may be impacted by the proposed project;</p> <ul style="list-style-type: none"> Assess the sensitivity and conservation significance of any sites of archaeological, palaeontology or cultural heritage significance affected by the proposed project; Identify and assess the significance of the potential impacts of the proposed project on archaeological, palaeontology and cultural heritage; Make recommendations on the protection and maintenance of any significant cultural heritage and/or archaeological / palaeontology sites that may occur on site; Identify practicable mitigation measures to reduce negative impacts on the archaeological / palaeontology resources and indicate how these can be incorporated into the construction and management of the proposed project;

Specialist Study (appointed consultants)	Terms of Reference
	<ul style="list-style-type: none"> • Provide guidance for the requirement of any permits from the South African Heritage Resources Agency (SAHRA) that might become necessary.
Traffic (Athol Schwarz)	<p>Provide a description of the surrounding road network;</p> <ul style="list-style-type: none"> • Conduct manual traffic counts at key traffic intersections within the vicinity of the project site; • Conduct detailed trip generation and distribution calculations; • Conduct detailed intersection performance evaluations; • Provide basic concept geometric input for main access intersection; and • Identify practicable mitigation measures that would reduce potential negative impacts and enhancement measures to increase level of service for any affected intersections.
Noise	<ul style="list-style-type: none"> • Describe the baseline conditions that exist on site and identify any sensitive areas that would need special consideration; • Review the Comments and Responses Reports in the Final Scoping Report to ensure that all relevant issues or concerns relevant to the field of expertise are addressed; • Identify and assess potential impacts of the construction, operation, and decommissioning phases, as well as the No-Go Alternative; • Identify and list all legislation and permit requirements that are relevant to the proposed project; • Identify areas where issues could combine or interact with issues likely to be covered by other specialists, resulting in aggravated or enhanced impacts; • Indicate the reliability of information utilised in the assessment of impacts as well as any constraints to which the assessment is subject (e.g., any areas of insufficient information or uncertainty); • Consider the precautionary principle in the assessment of all potential impacts; • Identify feasible ways in which impacts could be mitigated and benefits enhanced giving an indication of the likely effectiveness of such mitigation and how these could be implemented in the construction and management of the proposed project; • To ensure that specialists use a common standard, the determination of the significance of the assessed impacts will be undertaken in accordance with a common Convention (see Section 8.5);

Specialist Study (appointed consultants)	Terms of Reference
	<ul style="list-style-type: none"> • Comply with DFFE guidelines as well as any other relevant guidelines on specialist study requirements for EIAs; • Include specialist expertise and a signed statement of independence; and • Comply with the relevant specialist assessment and minimum report content requirements listed in the gazetted Specialist Protocols (GN R320 of 20 March 2020), or where no protocol has been prescribed, comply with the provisions of Appendix 6 of the EIA Regulations 2014 (as amended).
Bats	<ul style="list-style-type: none"> • Describe the baseline conditions that exist on site and identify any sensitive areas that would need special consideration; • Review the Comments and Responses Reports in the Final Scoping Report to ensure that all relevant issues or concerns relevant to the field of expertise are addressed; • Identify and assess potential impacts of the construction, operation, and decommissioning phases, as well as the No-Go Alternative; • Identify and list all legislation and permit requirements that are relevant to the proposed project; • Identify areas where issues could combine or interact with issues likely to be covered by other specialists, resulting in aggravated or enhanced impacts; • Indicate the reliability of information utilised in the assessment of impacts as well as any constraints to which the assessment is subject (e.g., any areas of insufficient information or uncertainty); • Consider the precautionary principle in the assessment of all potential impacts; • Identify feasible ways in which impacts could be mitigated and benefits enhanced giving an indication of the likely effectiveness of such mitigation and how these could be implemented in the construction and management of the proposed project; • To ensure that specialists use a common standard, the determination of the significance of the assessed impacts will be undertaken in accordance with a common Convention (see Section 8.5); • Comply with DFFE guidelines as well as any other relevant guidelines on specialist study requirements for EIAs; • Include specialist expertise and a signed statement of independence; and • Comply with the relevant specialist assessment and minimum report content requirements listed in the

Specialist Study (appointed consultants)	Terms of Reference
	gazetted Specialist Protocols (GN R320 of 20 March 2020), or where no protocol has been prescribed, comply with the provisions of Appendix 6 of the EIA Regulations 2014 (as amended).

8.5 IMPACT ASSESSMENT METHODOLOGY

The identification and assessment of environmental impacts is a multi-faceted process, using a combination of quantitative and qualitative descriptions and evaluations. It involves applying scientific measurements and professional judgement to determine the significance of environmental impacts associated with the proposed project. The process involves consideration of, *inter alia*: the purpose and need for the project; views and concerns of I&APs; social and political norms, and general public interest.

8.5.1 Identification and Description of Impacts

Identified impacts will be described in terms of the nature of the impact, compliance with legislation and accepted standards, receptor sensitivity and the significance of the predicted environmental change (before and after mitigation). Mitigation measures may be existing measures or additional measures that were identified through the impact assessment and associated specialist input. The impact rating system considers the confidence level that can be placed on the successful implementation of mitigation.

Introduction

Specialists are to use SLR's standard convention for assessing the significance of impacts, a summary of which is provided below. In assigning significance ratings to potential impacts before and after mitigation the approach presented below is to be followed.

Determine the impact consequence rating: This is a function of the "intensity", "duration" and "extent" of the impact (see [Table 6-5](#)).

Determine impact significance rating: The significance of an impact is a function of the consequence of the impact occurring and the probability of occurrence (see [Table 8-3](#)).

Modify significance rating (if necessary): Significance ratings are based on largely professional judgement and transparent defined criteria. In some instances, therefore, whilst the significance rating of potential impacts might be "low", the importance of these impacts to local communities or individuals might be extremely high. The importance/value which interested and affected parties attach to impacts will be highlighted, and recommendations should be made as to ways of avoiding or minimising these perceived negative impacts through project design, selection of appropriate alternatives and / or management.

Determine degree of confidence of the significance assessment: Once the significance of the impact has been determined, the degree of confidence in the assessment will be qualified. Confidence in the prediction is associated with any uncertainties, for example, where information is insufficient to assess the impact.

Criteria for Impact Assessment

The criteria for the impact assessment is provided in [Table 6-5](#) below.

Table 6-5: Impact Assessment Criteria

Criteria	Rating	Description
Criteria for ranking of the INTENSITY (SEVERITY) of environmental impacts	ZERO TO VERY LOW	Negligible change, disturbance, or nuisance. The impact affects the environment in such a way that natural functions and processes are not affected. People / communities are able to adapt with relative ease and maintain pre-impact livelihoods.
	LOW	Minor (slight) change, disturbance, or nuisance. The impact on the environment is not detectable or there is no perceptible change to people's livelihood.
	MEDIUM	Moderate change, disturbance, or discomfort. Where the affected environment is altered, but natural functions and processes continue, albeit in a modified way. People/communities are able to adapt with some difficulty and maintain pre-impact livelihoods but only with a degree of support.
	HIGH	Prominent change, disturbance, or degradation. Where natural functions or processes are altered to the extent that they will temporarily or permanently cease. Affected people/communities will not be able to adapt to changes or continue to maintain-pre impact livelihoods.
Criteria for ranking the DURATION of impacts	SHORT TERM	< 5 years.
	MEDIUM TERM	5 to < 15 years.
	LONG TERM	> 15 years, but where the impact will eventually cease either because of natural processes or by human intervention.
	PERMANENT	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.
Criteria for ranking the EXTENT / SPATIAL SCALE of impacts	LOCAL	Impact is confined to project or study area or part thereof, e.g. limited to the area of interest and its immediate surroundings.
	REGIONAL	Impact is confined to the region, e.g. coast, basin, catchment, municipal region, etc.
	NATIONAL	Impact is confined to the country as a whole, e.g. South Africa, etc.
	INTERNATIONAL	Impact extends beyond the national scale.
Criteria for determining the PROBABILITY of impacts	IMPROBABLE	Where the possibility of the impact to materialise is very low either because of design or historic experience, i.e. ≤ 30% chance of occurring.
	POSSIBLE	Where there is a distinct possibility that the impact would occur, i.e. > 30 to ≤ 60% chance of occurring.
	PROBABLE	Where it is most likely that the impact would occur, i.e. > 60 to ≤ 80% chance of occurring.
	DEFINITE	Where the impact would occur regardless of any prevention measures, i.e. > 80% chance of occurring.
Criteria for determining the DEGREE OF CONFIDENCE of the assessment	LOW	≤ 35% sure of impact prediction.
	MEDIUM	> 35% and ≤ 70% sure of impact prediction.
	HIGH	> 70% sure of impact prediction.

Criteria	Rating	Description
Criteria for the DEGREE TO WHICH IMPACT CAN BE MITIGATED - the degree to which an impact can be reduced / enhanced	NONE	No change in impact after mitigation.
	VERY LOW	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
	LOW	Where the significance rating drops by one level, after mitigation.
	MEDIUM	Where the significance rating drops by two to three levels, after mitigation.
	HIGH	Where the significance rating drops by more than three levels, after mitigation.
Criteria for LOSS OF RESOURCES - the degree to which a resource is permanently affected by the activity, i.e. the degree to which a resource is irreplaceable	LOW	Where the activity results in a loss of a particular resource but where the natural, cultural, and social functions and processes are not affected.
	MEDIUM	Where the loss of a resource occurs, but natural, cultural, and social functions and processes continue, albeit in a modified way.
	HIGH	Where the activity results in an irreplaceable loss of a resource.

(a) Determining Consequence

Consequence attempts to evaluate the importance of a particular impact, and in doing so incorporate extent, duration, and intensity. The ratings and description for determining consequence are provided below.

Rating	Description
VERY HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the long term ; OR of high intensity at a national level in the medium term ; OR of medium intensity at a national level in the long term .
HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the medium term ; OR of high intensity at a national level in the short term ; OR of medium intensity at a national level in the medium term ; OR of low intensity at a national level in the long term ; OR of high intensity at a local level in the long term ; OR of medium intensity at a regional level in the long term .
MEDIUM	Impacts could be EITHER: of high intensity at a local level and endure in the medium term ; OR of medium intensity at a regional level in the medium term ; OR of high intensity at a regional level in the short term ; OR of medium intensity at a national level in the short term ; OR of medium intensity at a local level in the long term ; OR of low intensity at a national level in the medium term ; OR of low intensity at a regional level in the long term .

LOW	Impacts could be EITHER of low intensity at a regional level and endure in the medium term ; OR of low intensity at a national level in the short term ; OR of high intensity at a local level and endure in the short term ; OR of medium intensity at a regional level in the short term ; OR of low intensity at a local level in the long term ; OR of medium intensity at a local level and endure in the medium term .
VERY LOW	Impacts could be EITHER of low intensity at a local level and endure in the medium term ; OR of low intensity at a regional level and endure in the short term ; OR of low to medium intensity at a local level and endure in the short term . OR Zero to very low intensity with any combination of extent and duration.

(b) Determining Significance

The consequence rating is considered together with the probability of occurrence in order to determine the overall significance using the table below.

		PROBABILITY			
		IMPROBABLE	POSSIBLE	PROBABLE	DEFINITE
CONSEQUENCE	VERY LOW	INSIGNIFICANT	INSIGNIFICANT	VERY LOW	VERY LOW
	LOW	VERY LOW	VERY LOW	LOW	LOW
	MEDIUM	LOW	LOW	MEDIUM	MEDIUM
	HIGH	MEDIUM	MEDIUM	HIGH	HIGH
	VERY HIGH	HIGH	HIGH	VERY HIGH	VERY HIGH

In certain cases, it may not be possible to determine the significance of an impact. In these instances, the significance is **UNKNOWN**.

8.6 CONSULTATION PROCESS DURING THE IMPACT ASSESSMENT PHASE

8.6.1 Consultation with The Competent Authority

Any conditions attached to the acceptance of the Scoping Report will be implemented in the impact assessment phase of the proposed project. If requested, and subject to COVID-19 protocols and regulations, a site visit and meeting will be held with officials from DFFE.

The EIA Report (including the EMPr) will be submitted to DFFE for their review and comment during the 30-day legislated review and comment period of the EIA Report. The EIA Report will be updated where necessary in line with the comments received from DFFE and be submitted to the Department for decision-making. Opportunities for consultation and participation with Key Stakeholders, I&APs, and Organs of State in the Impact Assessment Phase of the project are shown in **Table 6-6**.

8.6.2 Notification to I&APs

All I&APs registered on the project database will be notified of relevant events in the impact assessment phase of the project via electronic mail, short message service (SMS), or, if required, post. This will include

when the EIA and EMPr (including specialist reports) are available for the 30-day review and comment period, and invitations to possible focussed group meetings, and notification of DFFE's decision. Any Focused Group Meetings held with Key Stakeholders and I&APs will be held virtually.

8.6.3 Information to be provided to I&APs

The EIA Report (including EMPr and specialist studies) will be released for a 30-day review and comment period. The following tasks will be undertaken by the EAP in order to notify I&APs of the release of the EIA Report:

- A Notification Letter (with an Executive Summary) will be sent to all registered I&APs to inform them of the release of the EIA Report and where the report can be accessed;
- Copies of the EIA Report (including EMPr and specialist studies) will be made available on the SLR website, and at the Breede Valley and Langeberg Public Libraries; and
- Following receipt of the decision on the Application for EA from DFFE, registered I&APs on the project database will be informed accordingly of the decision, the reasons thereof and the fact that an appeal can be lodged in terms of the National Appeals Regulations, 2014.

8.6.4 Details of the Public Participation Process

The Public Participation Process in the Impact Assessment Phase of the proposed project will include the following:

- Ongoing identification and notifications to stakeholders;
- Registration of parties as I&APs on the project database;
- Circulation of the EIA Report and Executive Summaries of the proposed project during the 30-day review and comment period;
- Collation of the comments received during the 30-day review and comment period into a Comments and Responses Report (C&RR) for inclusion in the final EIA Report for submission to DFFE for decision-making; and
- Issuance of notifications to registered I&APs on the project database of the DFFE's decision on the application for EA for the proposed project, and the appeal process in terms of the National Appeal Regulations, 2014.

8.7 DESCRIPTION OF TASKS AND INDICATIVE TIMING OF THE IMPACT ASSESSMENT PHASE

A summary of the tasks that would be undertaken during the Impact Assessment Phase, together with the anticipated schedule is provided in **Table 6-6**.

Table 6-6 : Key Tasks (and indicative timing) of the Impact Assessment Phase

Phase	EAP activity	Opportunities for Consultation and Participation		Schedule*
		Competent Authority	I&APs	
Specialist Studies	EAP to manage specialist activities and receive inputs for EIA.	-	-	Refer attached Project Schedule.
Impact Assessment Phase	Compile EIA report	-	-	
	Upload a copy of EIA report on DFFE's Novell Filr System	✓	-	
	I&AP consultations	-	Review of EIA (30 days), Comments to EAP	
	Collate and respond to comments and finalise EIA report	-	-	
	Submit final EIA report to DFFE	-	-	
Competent authority review and decision-making	EIA report to DFFE (107 days from acceptance of Scoping Report).	DFFE acknowledge receipt of EIA (10 days).	-	
		DFFE Review (107 days)		
		Environmental Authorisation Granted / Refused	-	
Decision	Notify registered I&APs of decision (within 14 days of date of decision)	-	-	
Appeal Phase	EAP to provide information on appeal process as and when required.	Consultation during processing of appeal if relevant.	Opportunity to appeal decision in terms of National Appeal Regulations, 2014	-

8.8 MEASURES TO AVOID, REVERSE, MITIGATE, OR MANAGE IDENTIFIED IMPACTS

A draft EMPr will be compiled and included as an appendix to the EIA Report. The EMPr will be structured in terms of Appendix 4 to the EIA Regulations 2014 (as amended). The EMPr will provide recommendations on how to establish, operate, maintain, and close the proposed project throughout all relevant phases of the project activities. The aim of the EMPr will be to ensure that the project activities are managed to avoid or reduce potential negative environmental impacts and enhance potential positive environmental impacts. The EMPr will detail the impact management objectives, outcomes and actions as required, the responsibility for implementation and the schedule and timeframe. Requirements for monitoring of

environmental aspects, as well as compliance monitoring and reporting, will also be detailed. The EMPr will also include the required environmental awareness plan for the construction phase.

If approved by the relevant authorities, the provisions of the EMPr would be legally binding on the project applicant and all its contractors and suppliers.



Stuart-Heather Clark
(Registered EAP)

RECORD OF REPORT DISTRIBUTION

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OFFICES

South Africa

CAPE TOWN

T: +27 21 461 1118

JOHANNESBURG

T: +27 11 467 0945

DURBAN

T: +27 11 467 0945

Ghana

ACCRA

T: +233 24 243 9716

Namibia

WINDHOEK

T: + 264 61 231 287

