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# 2017

**DRAFT REPORT FOR THE APPLICATION FOR A SUBSTANTIVE  
AMENDMENT TO THE ENVIRONMENTAL AUTHORIZATION ISSUED FOR  
THE CONSTRUCTION OF THE ESKOM KUDU INTEGRATION PROJECT  
400KV TRANSMISSION LINE IN THE NORTHERN AND WESTERN CAPE  
PROVINCES**

**DEA REF: 12/12/20/720/AM3**

**November 2017**

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"From the world we live to the world we seek"




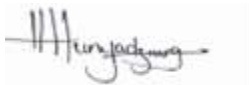
*"From the world we live to the world we seek"*

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## LIST OF ACRONYMS AND ABBREVIATIONS

<b>DEA</b>	Department of Environmental Affairs
<b>EA</b>	Environmental Authorisation
<b>EAP</b>	Environmental Assessment Practitioner
<b>EIA</b>	Environmental Impact Assessment
<b>EMPr</b>	Environmental Management Programme
<b>GCFR</b>	Greater Cape Floristic Region
<b>I&amp;APs</b>	Interested and Affected Parties
<b>NEMA</b>	National Environmental Management Act, 1998 (Act 108 of 1998)
<b>SAHRA</b>	South African Heritage Resources Agency

## 1. INTRODUCTION

Eskom Holdings SOC Limited (hereafter referred to as Eskom) is applying for an amendment of the Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and 2014 Environmental Impact Assessment (EIA) Regulations for the approved approximately 390km 400kV transmission line known as the Kudu Integration Project which runs from Oranjemund substation in the Northern Cape to Juno substation near Vredendal in the Western. The proposed amendment entails change of offset site from the approved Orange River Mouth Ramsar site to the eastern portion of Vyftienmyl se Berg, east of Port Nolloth in the Northern Cape Province.

Consequently, Nsovo Environmental Consulting was appointed by Eskom to undertake the requisite application for amendment of the EA for the proposed project in accordance with the EIA Regulations of December 2014.

## 2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nsovo Environmental Consulting has been appointed by Eskom Holdings SOC Limited as the EAP for the proposed project and meets the general requirements as stipulated in the EIA Regulation 13 (1) of 2014 as amended. Nsovo is:

- Independent and Objective;
- Has expertise in conducting EIA's;
- Takes into account all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

**Table 1: Details of the Environmental Assessment Practitioner (EAP)**

<b>Name of Company</b>	Nsovo Environmental Consulting
<b>Person Responsible</b>	Masala Mahumela
<b>Professional Registration</b>	South African Council for Natural Scientific Professions (SACNASP)
<b>Postal Address</b>	P/Bag x29 Postnet Suite 697

	Gallo Manor 2052
<b>Telephone Number</b>	011 041 3689
<b>Fax Number</b>	086 602 8821
<b>Email</b>	<a href="mailto:masala.mahumela@nsovo.co.za">masala.mahumela@nsovo.co.za</a>
<b>Qualifications &amp; Experience</b>	B.Sc. Honours Environmental Management <b>9 years of experience</b>
<b>Project Related Expertise</b>	<p>In terms of project related expertise, the EAP has completed the following projects:</p> <ul style="list-style-type: none"> <li>• Basic Assessment for the proposed deviation of the Eskom Juno-Gromis 400kV transmission line in the Northern and Western Cape Provinces.</li> <li>• Construction and Operation Environmental Management Programme for the proposed Eskom Juno - Gromis 400kV transmission line in the Northern and Western Cape Provinces.</li> <li>• Basic Environmental Assessment for the Vaal River water pipeline for AngloGold Ashanti Mine's Vaal River Operations (North West Province, South Africa).</li> <li>• Environmental Impact Assessment (EIA) for Eskom's Isundu-Mbewu 400kV transmission powerlines in KwaZulu-Natal (KwaZulu-Natal Province, South Africa)</li> <li>• Basic Environmental Assessment for the Mponeng South return water dams and pipeline (Gauteng Province, South Africa).</li> </ul>

### 3. DESCRIPTION OF LOCALITY AND THE PROPERTY ON WHICH THE ACTIVITY IS TO BE UNDERTAKEN AND LOCATION OF ACTIVITY ON THE PROPERTY

This section provides a description of the location of the proposed development.

#### 3.1 LOCALITY OF THE PROPOSED PROJECT

The approved 400kV transmission power line traverses the Northern and Western Cape Provinces, however, the proposed offset will be undertaken on the section of the power line which falls within the Northern Cape Province. **Figure 1** below depicts the proposed study area at a scale of 1:50 000. Refer to **Appendix A** for the locality and sensitivity maps.



Figure 1: Locality map of the project

### 3.1.1 PROVINCE AND PROVINCIAL BOUNDARIES

The proposed development will be undertaken in the eastern portion of Vyftienmyl se Berg, east of Port Nolloth in the Northern Cape Province which is bordered by the Western Cape Province, North West Province as well as Namibia.

### 3.1.2 MUNICIPALITY

The proposed project is located within the jurisdiction of Richtersveld Local Municipality which is under the Namakwa District Municipality.

### 3.1.3 MUNICIPAL WARDS

The proposed project is situated within Ward 3 of the Richtersveld Local Municipality.

### 3.1.4 AFFECTED PROPERTIES

The proposed new offset site is located on Farm Oograbies 148 Portion 2. A list of properties affected by the power line is attached as **Appendix B**.

## 3.2 SURROUNDING LAND USES

The area is mostly surrounded by farms that are inactive. The proposed offset site is located adjacent to the Richtersveld National Park and approximately 25Km from the Namakwa National Park. There are no residential areas located within the immediate vicinity of the proposed offset site; however, the proposed eastern portion of Vyftienmyl se Berg offset site is located approximately 22km from the town of Port Nolloth.

## 3.3 ROAD NETWORK

The primary access to the proposed offset site is the R382; however, farm roads also exist within the proximity of the proposed site.

#### **4. DESCRIPTION OF THE SCOPE PROPOSED ACTIVITIES**

This section provides the description of the proposed activities which include the scope of the proposed development.

##### **4.1 BACKGROUND AND THE PROPOSED SCOPE OF WORK**

The power supply to the greater Cape area is mostly provided by the coal-fired power stations on the Highveld, mainly in Mpumalanga. As a result, the transmission network from Mpumalanga to the Cape has grown over the years as demand has increased. Much of this network is now over two decades old and is approaching its peak operational capacity.

The Kudu Integration Project was originally designed and developed to connect the 800MW Kudu Closed Circuit Gas Turbine (CCGT) power station at Oranjemund in Namibia to the Eskom National Grid, where power would be sourced and imported into South Africa. The Kudu gas field is present just off the coast close to the Oranjemund in Namibia. The project would entail construction of a 400kV power line from Namibia to Oranjemund substation south of the Namibian border close to the town of Alexander Bay and the construction of a 400kV power line in South Africa from Oranjemund substation via Gromis substation near Kleinzee to the Juno substation near Vredendal where the power would be incorporated into the Eskom National Grid as part of the Cape strengthening project.

The Environmental Impact Assessment (EIA) for the Kudu Integration Project was commissioned and it entailed the construction of approximately 390km 400kV transmission power line in terms of the Environment Conservation Act 1989 (Act No. 73 of 1989). The study presented various alternatives and included a number of specialist studies, as a result the Department of Environmental Affairs (DEA) issued a Record of Decision (RoD) currently known as Environmental Authorisation (EA) on 6 November 2007 under reference number 12/12/20/720. Further, extensions for this EA were applied for and granted on 22 September 2011 and 20 March 2014 (refer to **Appendix C** for copies of the EA and subsequent extensions).

Subsequent to the EA issued on 6 November 2007, the negotiation process with the affected landowners along the approved corridor commenced and was concluded with recommendations from the affected landowners. The landowners raised concerns and several issues regarding the approved corridor and the proposed alignment within the corridor; following which they recommended deviations along specific portions of the line. The Basic Assessment process for deviations was undertaken and the DEA issued the EA on 9 May 2017 under reference number 14/12/16/3/3/1/1679, refer to **Appendix D** for copy of the EA.

This specific application entails proposed amendment of condition 3.2.15 of the EA issued on 6 November 2007 (12/12/20/720) which states that *“an offset ratio of 1ha:10-20ha must be considered because of the uniqueness of the vegetation that will be impacted on in the northernmost section (Orangemund - Gromis). This offset must be linked to the Orange River Mouth Ramsar site, which is in the process of being proclaimed a protected area (letter from Department of Tourism, Environment and Conservation, dated 28 March 2007)”*.

#### 4.2 LISTED ACTIVITIES APPLICABLE TO THE PROJECT

The proposed project entails change of offset site from the approved Orange River Mouth Ramsar site to the proposed eastern portion of Vyftienmyl se Berg, East of Port Nolloth. Subsequently, the proposed amendment triggers Part 2 Amendment Process as outlined in Section 31 of EIA Regulations of 2014.

**Table 2: Activity triggering Part 2 Amendment Process**

Applicable Regulation	Activity/Project description
<p><b><u>GN R. 326 Section 31:</u></b></p> <p>An environmental authorization may be amended by following the process prescribed in this part if the amendment will result in a change to the scope of a valid environmental authorization where such change will result in an increased level or change in the nature of impact where such level or change in nature of impact was not –</p> <p>(a) assessed and included in the initial application</p>	<p>The proposed project entails change of offset site from the approved Orange River Mouth Ramsar site to the proposed eastern portion of Vyftienmyl se Berg, East of Port Nolloth.</p>

Applicable Regulation	Activity/Project description
<p>for environmental authorization;</p> <p>(b) taken into consideration in the initial environmental authorization;</p> <p>And the change does not, on its own, constitute a listed or specified activity.</p>	

## 5. APPLICABLE LEGISLATION AND GUIDELINES

The EIA Regulation of December 2017 as amended, **Appendix 1**, Section 1(e) requires description of applicable legislations in the Basic Assessment Report. Therefore, this section lists and describes the legislations applicable to the proposed development as indicated in **Table 3** below.

**Table 3: Legislation pertaining to the proposed project**

Aspect	Relevant Legislation	Brief Description
<p>Environment</p>	<ul style="list-style-type: none"> <li>• National Environmental Management: Act 1998, (Act No. 107 of 1998) as amended.</li> <li>• Environmental Impact Assessment Regulations, April 2017</li> </ul>	<ul style="list-style-type: none"> <li>• The overarching principles of sound environmental responsibility are reflected in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) apply to all listed projects. Construction and operation of activities should be conducted in line with the generally accepted principles of sustainable development, integrating social, economic and environmental factors.</li> </ul> <p>The amendment process followed is in compliance with the NEMA and the Environmental Impact Assessment Regulations of December 2014 (GN R 982, 983, 984 and 985) as amended in April 2017.</p> <p>The proposed amendment process triggers Part</p>



Aspect	Relevant Legislation	Brief Description
		<p>2 process of the EIA Regulations of 2017 as defined by NEMA. This is the process followed when there is a change of scope in an authorised project and requires Authorisation. Table 2 above includes the Listed Activities triggered.</p>
Biodiversity	<ul style="list-style-type: none"> <li>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</li> </ul>	<p>The purpose of the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.</p>
Protected Areas	<ul style="list-style-type: none"> <li>National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)</li> </ul>	<p>The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.</p>
Heritage Resources	<ul style="list-style-type: none"> <li>National Heritage Resources Act, 1999 (Act No. 25 of 1999)</li> </ul>	<p>The National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered</p>

Aspect	Relevant Legislation	Brief Description
		by the South African Heritage Resources Agency (SAHRA).
Human	The Constitution of South Africa, 1996 (Act No. 108 of 1996	<p>The Constitution of South Africa, 1996 (Act No. 108 of 1996) provides for an environmental right (contained in the Bill of Rights, Chapter 2). The State is obliged “to respect, protect, promote and fulfil the social, economic and environmental rights of everyone...”</p> <p>The environmental right states that:  “Everyone has the right -  a) To an environment that is not harmful to their health or well-being; and  b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -</p> <ul style="list-style-type: none"> <li>• Prevent pollution and ecological degradation;</li> <li>• Promote conservation; and</li> <li>• Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”</li> </ul>
Waste	National Environmental Management: Waste Act 59 of 2008 as amended.	This act provides fundamental reform of the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for

Aspect	Relevant Legislation	Brief Description
		<p>securing ecologically sustainable development.</p> <p>This act also ensures the provision of national norms and standards for regulating the management of waste by all spheres of government. The National Environmental Management: Waste Act provides for specific waste management measures; licensing and control of waste management activities; remediation of contaminated land; compliance and enforcement; and for matters connected therewith.</p>

## 6. DESCRIPTION OF THE NEED AND DESIRABILITY OF THE PROPOSED ACTIVITY

### 6.1 MOTIVATION FOR THE DEVELOPMENT

Eskom conducted a study to determine a suitable land close to the proposed Orange River Mouth Ramsar site to comply with condition 3.2.15 of the EA, however, it has proven impractical to purchase and conserve a suitable section of land to include in the Orange River Mouth Ramsar site to act as a biodiversity offset. The area around the proposed Orange River Mouth Ramsar site is for the most part irreparably damaged beyond conservation due to mining activities, the town of Alexander Bay, the Alexander Bay airport and other activities around it.

Given the above-reasons, an alternative site was investigated with SANPARKS together with input from a botanical specialist (Mr Nick Helme) on the eastern part of Vyftienmyl se Berg, to be secured as an offset area. The Vyftienmyl se Berg is directly linked to the proclaimed Richtersveld National Park. Eskom submitted the biodiversity input to DENC following which the DENC responded with a letter supporting the proposed new offset site. Further, the DENC indicated that the Orange River Mouth Ramsar site is affected by various obstacles making it less suitable to act as an offset area, refer to letter attached as **Appendix E**.

Eskom has acquired all the servitudes except for a portion where the line crosses through the Namaqua National Park area which belongs to SANPARKS as the conditions from SANPARKS for granting servitude require Eskom to comply with two conditions in the original EA, i.e. 3.2.14 and 3.2.15. Eskom has, therefore, acquired approximately 630 of land on a portion of Farm Oograbies 148 Portion 2 (refer to **Appendix A**) from Richtersveld Local Municipality to add to the Richtersveld National Part to comply with condition 3.2.14 as agreed with SANPARKS. The DENC has alerted Eskom to condition 3.2.15 and required compliance thereto when Eskom applied for a permit for vegetation removal to facilitate construction.

Eskom is thus requesting the DEA to consider amendment of the condition as indicated above to conclude the matter and to ensure that SANPARKS grants Eskom the permission to construct the power line and apply for a servitude area through the Namaqua National Park. The servitude must be granted by the Public Works which will require the support of SANPARKS. It is critical for this right to construct to be given to Eskom to ensure the project can be completed on time.

## **7. DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ACTIVITY, SITE AND LOCATION WITHIN THE SITE**

As discussed above, Eskom conducted a study to determine a suitable land close to the proposed Orange River Mouth Ramsar site to comply with condition 3.2.15 of the EA, however, it has proven impractical to purchase and conserve a suitable section of land to include in the Orange River Mouth Ramsar site to act as a biodiversity offset and subsequently, a biodiversity specialist identified a more suitable offset site which is on the eastern portion of Vyftienmyl se Berg.

### **7.1 DETAILS OF ALTERNATIVES CONSIDERED**

#### **7.1.1 SITE ALTERNATIVES**

Eskom investigated the sites together with the South African National Parks (SANPARKS) and also obtained input from a biodiversity specialist, Mr Nick Helme, refer to **Appendix F1** for biodiversity input. During the investigation Eskom communicated with the affected stakeholders including the DEA, Northern

Cape Department of Environment and Nature Conservation (DENC) and SANPARKS; refer to the Minutes of Meeting attached as **Appendix G**.

In considering the best Alternative offset site, two sites were considered and these are:

- Grootderm and Oranjemund area, expanding the existing RAMSAR site along the Orange River; and
- The eastern portion of Vyftienmyl se Berg, east of Port Nolloth which is approximately 300ha.

#### 7.1.2 NO-GO ALTERNATIVE

In accordance with GN R.982, consideration must be given to the option not to act. This option is usually considered when the proposed development is envisaged to have significant negative environmental impacts that mitigation measures cannot ameliorate the identified impacts effectively. The no-go alternative would be the option of continuing with the offset at the Orange River Mouth Ramsar site which is for the most part irreparably damaged beyond conservation due to the mining activities, the town of Alexander Bay, the Alexander Bay Air Port and other activities around it, further, land claims are also associated with this property.

## 8. PUBLIC PARTICIPATION PROCESS

The Regulations require that Organs of State together with Interested and Affected Parties (I&APs) and the public be informed of the application for Amendment of Environmental Authorisation (EA) and be afforded an opportunity to comment on the application.

Public Participation Process (PPP) is any process that involves the public in problem solving and decision-making and it forms an integral part of the Basic assessment and EIA process. The PPP provides people who may be interested in or affected by the proposed development, with an opportunity to provide comments and to raise issues or concern, or to make suggestions that may result in enhanced benefits for the project. The primary purpose of the PPP report is as follows:

- To outline the PPP that was undertaken;
- To synthesise the comments and issues raised by the key stakeholders, I&APs and
- To ensure that the EIA process fully address the issues and concerns raised, if any.

Chapter 6, Regulation 39 through 44, of the April 2017 EIA Regulations stipulates the manner in which the PPP should be conducted as well as the minimum requirements for a compliant process. These requirements include but not limited to:

**(a) Fixing a notice board at or on the fence of-**

- (i) The site where the activity to which the application relates is or is to be undertaken; and
- (ii) A place conspicuous to the public at the boundary of the site

**(b) Giving written notice to-**

- (i) The occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
- (ii) The owners or persons in control of that land occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;
- (iii) The municipal councillor of the ward in which the site and alternative site is situated and any organisation of rate payers that represent the community in the area;
- (iv) The municipality which has jurisdiction in the area;
- (v) Any organ of state having jurisdiction in respect of any aspect of the activity; and
- (vi) Any other party as required by the competent authority.

**(c) Placing an advertisement in-**

- (i) One of the local Newspaper within or around the proposed site; or
- (ii) Any official gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of the Regulations.

### 8.1.1 PUBLIC PARTICIPATION PRINCIPLES

The principle of the Public Participation holds that those who are affected by a decision have the right to be involved in the decision-making process (i.e. the public's contribution will influence the decision). One of the primary objectives of conducting the PPP is to provide interested and affected parties with an opportunity to

express their concerns and views on issues relating to the proposed project. The principles of public participation are to ensure that the PPP:

- Communicates the interests of and meet the process needs of all participants.
- Seek to facilitate the involvement of those potentially affected.
- Involves participants in defining how they participate.
- Is as inclusive and transparent as possible, it must be conducted in line with the requirements of regulation 39 - 44 of the December 2014 EIA Regulations as amended.

### 8.1.2 APPROACH AND METHODOLOGY

The Public Participation approach adopted in this process is in line with the processes contemplated in Regulations 39 - 44 of the EIA Regulations of December 2014 as amended, in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), which provides that Interested and Affected Parties (I&APs) must be notified and is as follows:

### 8.1.3 IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES

I&APs identified include pre-identified stakeholders (government department), landowners and the general public. Notifications and request for comments will be submitted to the following key stakeholders:

- National Department of Environmental Affairs;
- Western Cape Department of Environmental Affairs and Development Planning;
- Northern Cape Department of Environment and Nature Conservation;
- Northern Cape Department of Water and Sanitation
- Northern Cape Department of Roads and Public Works
- Northern Cape Department of Agriculture and Rural Development
- Northern Cape Department of Roads and Transport
- Kamiesberg Local Municipality
- Richtersveld Local Municipality
- South African Heritage Resources Agency

- National Department of Water and Sanitation
- Matzikama Local Municipality
- Western Cape Department of Water and Sanitation
- Western Cape Department of Transport and Public Works
- Western Cape Department of Agriculture

The Organs of State, landowners, stakeholders and general I&APs will be notified of the availability of this report and further afforded a review and comment period from 22 November 2017 to 18 January 2018. The report will be made available at the following locations:

**Table 4: Places where the draft EA Amendment Report will be made available for review**

Venue	Contact Person	Contact details
Port Nolloth Public Library	The librarian	Harbour St, Port Nolloth, 8280 Tel: 027 851 1106 Fax: 027 851 8366 Email: <a href="mailto:jkamies@pancmail.ncape.gov.za">jkamies@pancmail.ncape.gov.za</a>
Alexander Bay Public Library	The librarian	Oranjeweg, Alexander Bay, 8290 Tel: 027 831 1424 Fax: 027 831 1406 Email: <a href="mailto:jkamies@pancmail.ncape.gov.za">jkamies@pancmail.ncape.gov.za</a>
Lutzville Public Library	Ms. Lizelle Burger	7 Du Toit Street, Lutzville, 8165 Tel: 027 201 3443 Fax: 027 217 1746 Email: <a href="mailto:lutz-biblioteek@matzikama.co.za">lutz-biblioteek@matzikama.co.za</a> or <a href="mailto:lizelleburger@hotmail.co.za">lizelleburger@hotmail.co.za</a>
Vredendal public library	The librarian	37 Kerk Road, Vredendal 8160 Tel: 027 213 1045
Nsovo	Environmental Rejoice Aphane	Tel: 011 041 3689



Venue	Contact Person	Contact details
Consulting		Email: <a href="mailto:rejoice@nsovo.co.za">rejoice@nsovo.co.za</a> or <a href="mailto:admin@nsovo.co.za">admin@nsovo.co.za</a> <a href="http://www.nsovo.co.za">www.nsovo.co.za</a>

#### 8.1.4 PUBLIC PARTICIPATION DATABASE

Regulation 42 of GN R. 326 requires a register of I&APs be kept by the public participation practitioner. In fulfilment of this requirement an I&AP database has been opened and it includes pre-identified I&AP contact details. Further, this register will be updated throughout the project cycle.

#### 8.1.5 SITE NOTICES

A2 site notices will be fixed at various conspicuous locations within and around the proposed project area including the Port Nolloth Public Library, Alexander Bay Public Library and Vredendal public library and Lutzville Public Library. The purpose of site notices will be to inform stakeholders and the public of the proposed project, notify them of the availability of the Draft EA Amendment Report and to invite them to comment or raise any issues pertaining to the proposed project. Further, site notices will be distributed to the I&APs within 100m from the proposed site.

#### 8.1.6 NOTIFICATION OF SURROUNDING LAND OWNERS / OCCUPIERS BY REGISTERED MAIL

Notification letter will be re posted via registered mail to stakeholders. The purpose of the notices will be to inform stakeholders and the public of the proposed project, notify them of the availability of the Draft EA Amendment Report and to invite them to comment or raise any issues pertaining to the proposed project.

#### 8.1.7 PLACEMENT OF ADVERTISEMENT IN THE LOCAL NEWSPAPER

An advertisement will be placed on a local newspaper for the purposes indicated on Section 8.1.6 and 8.1.7 above.

### 9. DESCRIPTION OF THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES FOCUSING ON THE GEOGRAPHICAL, PHYSICAL, BIOLOGICAL, SOCIAL, HERITAGE AND CULTURAL ASPECTS

This section outlines the socio-economic and biophysical environment that could be affected by the proposed development.

#### 9.1.1 SOCIO-ECONOMIC DESCRIPTION

The municipality is named after Reverend W. Richter, a Dutch missionary of the 20<sup>th</sup> century who opened a mission station in Kuboes. The Richtersveld is a unique landscape surrounded by a variety of contrasts. In Port Nolloth is the ocean, at Alexander Bay there is the Orange River, and at Lekkersing and Eksteensfontein there is underground water that is a little brackish. Rainfall is minimal and water is a scarce commodity, yet the vast plains, which are considered a special place by some, are still a very beautiful region with unique characteristics that attract thousands of tourists. The Richtersveld is a conservation area. The main economic sectors are mining, agriculture, fishing and tourism. The area includes a number of big rural areas, as well as the following towns: Port Nolloth, Alexanderbay, Sanddrift, Kuboes, Eksteenfontein and Lekkersing.

The Richtersveld is a unique landscape surrounded by a variety of contrasts. It is a conservation area. Rainfall is minimal and water is a scarce commodity, yet the vast plains, which are considered a special place by some, are still a very beautiful region with unique characteristics that attract thousands of tourists. In Port Nolloth there is the ocean, at Alexander Bay there is the Orange River, and at Lekkersing and Eksteenfontein there is underground water that is a little brackish. The towns in Richtersveld include Alexander Bay, Eksteenfontein, Kuboes, Lekkersing, Port Nolloth and Sanddrift. The main economic sectors are: mining, agriculture, fishing, tourism.

#### 9.1.2 BIODIVERSITY

The study area lies within the Extra Cape Subregion (CCR) of the Greater Cape Floristic Region (GCFR; Manning & Goldblatt 2012). The study area is part of the Succulent Karoo biome and is located within the Namaqualand Sandveld and Southern Namib Desert bioregions (a finer scale classification; Mucina & Rutherford 2006). The GCFR is one of only six Floristic Regions in the world, and it is also by far the smallest floristic region. The Extra Cape Subregion occupies only 0.1% of the world's land surface, and supports about 4000 plant species, almost one quarter of all the plant species in southern Africa, and some

10% of the plant species in sub-Saharan Africa. About 78% of all the species in the region do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). It should thus be clear that the region is a major national and global conservation priority, and is quite unlike anywhere else in the country in terms of the number of threatened plant species. Developments in this area thus need to take this into account (Helme, 2017).

### 9.1.3 CLIMATE CHANGE

Global climate change is possibly the greatest environmental challenge facing the world in this century. Although often referred to as 'global warming', global climate change is more about serious disruptions of the entire world's weather and climate patterns. This includes the impacts on rainfall, extreme weather events and sea level rise, rather than just moderate temperature increases. According to the international studies undertaken by NFCC the impacts of a global average temperature rise of between 2.5°C and 3°C from the 1990 levels are countless, and in South Africa it is estimated that agriculture, tourism and conservation will be the areas which will feel the effects the most. Richtersveld is mainly an agricultural area and the impact of climate change affects the production of seasonal crops, marine life and water resources. The climate change impact mitigation strategies proposed within the Green Paper (Government Gazette Notice no 1083 of 2010).

### 9.1.4 DEMOGRAPHIC ANALYSIS

The Richtersveld Municipality Wards has 4 Wards which include the following towns & settlements:

**Table 5: Wards and towns & settlements in Richtersveld Local Municipality**

Ward Area	Towns & Settlements
1	Kuboes, Eksteenfontein & Lekkersing
2	Alexanderbay, Beauvallon & Sanddrift
3	Sizamile and part of town, Nollothville
4	McDougallsbay, Parts of Nollothville and town including the central business section.

### 9.1.5 ECONOMIC INFORMATION

Port Nolloth is the main economic centre of the Municipality and is also the town where the head office of the Richtersveld Municipality is situated. Richtersveld Municipality had a total population of 11982 in 2013. Similar to other rural municipalities, Richtersveld Municipality has also experiences common challenges such as skew patterns of wealth distribution, relatively high levels of unemployment and crime.

The economically active population is classified as individuals aged 15 – 65. The figures on Table 6 below indicate that Richtersveld Municipality has a fairly young population. A large number of youth (age 0-14) are dependent on the EAP which will ultimately have an effect on education and job creation.

**Table 6: Economically active population within Richtersveld Municipality**

Employment Status	Total
Employed	4627
Unemployed	1060
Discouraged Work Seeker	211
Not Economically Active	2510

### 9.1.6 INCOME DISTRIBUTION

The table below depicts the income levels within the municipal area.

**Table 7: Income distribution**

Income	Percentage
None income	9.7%
R1 - R4,800	2.1%
R4,801 - R9,600	6.1%
R9,601 - R19,600	14.1%
R19,601 - R38,200	17,7%
R38,201 - R76,4000	19,3%

Income	Percentage
R76,401 - R153,800	16,4%
R153,801 - R307,600	10,2%
R307,601 - R614,400	3,3%
R614,001 - R1,228,800	0,5%
R1,228,801 - R2,457,600	0,2%
R2,457,601+	0%

### 9.1.7 WATER SERVICES

Richtersveld Municipality is an accredited Water Services Authority in terms of the National Water Act (Act 36 of 1998) and provides potable water to Lekkersing, Eksteenfontein and Port Nolloth. Transhex Operations Ltd provides fresh water for Sanddrift and Kuboes. Although water is supplied by these mining houses no formal Service Level Agreements are intact. All towns do not have sufficient water sources except Alexanderbay, Kuboes and Sanddrift. In Port Nolloth where the water source is under ever increasing pressure due to numerous residential developments and holidaymakers, there is a bidding process underway to build a 1,5mega litre desalination plant in conjunction with DWA & Sanitation.

Sufficient water sources and proper infrastructure for water provision is a fundamental requirement for economic growth and development facilitation. Diamond mining can be regarded is one of the largest industrial water users in the Richtersveld municipal area but the main water users still remain households for domestic purposes, schools and agricultural activities for irrigation purposes. Domestic household usage normally peaks in the December holidays in Port Nolloth which is becoming an increasing challenge for the municipality. All water infrastructure needs to accommodate this peak period. It has now become a norm over the last couple of years to institute and strictly enforce water restrictions especially in this coastal town.

### 9.1.8 EDUCATION

Education levels have a major bearing on the quality of life. The inability of an individual to perform certain basic functions due to illiteracy is also part of elements that define human poverty. Low educational levels are likely to push individuals to unemployment and to low paying jobs. Low educational levels also limit the

ability of an individual to learn new skills, to be trained and developed. There was an improvement on the matric results of 2016 which is very commendable and a clear indication of partnership between parents, teachers and learners.

#### 9.1.9 TOURISM AND HERITAGE

Richtersveld has the potential to become the destination of choice for tourists to Northern Cape and South Africa, especially for those tourists who desire the country ambience. The warm temperatures, summer rainfall, scenic beauty and environmental significance of the area make the climate excellent for tourism in Richtersveld Municipality. Tourism assets within the Richtersveld Municipality include the following assets and heritage sites but not limited to:

- Richtersveld Word Heritage sites;
- Wondergat;
- Cornells Kop;
- Unspoiled beaches;
- Ai-Ais/Richtersveld Transfrontier Park.

In addition, the Richtersveld area is recognised for its scenic and natural landscapes. The area provides an ideal opportunity for eco-tourism and outdoor/adventure tourism initiatives. Tourism related activities which can be encouraged in these areas include the following:

- Establishment of cultural villages;
- Establishment of viewing points/decks;
- Craft centres;
- Hiking;
- Mountain Biking; and
- River rafting etc.

The above-mentioned tourism activities offer tourists an ideal opportunity to experience the attractive landscape found within the Richtersveld Municipality. However, for such activities to occur, a proper marketing strategy is essential. This emphasises the need for the municipality to develop an overall tourism strategy for the municipal wide area supported by tour operators and captains of the industry.

## 10. METHODOLOGY FOR ASSESSING SIGNIFICANCE OF POTENTIAL IMPACTS

The assessment of impacts is largely based on the Department of Environmental Affairs and Tourism's (1998) Guideline Document: Environmental Impact Assessment Regulations. The assessment will consider impacts arising from the proposed activities of the project both before and after the implementation of appropriate mitigation measures.

The impacts are assessed according to the criteria outlined in this section. Each issue is ranked according to extent, duration, magnitude (intensity) and probability. From these criteria, a significance rating is obtained, the method and formula is described below. Where possible, mitigation recommendations have been made and are presented in tabular form.

The criteria given in the tables below will be used to conduct the evaluation. The nature of each impact will be assessed and described in relation to the extent, duration, intensity, significance and probability of occurrence attached to it.

**Table 8: Methodology used in determining the significance of potential environmental impacts**

<p><b>Status of Impact</b></p> <p>The impacts are assessed as either having a: negative effect (i.e. at a `cost' to the environment), positive effect (i.e. a `benefit' to the environment), or Neutral effect on the environment.</p> <p><b>Extent of the Impact</b></p> <p>(1) Site (site only), (2) Local (site boundary and immediate surrounds), (3) Regional (within the City of Johannesburg), (4) National, or (5) International.</p> <p><b>Duration of the Impact</b></p> <p>The length that the impact will last for is described as either: (1) immediate (&lt;1 year) (2) short term (1-5 years), (3) medium term (5-15 years),</p>
---

- (4) long term (ceases after the operational life span of the project),
- (5) Permanent.

### **Magnitude of the Impact**

The intensity or severity of the impacts is indicated as either:

- (0) none,
- (2) Minor,
- (4) Low,
- (6) Moderate (environmental functions altered but continue),
- (8) High (environmental functions temporarily cease), or
- (10) Very high / Unsure (environmental functions permanently cease).

### **Probability of Occurrence**

The likelihood of the impact actually occurring is indicated as either:

- (0) None (the impact will not occur),
- (1) improbable (probability very low due to design or experience)
- (2) low probability (unlikely to occur),
- (3) medium probability (distinct probability that the impact will occur),
- (4) high probability (most likely to occur), or
- (5) Definite.

### **Significance of the Impact**

Based on the information contained in the points above, the potential impacts are assigned a significance rating (**S**). This rating is formulated by adding the sum of the numbers assigned to extent (**E**), duration (**D**) and magnitude (**M**) and multiplying this sum by the probability (**P**) of the impact.

$$S=(E+D+M)P$$

### **The significance ratings are given below**

- (<30) low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- (30-60) medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- (>60) high (i.e. where the impact must have an influence on the decision process to develop in the area).

## **11. DESCRIPTION OF THE ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS INCLUDING CUMULATIVE IMPACTS IDENTIFIED**

This section describes the potential impacts that the proposed project may pose on the receiving environment. Impacts associated with the relevant environmental components within the study area as



identified, have been assessed based on the consultant's opinion in consideration of the site and previous experience on similar undertakings as well as consultation with specialist studies.

## 11.1 POTENTIAL ENVIRONMENTAL IMPACTS IDENTIFIED

The negative environmental impacts were assessed during the Environmental Impact Assessment process of the project undertaken in 2006. Further, applicable input from specialists has been sought in October 2017 and this include Biodiversity, Heritage as well as Avifauna; their input is included herein (refer to **Appendix F2**).

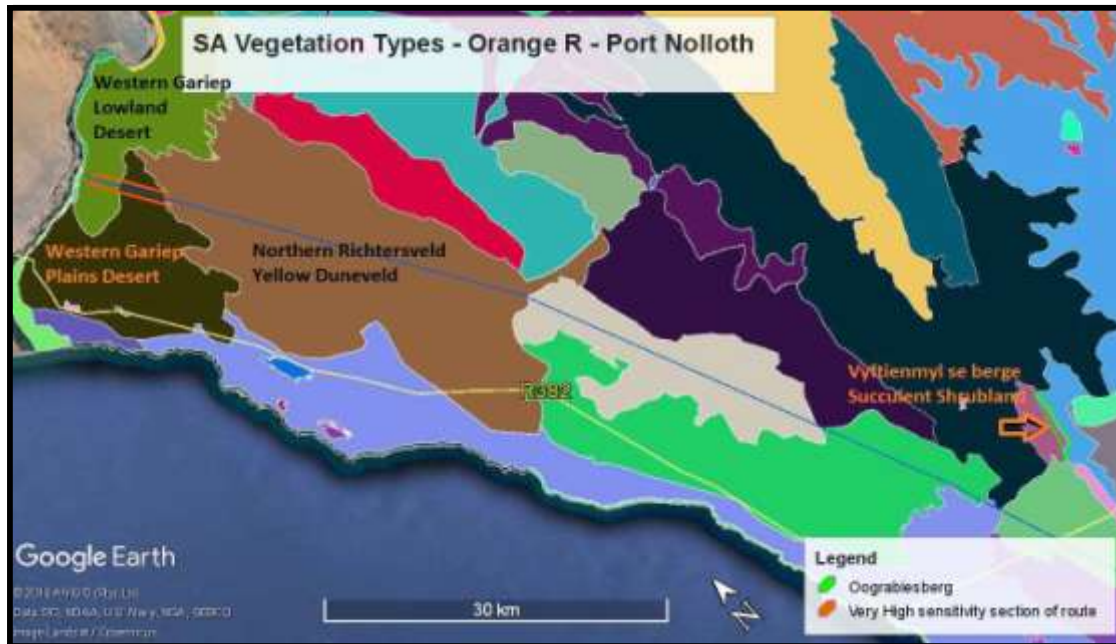
Below is the description of the environmental impacts associated with the amendment.

### 11.1.1 BIODIVERSITY:

The Biodiversity input was contributed by Mr Nick Helme of Nick Helme Botanical Surveys.

Two sites were assessed in considering the suitable offset sites and these are Grootderm and Oranjemund area, expanding the existing Ramsar site along the Orange River and Vyftienmyl se Berg and are discussed below.

The Grootderm area is largely flat and windswept, and characterised by gravel and sand, overlying various shallowly buried rocks, including schists and limestone, whilst Vyftienmyl se Berg is a large quartzite outcrop with very little deep sand or gravel. The latter supports a vegetation type that is endemic to this single mountain, and is renowned as a "fog oasis", whereas the key area along the route south of the substation supports Western Gariep Lowland Desert and Western Gariep Plains Desert (see Figure 2 below) with lower fog incidence than Vyftienmyl, and the two areas have very little in common from a vegetation perspective.



**Figure 2: Extract of the SA vegetation map of the area, showing the powerline route (blue line) between the Orange River and the road east of Port Nolloth (yellow line at bottom right), as well as the Very High sensitivity area south of the Orange River that was the primary trigger for the need for the biodiversity offset.**

Although topographically less diverse the Grootderm area supports what would appear to be an even longer list of plant rarities, including: *Portulacaria pygmaea* (EN; near endemic); *Crassula brevifolia* var *psammophila* (VU; near endemic), *Crassula plegmatoides* (VU); *C. sladenii* (EN), *Tylecodon schaeferianus* (VU); *Euphorbia melanohydrata* (EN; near endemic); *Monsonia multifida* (EN; near endemic); *Bulbine ophiophylla* (EN; near endemic); *Phyllopodium namaense* (VU); *P. hispidulum* (EN); *Strumaria bidentata* (CR; endemic); *Calobota acanthoclada* (EN), *Anacampseros gariepensis* (EN; endemic), *Cheiridopsis brownii* (EN; near endemic), *Rhysolobium dumosum* (EN), *Astridia citrina* (EN), *Cynanchum meyeri* (VU), *Euphorbia herrei* (CR; endemic), *Aridaria vespertina* (EN), *Babiana namaquensis* (VU) and *Othonna furcata* (near endemic). It should also be noted that the famous Alexander Bay lichen fields (just east of the main road) are still completely unprotected, and very vulnerable to damage or loss.

A portion of the large Grootderm farm (about 4000ha) would be a suitable consideration for an offset in terms of biodiversity value (being a recognised priority for conservation), but it is not adjacent to the

RAMSAR site and lies to the east of the site, separated by State Land about 4km wide.

Further, the Grootderm property is apparently subject to a land claim (Eskom -pers. comm.), which makes negotiation for an offset or purchase at this stage difficult (but presumably not impossible given that a servitude over the land has been obtained), but it should be noted that it does not necessarily rule out the future option of conservation orientated land use on the property, should the owners be willing. However, it must be noted that Eskom has opted not to go for this site due to the land claims as stated above.

The proposed offset on the eastern side of the Vyftienmyl se Berg is approximately 300ha in extent, and is thus within the recommended offset size range, using the servitude area, and is significantly bigger than the recommended offset area (Orange River Mouth RAMSAR site) if one uses the total likely development footprint with SANPARKS land as the base factor. The size of the proposed offset area is thus strongly supported from a botanical perspective.

The Vyftienmyl se Berg has a much higher (possibly more than ten times) biomass than the Grootderm area, due to the rocky, quartzite terrain, the far greater topographic diversity and the fog trapping effects that radically supplement the available moisture. Not surprisingly the area also has a higher overall plant diversity, possibly as much as twice the overall diversity of the Grootderm area. All the known rarities on the massif are succulents, and include *Conophytum jucundum* ssp *marlothii* (near endemic), *C. bolusiae* ssp. *bolusiae* (VU; endemic), *C. fraternum* (Rare), *C. francoiseae* (VU; endemic), *C. obscurum* ssp *barbatum* (VU), *C. stephanii* ssp. *stephanii* (VU; endemic), *Mitrophyllum abbreviatum* (VU; endemic), *M. grande* (near endemic), *Namaquanthus vanheerdei* (VU), *Schlechteranthus maximiliani* (VU), *Tylecodon bodleyae* (CR), *Bulbine lavrani* (VU; incl. by some in *B. dissimilis*), *B. torsiva* (DDT: near endemic), *B. vitrea* (VU; incl. in *B. quartzicola* by some), *Anacampseros scopata* (Rare; endemic), *Gasteria pillansii* var *hallii* (EN). Numerous other rarities are shared with some of the adjacent Richtersveld rocky hills.

Although Eskom dismissed the Grootderm area it has been assessed in comparison with the Vyftienmyl se Berg site and the results are indicated in the Table below:

**Table 9: Basic comparison of the proposed offsets**

12. Aspect	13. Grootderm/RAMSAR	14. Vyftienmyl se Berg
15. Total area of offset	16. Unknown,	17. Approximately 300ha
18. Level of threat to habitat in offset area	19. High	20. Low
21. Presence of threatened vegetation types	22. None	23. None
24. Contribution to achievement of habitat conservation targets	25. 10-20% of Western Gariep Plains Desert target	26. 95% of Vyftienmyl se Berg Succulent Shrubland target
27. Total number of plant Species of Conservation Concern	28. 21	29. 18
30. Likelihood of implementation of offset	31. Low	32. High

The Ramsar/Grootderm offset area would be more appropriate in terms of protecting threatened species and threatened habitat, particularly as the primary impact area (the trigger area) is within habitat types that occur only in the proposed Ramsar/Grootderm offset area and do not occur in the Vyftienmyl se Berg area. Its primary downside is that no land is currently available for conservation purchase in this area, and thus an offset in this area is unlikely to be implemented. It thus comes down to a trade-off between practicality, achievability and scientific and conservation value.

**Table 10: Comparison of the two offset proposals in terms of the botanical impact of the new power line (Oranjemund – Gromis section only)**

Overall botanical impact of powerline in Oranjemund – Gromis section	RAMSAR/Grootderm offset	With 300ha Vyftienmyl se Berg offset
33. Before Mitigation	34. Medium to High -ve	35. Medium to High -ve
36. After Mitigation	37. Low to Medium -ve	38. Medium -ve

## Recommendations

- The ideal offset scenario would be to conserve a minimum of 500ha of largely natural habitat within the vicinity of the Oranjemund substation (Grootderm farm), but due to outstanding land claims this would not appear to be feasible in the near future.
- Given the non-feasibility of an offset in the Grootderm area another location for the offset needs has been identified and this is the proposed approximately 300ha eastern portion of Vyftienmyl se Berg which is a good alternative in that it is a recognized local and regional plant conservation priority, with a high diversity of rare and localized plant species. The only issues are that it is a different vegetation type to that impacted by the powerline, and it has a much lower degree of threat.
- Given that both proposed offsets would lower the overall botanical impact of the powerline in the Oranjemund – Gromis section from an inadvisable Medium to High negative, to an acceptable Medium negative (Vyftienmyl se Berg option) or Low to Medium negative (Grootderm option) either of the offsets is acceptable from an impact assessment perspective.
- As an offset is a key requirement in terms of mitigation for the approved project the most feasible offset should thus be implemented as soon as possible, and in this instance this means the Vyftienmyl se Berg offset.

### 38.1.1 HERITAGE INPUT

The Heritage input was contributed by Mr Munyadziwa Magoma of Vhubvo Archaeoheritage Consultants.

According to the heritage specialist, although few sources were consulted, the Vyftienmyl se Berg area is known to contain heritage resources especially dating to the Stone Age and mostly in the form of flakes and cores. It is also envisaged that there might be previously unknown archaeological sites in the area.

In compliance with the National Heritage Legislature, there was no observable development activities associated with the proposed project.

It is believed that the area will not be affected at all by the proposed development or by any impact related to the proposed development. Therefore, there is no need for a full Heritage Assessment Study. In

consideration of such, it is recommended that the developer should not establish any construction site camp or roads within the proposed offset area.

Should the need arise in future to utilise the site for whatsoever reason, a Heritage Assessment Study should be commissioned. The specialist concluded that the proposed development proceeds on condition that no construction activities will occur in the offset area.

### 38.1.2 AVIFAUNA

The Avifauna input was contributed by Mr Jon Smallie of Wildskies Ecological Services.

The Avifauna specialist compared the proposed change of offset site from the Orange River Mouth Ramsar site to Vyftienmyl se Berg and highlighted the following findings:

- The offset area securement and management will not impact on avifauna negatively. Although difficult to measure, in the long term securing this land for biodiversity management will probably benefit avifauna conservation in general.
- From a purely avifaunal perspective there does not seem to be any difference between the Orange River Mouth Ramsar Site and Vyftienmyl se Berg. In terms of general environmental perspective it seems to make more sense to use the new proposed Vyftienmyl se Berg as it is less impacted and there is less uncertainty around land tenure.
- There are no changes to the Environmental Management Programme (EMPr) necessary as the result of the change in offset area.

The Avifauna specialist therefore concluded that the proposed change to the offset area will have no impact on avifauna, nor will it make any difference to the significance of the impacts previously assessed, the necessary mitigation measures or the approved EMPr.

Therefore, based on the input from Biodiversity, Heritage and Avifauna Specialists, the proposed change of offset site from the EA recommended Orange River mouth Ramsar site to Vyftienmyl se Berg site is recommended. Further, all recommendations made by the specialists must be adhered to.

### 38.2 GENERAL CUMULATIVE IMPACTS

Cumulative impacts in relation to an activity, means the past, present and reasonably foreseeable future impacts of an activity, considered together with the impacts of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities (DEA, 2014 EIA Regulations).

This section provides cumulative impacts ratings associated with the proposed project which include the waste generation, socio-economic, traffic, noise and vibration. It also outlines the mitigation measures of each rated cumulative impacts as follows:

Aspect	Corrective measures	Impact rating criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Biodiversity	No	Positive	1	5	10	5	80=High
Corrective Actions	No mitigation measures required since is a positive impact.						

### 39. CHANGES IN THE ENVIRONMENTAL MANAGEMENT PROGRAMME

The construction of the approved 400kV will continue as per the EA. further, there will be no construction of new structures at the proposed new offset site; therefore, there are no changes to the Environmental Management Programme (EMPr) necessary as the result of the change in offset area.

### 40. UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP

In undertaking the draft and final EA Amendment phases of the project the EAP will take into consideration the requirements stipulated in the EIA Regulation of April 2017, as well as other relevant Acts and Regulations. The EAP hereby confirm that with the information available at the time of preparing the BAR and the reports prepared by the specialists, the following has been taken into account in preparing this report:

- The correctness of the information provided in the report;
- The inclusion of comments and inputs from stakeholders and interested and affected parties; and
- Any information provided by the EAP to the interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.

Refer to **Appendix H** for the Declaration of the EAP.

#### **41. ENVIRONMENTAL IMPACT STATEMENT**

Eskom conducted a study to determine a suitable land close to the proposed Orange River Mouth Ramsar site to comply with condition 3.2.15 of the EA, however, it has proven impractical to purchase and conserve a suitable section of land to include in the Orange River Mouth Ramsar site to act as a biodiversity offset. The area around the proposed Orange River Mouth Ramsar site is for the most part irreparably damaged beyond conservation due to mining activities, the town of Alexander Bay, the Alexander Bay airport and other activities around it.

Given the above-reasons, an alternative site was investigated with SANPARKS together with input from a botanical specialist on the eastern part of Vyftienmyl se Berg, to be secured as an offset area. The Vyftienmyl se Berg is directly linked to the proclaimed Richtersveld National Park. Eskom submitted the biodiversity input to DENC following which the DENC responded with a letter supporting the proposed new offset site. Further, the DENC indicated that the Orange River Mouth Ramsar site is affected by various obstacles making it less suitable to act as an offset area.

The proposed eastern portion of the Vyftienmyl se Berg offset area is adjacent to the Richtersveld National Park and this is a positive impact as it will increase the area already earmarked for conservation.

A comparison of the best offset site was made and only positive impacts were noted, however, the best site for offset is the Vyftienmyl se Berg as it does not have any land claims associated with it.

#### **42. IMPACT MANAGEMENT MEASURES IDENTIFIED FROM SPECIALIST REPORTS**



Input was sought from three specialists and these included:

- Heritage;
- Avifauna; and
- Biodiversity.

Mitigation measures, proposed by specialist include the following:

- The developer should not establish any construction site camp or roads within the proposed offset area.
- Should the need arise in future to utilise the site for whatsoever reason, a Heritage Assessment Study should be commissioned. The specialist concluded that the proposed development proceeds on condition that no construction activities will occur in the offset area.

#### **43. CONCLUSIONS AND RECOMMENDATIONS**

The proposed project details change of offset site from the approved Orange River Mouth Ramsar site to the eastern portion of Vyftienmyl se Berg site. Two site alternatives were identified and these were Grootderm and Oranjemund area, expanding the existing RAMSAR site along the Orange River and the eastern portion of Vyftienmyl se Berg, east of Port Nolloth which is approximately 300ha. The preferred alternative site is the eastern portion of Vyftienmyl se Berg site as it has no land claims associated with it.

Therefore it is recommended that the wording for Condition 3.2.15 of the EA be amended to:

*An offset in the ratio of 1ha:10-20ha must be considered because of the uniqueness of the vegetation that will be impacted on in the northernmost section (Oranjemund-Gromis). This offset must be linked to a **national protected area**.*

The proposed change of offset site does not change or require any change of the EMP, however, all the recommendations made by the specialists must be adhered to.

#### **44. REFERENCES**

DEAT, 1998. A National Strategy for Integrated Environmental Management in South Africa. Compiled by Environomics

DEAT, 1998 Guideline Document: Environmental Impact Assessment Regulations

Richtersveld Local Municipality Final Integrated Development Plan: 2017-2022