

**PROPOSED
MULILO NEWCASTLE WIND POWER
WIND ENERGY FACILITY
NEWCASTLE MUNICIPALITY,
AMAJUBA DISTRICT MUNICIPALITY,
KWAZULU NATAL PROVINCE**

DFFE Reference: 14/12/16/3/3/2/2212

DRAFT

ENVIRONMENTAL MANAGEMENT PROGRAMME

Prepared for:



MULILO NEWCASTLE WIND POWER (PTY) LTD
44 Raapenberg Rd, Mowbray, Cape Town, 7700

Prepared by:



CES
EAST LONDON
39 Harewood Drive
Nahoon, East London, 5241
043 726 7809

Also in Grahamstown, Port Elizabeth, Cape Town, Johannesburg and Maputo (Mozambique)

www.cesnet.co.za | www.eoh.co.za

February 2023

This Report should be cited as follows: *Draft Environmental Management Programme: Mulilo Newcastle Wind Power Wind Energy Facility, KwaZulu Natal Province. CES. February 2023.*



ENVIRONMENTAL AND SOCIAL ADVISORY SERVICES

REPORT TITLE:

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME - MULILO NEWCASTLE WIND POWER WIND ENERGY FACILITY

REPORT VERSION:

DRAFT

NAME (CES)	RESPONSIBILITY	DATE
Dr Alan Carter	Review of Draft EMPr	February 2023
Ms Robyn Thomson	Compiling of Draft EMPr	February 2023

Copyright ©

This document contains intellectual property and propriety information that are protected by copyright in favour of Coastal and Environmental Services (Pty) Ltd (CES). The document may therefore not be reproduced, used or distributed to any third party without the prior written consent of CES. The document is prepared exclusively for submission to Mulilo Newcastle Wind Power (Pty) Ltd, and is subject to all confidentiality, copyright and trade secrets, rules intellectual property law and practices of South Africa.

DEFINITIONS

For the purposes of this Environmental Management Programme report (EMPr), terms, abbreviations and descriptions that may apply can be found at Appendix F:

TABLE OF CONTENTS

- 1. INTRODUCTION 4**
 - 1.1 LOCATION OF THE PROJECT 4
 - 1.2 PROPOSED ACTIVITY..... 5
 - 1.3 OBJECTIVES OF THE EMPR 8
 - 1.4 STRUCTURE AND FUNCTION OF THE EMPR 8
 - 1.5 LEGAL REQUIREMENTS 10
 - 1.6 ENVIRONMENTAL AUTHORISATION 11
- 2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT TEAM 12**
 - 2.1 EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT TEAM 12
- 3. LAYOUT OF THE EMPR 13**
 - 3.1 PLANNING AND DESIGN PHASE 13
 - 3.2 CONSTRUCTION PHASE 13
 - 3.3 OPERATIONAL PHASE..... 14
 - 3.4 CLOSURE & DECOMMISSIONING PHASE 14
- 4. MITIGATION AND/OR MANAGEMENT MEASURES 15**
 - 4.1 GENERAL CONSTRUCTION PHASE MITIGATION AND MANAGEMENT MEASURES 15
 - 4.2 EIR MITIGATION AND MANAGEMENT MEASURES..... 15
- 5. ADMINISTRATION AND REGULATION OF ENVIRONMENTAL OBLIGATIONS 16**
 - 5.1 MANAGEMENT STRUCTURE 16
 - 5.2 ROLES AND RESPONSIBILITIES..... 16
 - 5.3 COMPLIANCE MONITORING AND CORRECTIVE ACTION..... 19
 - 5.4 REPORTING AND REVIEW 19
 - 5.5 ENVIRONMENTAL MONITORING..... 20
 - 5.6 EMERGENCY PREPAREDNESS..... 21
 - 5.7 ENVIRONMENTAL INCIDENT MANAGEMENT..... 21
 - 5.8 MANAGEMENT REVIEW 21
- 6. REPORTING 23**
 - 6.1 METHOD STATEMENTS 23
 - 6.2 GOOD HOUSEKEEPING 24
 - 6.3 RECORD KEEPING 24
 - 6.4 DOCUMENT CONTROL 25
- 7. ENVIRONMENTAL AWARENESS 26**
 - 7.1 ENVIRONMENTAL TRAINING 26
 - 7.2 MONITORING OF ENVIRONMENTAL TRAINING..... 27
- 8. CLOSURE PLANNING 28**
 - 8.1 POST-CONSTRUCTION ENVIRONMENTAL AUDIT 28
 - 8.2 MANAGEMENT REVIEW AND REVISION OF THE EMPR 28
 - 8.3 GENERAL REVIEW OF EMPR 28
- 9. CONCLUSIONS 29**

1. INTRODUCTION

Mulilo Newcastle Wind Power (Pty) Ltd. (hereinafter referred to as the “Applicant”) plans to develop the Mulilo Newcastle Wind Power Wind Energy Facility (MNWP WEF) with a maximum installed capacity of 140 megawatts (million watts or MW) across various land parcels located in the Newcastle Local Municipality, which lies to the southeast of Amajuba District Municipality of Kwazulu Natal Province (hereinafter referred to as the “Site”) and which is detailed further in this Environmental Management Programme Report (hereinafter referred to as “EMPr”).

1.1 LOCATION OF THE PROJECT

The proposed MNWP WEF will be located approximately 15 km north-west of the town of Newcastle in the Kwazulu-Natal Province. The study area is situated in Ward 1 of the Newcastle Local Municipality within the Amajuba District Municipality (ADM).

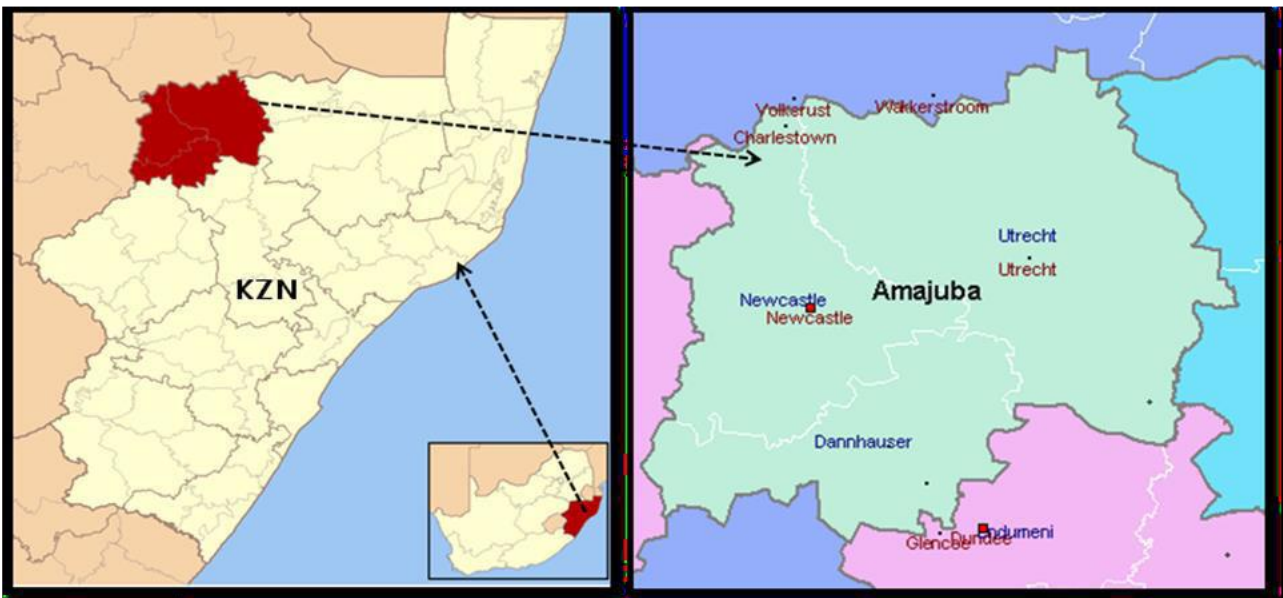


Figure 1-1: Location of the proposed MNWP WEF Complex within the KZN Province, Amajuba DM and Newcastle LM.

MNWP WEF property portions

Table 1-1 below indicates the property portions and farm names associated with the MNWP WEF project area. The proposed project is situated on approximately 2,940 ha of land consisting of six (6) farm portions.

Table 1-1: Affected properties for the MNWP WEF.

SG DIGIT NUMBER	FARM NAME	FARM NUMBER	AREA (HA)
NOHS00000000335000002	Geelhoutboom	3350	647
NOHS00000000335000001	Geelhoutboom	3350	567
NOHS00000000944700000	Bernard	9447	465
NOHS00000001630200000	Spitskop	16302	587
NOHS00000000943900000	Cliffdale	9439	280
NOHS00000000944800000	Byron	9448	392
TOTAL			2,940

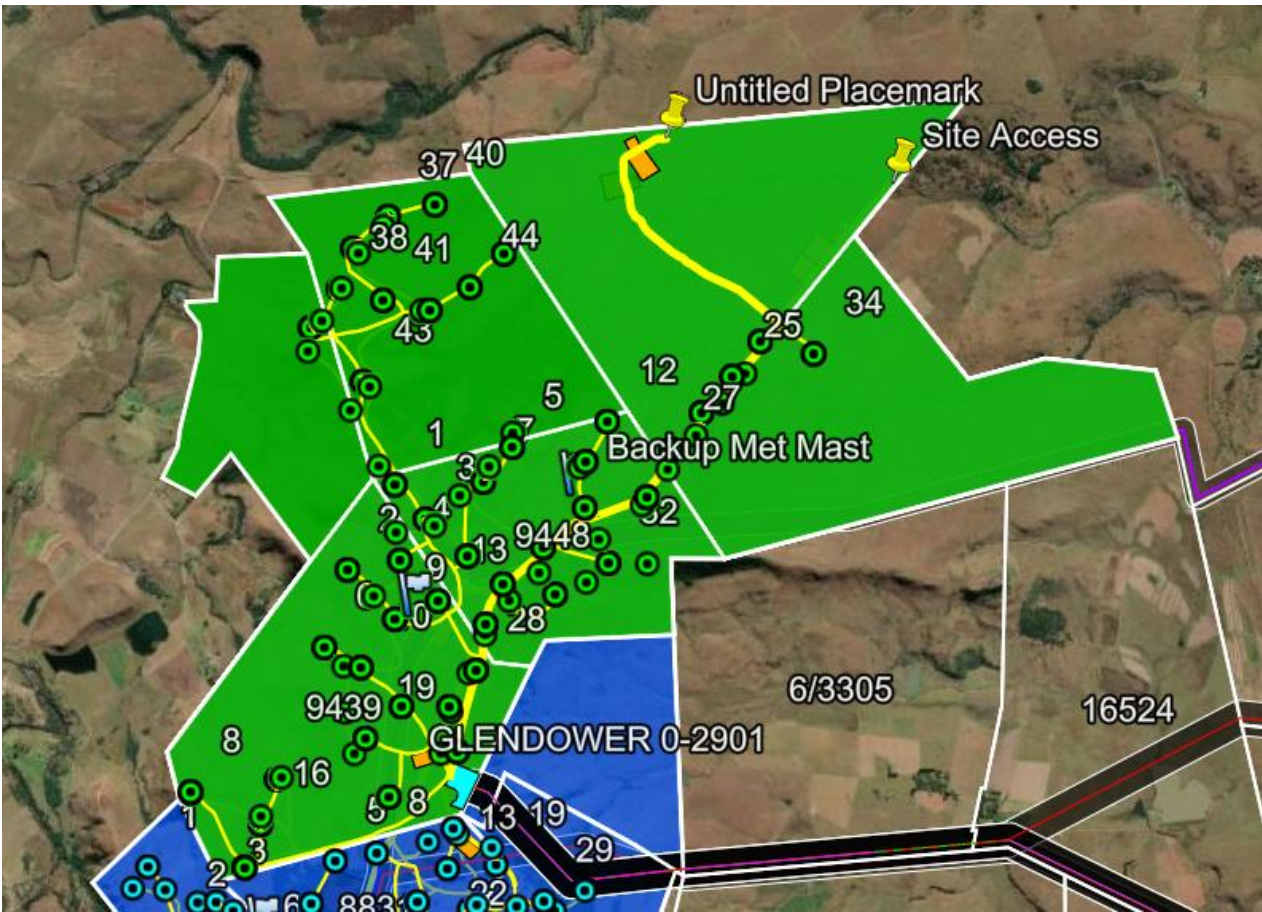


Figure 1-2: Cadastral map of the affected properties within the MNWP WEF site.

1.2 PROPOSED ACTIVITY

Mulilo Newcastle Wind Power (Pty) Ltd proposes to develop, construct and operate the 200 MW Mulilo Newcastle Wind Power (MNWP) WEF as part of the Mulilo Newcastle Wind Energy Facility (WEF) Complex located near Newcastle in KwaZulu-Natal.

The MNWP WEF will comprise up to 45 turbine positions and up to 200 MW generation capacity, and will have an anticipated lifespan of 20 – 25 years. The WEF will be located on six (6) land parcels with a total extent of 2,940 ha.

INSERT FINAL APPROVED LAYOUT MAP

Figure 1-3: Layout map of the proposed MNWP WEF project.

The Environmental Authorizations for the powerline connections to the Eskom grid at the Incandu Substation, will be subject to separate applications and the Basic Assessment process.

Tables 1-1 and 1-2 below summarise the key technical details for the MNWP WEF project:

Table 1-1: Turbine specifications.

Component	Specification
WEF Capacity	Up to 200 MW
Number of Turbines	Up to 45 turbines
Power output per turbine	Unspecified
Hub Height	Up to 140 m
Rotor Diameter	Up to 200 m
Blade length	Up to 100 m
Turbine tip height	Up to 240 m

Table 1-2: WEF component descriptions.

Facility Component	Description
Crane platform and hardstand area	Crane platform and hardstand laydown for each turbine position.
Turbine Foundations	Reinforced Concrete Foundation. Depth: up to 3.5 m Diameter: up to 25 m per turbine Volume of concrete: up to 800 m ³ per turbine.
IPP Substation	33 kV to 132 kV collector substation to receive, convert and step-up electricity from the WEF to the 132 kV grid suitable supply. The substations maximum height will be Lightning Mast up to 25 m high. The facility will house control rooms and grid control yards for both Eskom and the IPP. Additional infrastructure includes parking, up to 2.8 m high fencing, storm water channels and culverts, ablutions, water storage tanks, septic tank, and borehole.
Construction/office yard	This includes bunded fuel areas, oil storage areas, general stores (containers) and skips.
WTG component laydown area	Temporary laydown area.
On-site concrete batching plant	Temporary on-site concrete batching plant.
Primary Site Access Roads	Site access will, where possible, make use of existing farm roads that will be upgraded and maintained for the life of the WEF. The existing roads to be upgraded will be expanded to a width of up to 9 m. New roads will be constructed (in areas where there are no existing roads) with a width of up to 9 m to the IPP substation and laydown areas. V-drains will run on both sides of the road.
Internal roads	Roads connecting the turbine positions will where possible make use of existing farm roads that will be upgraded and maintained for the life of the plant. The existing roads to be upgraded will be expanded to a width of up to 6 m. New roads will be constructed (in areas where there are no existing roads) with a width of up to 6 m and will connect all turbines. V-drains will run on both sides of the road.

Facility Component	Description
33 kV reticulation	A combination of 33 kV overhead lines and 33 kV underground cable (where technically feasible) will be used, aligned along the road network connecting each WTG position to the IPP substation.
Operations and maintenance (O&M) buildings	Includes other infrastructure such as parking, up to 2.8 m high fencing, storm water channels and culverts, ablutions, water storage tanks, septic tank and borehole.
Met masts	Two met masts (Up to 140 m height).

1.3 OBJECTIVES OF THE EMPr

This Environmental Management Programme report (EMPr) has been compiled to provide mitigation, monitoring and institutional measures to be taken during the construction and operation of the MNWP WEF near MNWP WEF in the KwaZulu Natal Province. These measures aim to eliminate, offset and/or reduce adverse environmental and social impacts.

This EMPr informs all relevant parties, in this case, the Project Coordinator, the Contractor, the Environmental Control Officer (ECO) and all other staff employed by Mulilo Newcastle Wind Power (Pty) Ltd. at the site, of their duties in the fulfilment of the legal requirements for the construction and operation of the MNWP WEF, with particular reference to the prevention and mitigation of anticipated potential environmental impacts.

All parties should note that obligations imposed by the EMPr are legally binding in terms of the Environmental Authorisation (EA) granted by the relevant environmental permitting authority, the national Department of Fisheries, Forestry and the Environment (DFFE).

The general objectives of the EMPr are to:

- Ensure compliance with the regulatory authority stipulations and guidelines which could be local, provincial, national and/or international;
- Ensure that there is sufficient allocation of resources on the project budget so that the scale of EMPr-related activities is consistent with the significance of project impacts;
- Verify environmental performance through information on impacts as they occur;
- Respond to unforeseen events;
- Provide feedback for continual improvement in environmental performance;
- Identify a range of mitigation measures which could reduce and mitigate the potential impacts to minimal or insignificant levels;
- Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project;
- Identify measures which could optimize beneficial impacts;
- Create management structures which address the concerns and complaints of I&APs with regards to the development;
- Establish a method of monitoring and auditing environmental management practices during all phases of the activity;
- Ensure that safety recommendations are complied with; and
- Specify time periods within which the measures contemplated in the final EMPr must be implemented, where appropriate.

1.4 STRUCTURE AND FUNCTION OF THE EMPr

An EMPr is focused on sound environmental management practices, which will be undertaken to minimise adverse impacts on the environment through the lifetime of a development. In addition, an EMPr identifies measures which should be in place or will be actioned to manage any incidents and emergencies that could occur during the operation of the project.

As such, the EMPr provides specifications which must be adhered to in order to minimise adverse environmental impacts associated with the construction and operation of the MNWP WEF. The contents of the EMPr are consistent with the requirements as set out in Appendix 4 of the National Environmental Management Act (NEMA, Act No. 107 of 1998 and subsequent 2014 amendments) Environmental Impact Assessment (EIA) Regulations (2014, and subsequent 2017 amendments), as stipulated below.

REQUIREMENTS OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT IN TERMS OF GN R. 982 (GN R. 326, 2017) APPENDIX 4

- (1) An EMPr must comply with Section 24(N) of the Act and include -
 - (a) Details of –
 - (i) The EAP who prepared the EMPr; and
 - (ii) The expertise of the EAP to prepare an EMPr, including a curriculum vitae;
 - (b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
 - (c) A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;
 - (d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including –
 - (i) Planning and design;
 - (ii) Pre-construction activities;
 - (iii) Construction activities;
 - (iv) Rehabilitation of the environment after construction and where applicable post closure; and
 - (v) Where relevant, operation activities;
 - (f) A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable include actions to –
 - (i) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
 - (ii) Comply with any prescribed environmental management standards or practices;
 - (iii) Comply with any applicable provisions of the Act regarding closure, where applicable;
 - (iv) Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
 - (g) The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);
 - (h) The frequency of monitoring the implementation of the impact management actions contemplated in (f);
 - (i) An indication of the persons who will be responsible for the implementation of the impact management actions;
 - (j) The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;
 - (k) The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);
 - (l) A program for reporting on compliance, taking into account the requirement as prescribed by the regulations;
 - (m) An environmental awareness plan describing the manner in which –
 - (i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and
 - (ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment; and

- (n) Any specific information that may be required by the competent authority.
- (2) Where a government notice *gazetted* by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.

1.5 LEGAL REQUIREMENTS

Construction must be according to the best industry practices, as identified in the project documents. This EMPr, which forms an integral part of the contract documents, informs the Contractor of their duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by the construction and operational activities associated with the MNWP WEF. The Contractor should note that obligations imposed by the approved EMPr are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract which pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications, then the latter must prevail.

The Contractor must identify and comply with all South African national and provincial environmental legislation, including associated regulations and all local by-laws relevant to the project. Key legislation currently applicable to the construction and operational phases of the project must be complied with. The list of applicable legislation provided below is intended to serve as a guideline only and is not exhaustive:-

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	DATE:
National Environmental Management Act (NEMA, Act No. 107 of 1998) and its subsequent amendments	1998 and 2014 amendments
National Environmental Management Act (NEMA, Act No. 107 of 1998) Environmental Impact Assessment (EIA) Regulations (2014 and subsequent 2017 amendments)	2014 and 2017 amendments
Constitution Act (Act No. 108 of 1996)	1996
National Heritage Resources Act (NHRA, Act No. 25 of 1999)	1999
National Water Act (NWA, Act No. 36 of 1998) and its subsequent amendments	1998
National Environmental Management: Waste Act (NEMWA, Act No. 59 of 2008) and its subsequent amendments	2008
National Environmental Management: Protected Areas Amendment Act (NEMPAA, Act No. 31 of 2004)	2004
National Environmental Management: Air Quality Act (NEMAQA, Act No. 39 of 2004) and its subsequent amendments	2004
Conservation of Agricultural Resources Act (CARA, Act No. 43 of 1983)	1983
National Environmental Management: Biodiversity Act (NEMBA, Act No. 10 of 2004)	2004
National Forest Act (NFA, Act No. 84 OF 1998) and its subsequent amendments	1998
National Environmental Management: Biodiversity Act, Alien and Invasive Species Regulations (2014)	2014
Occupational Health and Safety Act (OHSA, Act No. 85 of 1993)	1993
Health Act (63 of 1977)	1977
Hazardous Substances Act (HSA, Act No. 15 of 1973)	1973
Spatial Planning and Land Use Management Act (SPLUMA, Act No. 16 of 2013)	2013
Electricity Regulation Act (Act No. 4 of 2006) and its subsequent amendments	2006
Aviation Act (Act No. 74 of 1962): 13 th Amendment of the Civil Aviation Regulations 1997, dated 2008	1962, 1997 and 2008

TITLE OF LEGISLATION, POLICY OR GUIDELINE:	DATE:
Minerals and Petroleum Resources Development Act (MPRDA, Act No. 28 of 2002) and subsequent 2013 amendments	2002 and 2013 amendments
National Road Traffic Act (NRTA, Act No. 39 of 1996)	1996
National Veld and Forest Fire Act (Act No. 101 of 1998)	1998
South African Bureau of Standards (SABS)	
National Infrastructure Plan (NIP, 2012)	2012
Local Government: Municipal Systems Act (Act No. 32 of 2000)	2000
South African Vegetation Map (Mucina and Rutherford, 2012) and Vegetation Descriptions (2006)	2006 / 2012
White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity	1997

1.6 ENVIRONMENTAL AUTHORISATION

In accordance with the requirements of the National Environmental Management Act (Act No 107 of 1998) (NEMA), and relevant EIA regulations made in terms of this Act and promulgated in August, 2010 (Government Notice R543), and listed activities under (Government Notice R 544, 545, 546), the proposed MNWP WEF was subjected to a Full Scoping & Environmental Impact Assessment.

In terms of the EIA process, all reports generated from the environmental studies form part of a series of documents for the project. The Environmental Impact Report (EIR) identified potentially significant environmental impacts and was the main report in the series. Additional Specialist Assessments serve to supplement the assessment contained in the EIR.

This EMPr interprets the findings of the EIR, and prescribes project-specific specifications to be achieved. The EMPr is a progressive working document which will be updated based on the relevant conditions stipulated in the Environmental Authorisation (EA). The EMPr will then be submitted to DFFE (along with the final approved layout) for approval prior to the commencement of construction.

2. DETAILS OF THE ENVIRONMENTAL ASSESSMENT TEAM

2.1 EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT TEAM

EAP: Dr Alan Carter, *Pri.Sci.Nat*, EAPASA

NEMA registered Company: Coastal and Environmental Services, trading as CES

Contact Person: Ms Robyn Thomson

Physical Address: 39 Harewood Drive, Nahoon, East London

Postal Address: PO Box 8154, Nahoon, East London, 5210

Telephone: +27 (0)43 726 7809

Website: www.cesnet.co.za

Email: r.thomson@cesnet.co.za | a.carter@cesnet.co.za

DR ALAN CARTER

Alan has extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He is a member of the American Institute of Certified Public Accountants (licensed in Texas) and holds a PhD in Plant Sciences. Alan has been responsible for leading and managing numerous and varied consulting projects over the past 25 years. He is a registered professional with the South African Council for Natural Scientific Professionals (SACNASP) as well as a registered member of the Environmental Assessment Practitioners Association of South Africa (EAPASA). Alan has led large scale EIAs for 30+ wind and solar energy projects.

MS ROBYN THOMSON

Robyn is a Senior Environmental Consultant and holds a BSc (Environmental Science) degree with majors in Archaeology, Environmental and Geographical Science, as well as a BSc (Hons.) in Environmental Science, with coursework in Environmental Management, Environmental Impact Assessment, Environmental Risk Assessment, Environmental Contamination Rehabilitation, Geographic Information Systems and fundamentals in Statistics. The Honours programme also entailed a research project, which looked at the effectiveness of the community awareness programme conducted by the Asbestos Interest Group (AIG) on the effects of and attitudes towards asbestos contamination in two rural communities, Heuningvlei and Ga Mopedi respectively, in the Northern Cape Province. The research project formed part of a larger project quantifying the extent of secondary environmental asbestos contamination in South Africa. Robyn obtained her undergraduate degree at the University of Cape Town, and her Honours degree at Rhodes University. Robyn has 15 years of experience and expertise in Basic Assessments, Environmental Impact Assessments, Environmental Monitoring, Environmental Management Plans, Water Use Licencing, public participation, GIS and project coordination. Robyn has particularly strong experience in infrastructure projects for various municipal, provincial and national organisations.

3. LAYOUT OF THE EMPr

In order to ensure a holistic approach to the management of environmental impacts during the planning and design, construction, operational and decommissioning phases of the proposed MNWP WEF, this EMPr sets out the methods by which proper environmental controls are to be implemented by the Contractor and all other parties involved. The MNWP WEF may only be decommissioned 30 years after reaching Commercial Operations and thus the decommissioning phase for this development is not discussed further. The EAP strongly recommends that the decommissioning phase be subject to further assessment and a standalone EMPr when this phase becomes relevant. Each remaining phase of development is discussed in more detail below and has specific issues unique to that phase.

3.1 PLANNING AND DESIGN PHASE

The Planning and Design Phase is an integral component of the project life cycle and requires interaction between the design engineers and environmental consultants to ensure that the engineers are aware of the environmental constraints that must be considered and incorporated into the final design of the project.

The format of the Planning and Design Phase section is to ensure that all specifications are included in the design phase. It requires ongoing and in-depth discussions between the final design team and the appointed Environmental Control Officer (ECO). The engineer will have to cost for, and be available for, ongoing discussions with the ECO at all stages of final design.

3.2 CONSTRUCTION PHASE

The Construction Phase section details the environmental management system/framework within which construction activities will be governed, and it consists of various actions, initiatives and systems which the Contractor will have to ensure are in place and are undertaken. It consists of both a management system and environmental specifications which contain detailed specifications that will need to be undertaken or adhered to by the Contractor.

The Construction Phase section will need to be developed parallel to the Final Design Stages, and constructive input should be invited from the selected Contractor. Sound environmental management is orientated around a pragmatic, unambiguous but enforceable set of guidelines and specifications, and for this reason it is imperative that the Contractor, while being bound by the EMPr, fully understands it and has had input into its final development. For this reason, the final construction EMPr will need to be signed off after input from the selected Contractor prior to the initiation of construction activities. It should, however, be noted that the Contractor must tender on the existing document and that in areas of uncertainty, a precautionary approach to the environmental guidelines and specifications must be adopted.

3.3 OPERATIONAL PHASE

The Operational Phase section provides specific guidance related to operational activities associated with a particular development. By taking pro-active measures during the Construction Phase, potential environmental impacts emanating during the Operational Phase will be minimised. Monitoring of certain issues, such as the success of vegetation re-establishment and erosion control, will be required to continue during operation. The final Operational Phase section should be developed in conjunction with any other relevant stakeholders prior to the adoption thereof.

3.4 CLOSURE & DECOMMISSIONING PHASE

This section includes principles for the decommissioning and closure phase of the MNWP WEF. This section will be required to be re-visited and updated at the time of decommissioning.

4. MITIGATION AND/OR MANAGEMENT MEASURES

4.1 GENERAL CONSTRUCTION PHASE MITIGATION AND MANAGEMENT MEASURES

In addition to the mitigation and management measures which are stipulated in the MNWP WEF EIR, the MNWP WEF EA Amendment Report and included in Section 4.2 of this report, the following general Construction Phase mitigation and management measures apply.

4.2 EIR MITIGATION AND MANAGEMENT MEASURES

The following tables set out the potential environmental, social and specialist issues that could occur during the lifespan of the MNWP WEF Development, as per the Final MNWP WEF EIR. The Final MNWP WEF EIR and associated specialists provide mitigation measures and recommendations in an effort to reduce the significance of potential negative impacts and enhance potential benefits for the Planning and Design, Construction, Operational and Decommissioning Phases of the MNWP WEF Development. The EA Amendment Report and associated specialist input has also been included in these table to ensure that the EMPr and its associated mitigation measures remain updated throughout its lifespan.

4.2.1 *Planning & Design Phase*

INSERT FINAL MITIGATION MEASURES

4.2.2 *Construction Phase*

INSERT FINAL MITIGATION MEASURES

4.2.3 *Operational Phase*

INSERT FINAL MITIGATION MEASURES

4.2.4 *Decommissioning Phase*

INSERT FINAL MITIGATION MEASURES

5. ADMINISTRATION AND REGULATION OF ENVIRONMENTAL OBLIGATIONS

5.1 MANAGEMENT STRUCTURE

In line with this EMPr, the Contractor must prepare a document clearly outlining and demonstrating the environmental responsibilities, accountability and liability of the Contractor's employees. The Contractor must assign responsibilities for the following:

- Reporting structures;
- Actions to be taken to ensure compliance;
- Overall design, development and implementation of the EMPr;
- Documenting the environmental policy and strategy;
- Implementing the EMPr in all stages/phases of the project; and
- All the aspects which require action under the other core elements and sub-elements of the EMPr.

All official communication and reporting lines, including instructions, directives and information, need to be channelled according to the organisation structure.

5.2 ROLES AND RESPONSIBILITIES

5.2.1 *Applicant*

Mulilo Newcastle Wind Power (Pty) Ltd (hereafter referred to as the Applicant) was established for the sole purpose of developing, owning and operating the proposed MNWP WEF. The Applicant is the responsible entity for monitoring the implementation of the EMPr and compliance with the EA. However, if the company appoints a Contractor to implement the project and hence implement the proposed mitigation measures documented in this EMPr on their behalf, then the successful contractor's responsibilities are outlined as per the section that follows.

The Applicant will also be responsible for stipulating and enforcing fines and penalties to the Contractor for contravention of any non-compliances against the EMPr, the EA and other approved plans.

5.2.2 *Contractor*

The successful Contractor will:

- Be responsible for the finalisation of the EMPr in terms of methodologies which are required to be implemented to achieve the environmental specifications contained herein and the relevant requirements contained in the EA;
- Be responsible for the overall implementation of the EMPr in accordance with the requirements of the developer and the EA;
- Ensure that all third parties, who carry out all or part of the Contractor's obligations under the contract, comply with the requirements of this EMPr;
- Be responsible for obtaining any outstanding permits and licenses which are required for the construction of the MNWP WEF; and
- Ensure that the appointment(s) of the ECO and the Environmental Site Officer (ESO) are subject to the approval of the Mulilo Newcastle Wind Power (Pty) Ltd.

5.2.3 Resident Engineer

The Resident Engineer (RE) shall be appointed by the Applicant and will be required to oversee the construction programme and construction activities performed by the Contractor. The RE is expected to liaise with the Contractor and ECO on environmental matters, as well as any pertinent engineering matters where these may have environmental consequences. The RE will oversee the general compliance of the Contractor with the EMPr and other pertinent site specifications. The RE should also be familiar with the EMPr specifications and further monitor the Contractor's compliance with the environmental specifications on a daily basis, through a Site Diary, and enforce compliance.

5.2.4 Environmental Site Officer (ESO)

The Contractor shall appoint a nominated representative of the Contractor as the ESO for the contract. The ESO must be site-based and should be the responsible person for implementing the environmental provisions of the construction contract.

The approved ESO must be onsite at all times.

The ESO's duties will include, *inter alia*, the following:

- Ensuring that all the environmental authorisations and permits, required in terms of the applicable legislation, have been obtained prior to construction commencing;
- Reviewing and approving construction Method Statements (MS) with input from the ECO and RE, where necessary, in order to ensure that the environmental specifications contained within the construction contract are adhered to;
- Assisting the Contractor in finding environmentally responsible solutions to problems;
- Keeping accurate and detailed records of all activities on site;
- Keeping a register of complaints onsite and recording community comments and issues, and the actions taken in response to these complaints;
- Ensuring that the required actions are undertaken to mitigate the impacts resulting from non-compliance;
- Reporting all incidences of non-compliance to the ECO and Contractor; and
- The ESO must submit regular written reports to the ECO, not less frequently than once a month, during the construction phase of the MNWP WEF.

The ESO must have:

- The ability to manage public communication and complaints;
- The ability to think holistically about the structure, functioning and performance of environmental systems;
- The ESO must be fully conversant with the EIR, EMPr, relevant environmental legislation and any other relevant documents relating to the MNWP WEF; and
- The ESO must have received professional training, including training in the skills necessary to be able to amicably and diplomatically deal with the public as outlined in the first bullet point above.

The ECO shall be in the position to determine whether or not the ESO has adequately demonstrated his/her capabilities to carry out the tasks at hand and in a professional manner. The ECO will therefore have the authority to instruct the Contractor to replace the ESO if, in the ECO's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the construction contract. Such instruction must be in writing and must clearly set out the reasons why a replacement is required and within what timeframe. The ECO must visit the development site and, in addition to the responsibilities listed in section 5.2.5 below, review the performance of the ESO and submit regular performance reviews to Mulilo Newcastle Wind Power (Pty) Ltd.

5.2.5 Environmental Control Officer (ECO)

For the purpose of implementing the conditions contained herein, Mulilo Newcastle Wind Power (Pty) Ltd must appoint an ECO for the contract. The ECO must be the responsible person for ensuring that the provisions of the EMPr as well as the EA are complied with during the construction phase. The ECO will be responsible for issuing instructions to the Contractor, where environmental considerations call for action to be taken. The ECO must submit regular written reports, at least once a month, to the Applicant and, when required and/or requested, to the environmental authority (DFFE). The ECO will be responsible for the monitoring, reviewing and verifying of compliance with the EMPr and conditions of the EA by the Contractor.

The ECO's duties in this regard will include, *inter alia*, the following:

- Confirming that all the EAs and permits required in terms of the applicable legislation have been obtained prior to construction commencing;
- Monitoring and verifying that the EMPr, EA and Contract are adhered to at all times and taking action if specifications are not followed;
- Monitoring and verifying that environmental impacts are kept to a minimum;
- Reviewing and approving construction Method Statements with input from the ESO and RE, where necessary, in order to ensure that the environmental specifications contained within this EMPr and the EA are adhered to;
- Inspecting the site and surrounding areas on a regular basis to monitor compliance with the EMPr, EA and Contract;
- Monitoring the undertaking by the Contractor of environmental awareness training for all new personnel onsite;
- Ensuring that activities onsite comply with all relevant environmental legislation;
- Undertaking a continual internal review of the EMPr and submitting any changes to the Applicant and authority for review and approval, as applicable;
- Checking the register of complaints kept onsite and maintained by the ESO and ensuring that the correct actions are/were taken in response to these complaints;
- Checking that the required actions are/were undertaken to mitigate the impacts resulting from non-compliance;
- Reporting all incidences of non-compliance to Mulilo Newcastle Wind Power (Pty) Ltd;
- The ECO must also submit compliance audit reports to DFFE, in accordance with the requirements of the EA. Such reports must be reviewed by Mulilo Newcastle Wind Power (Pty) Ltd prior to submission;
- Keeping a photographic record of progress onsite from an environmental perspective. This can be conducted in conjunction with the ESO, because the ESO will be the person that will be onsite at all times and can therefore take photographic records weekly. The ECO should ensure that the ESO understands the task at hand;
- Recommending additional environmental protection measures, where necessary; and

- Providing feedback on any environmental issues during the site meetings.

The ECO must have:

- A good working knowledge of all relevant environmental policies, legislation, guidelines and standards;
- The ability to conduct inspections and audits and to produce thorough, readable and informative reports;
- The ability to manage public communication and complaints;
- The ability to think holistically about the structure, functioning and performance of environmental systems; and
- Proven competence in the application of the following integrated environmental management tools:
 - Environmental Impact Assessment;
 - Environmental Management Plans/Programmes;
 - Environmental auditing;
 - Mitigation and optimisation of impacts;
 - Monitoring and evaluation of impacts; and
 - Environmental management systems.

The ECO must be fully conversant with the EIA Process, the MNWP WEF, EA, Amended EA, this EMPr and all relevant environmental legislation for the project. The Applicant will have the authority to replace the ECO if, in their opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMPr or this specification. Such instruction will be in writing and must be clearly set out with reasons why a replacement is required and within what timeframe.

5.3 COMPLIANCE MONITORING AND CORRECTIVE ACTION

Non-compliance with the conditions of the EMPr must be viewed as a breach of appointment Contract for which the construction contractors will be held liable. The latter is deemed NOT to have complied with the EMPr if:

- There is evidence of contravention of the EMPr, its environmental specifications or the Method Statements developed by the Contractor within the boundaries of the construction site or areas of contractor responsibility;
- Construction related activities take place outside the defined boundaries of the site;
- Environmental damage ensues due to negligence;
- The Contractor fails to comply with corrective or other instructions issued by the ECO within a specific time; or
- The Contractor fails to respond adequately to complaints from the public or authorities.

The Applicant and the construction contractors are liable for any construction rehabilitation costs associated with their non-compliance with this EMPr. This rehabilitation will be undertaken to the satisfaction of the ECO. The construction contractors will have the right to appeal any punitive action undertaken by the ECO or the Applicant.

5.4 REPORTING AND REVIEW

The EMPr reporting and documentation requirements must be based on best practice principles, e.g. ISO 14001, which must take the following requirements into account:

- Documents associated with the EMPr must be reviewed regularly and updated by all environmental management parties;
- Audits of the environmental performance of the construction phase of the project will be undertaken on a monthly basis by accredited auditors in fulfilment of likely conditions of EA in this regard;
- The findings of external, internal and informal environmental reviews will be recorded and items requiring action will be identified from the recommendations made; and
- The construction contractors will be contractually obliged to fulfil any reasonable recommendations, and implementation of these actions will be assessed in the above audit.

Meetings, where required, should take place onsite. Internal auditing and reporting should be subject to external review by the ECO during the monthly compliance audits.

5.5 ENVIRONMENTAL MONITORING

5.5.1 General environmental monitoring

A monitoring programme will be implemented for the duration of the construction of the MNWP WEF and associated infrastructure. This programme will include:

- Establishing a baseline through the taking of photographs of identified environmental aspects and potential impact sites along the routes prior to construction.
- Bi-weekly (fortnightly) monitoring during the first month of construction where after monthly audits will be conducted by the ECO for the remainder of the construction phase to ensure compliance to the EMPr conditions, and where necessary make recommendations for corrective action. These audits can be conducted randomly and do not require prior arrangement with the Project Coordinator.
- While construction is taking place at MNWP WEF, the ECO must be on site at least twice a week to ensure that protected plant and tree species are adequately demarcated.
- Compilation of an audit report with a rating of compliance with the EMPr. The ECO shall keep a photographic record of any damage to areas outside the demarcated site and construction area. The date, time of damage, type of damage and reason for the damage shall be recorded in full to ensure the responsible party is held liable. All claims for compensation emanating from damage should be directed to the ECO for appraisal. The Contractor shall be held liable for all unnecessary damage to the environment. A register shall be kept of all complaints from the Landowner or community. All complaints / claims shall be handled immediately to ensure timeous rectification / payment by the responsible party.

5.5.2 Avifaunal Monitoring

Prior to construction, an avifaunal specialist should be consulted in order to determine the requirements for monitoring of the avifauna present in the vicinity of the MNWP WEF, pre-and post-construction. The suggested monitoring programme should be incorporated into the final EMPr.

5.5.3 Bat Monitoring

Baseline and monitoring data is vital for the assessment of the impact of wind turbines on surrounding bat populations. Prior to construction, baseline information on bat roosting sites, species diversity and seasonal migration should be taken into account and incorporated into the final design. In addition, operational monitoring should be undertaken in order to assess the fatalities incurred. This should be undertaken intensively during the first year of operation. The recently circulated “Good Practice Guidelines for Surveying Bats in Wind Farm Developments 2011” should be considered during the design of monitoring programmes. If this document is further amended prior to construction of the facility, the guideline incorporating the inputs of SAWEA should be used.

Prior to construction, a bat specialist should be consulted in order to determine the requirements for monitoring of the bats present in the vicinity of the wind farm, pre- and post-construction. The suggested monitoring programme should be incorporated into the final EMPr.

5.6 EMERGENCY PREPAREDNESS

The Contractor must develop environmental emergency response procedures to ensure that there are appropriate responses to unexpected or accidental actions or incidents that will cause environmental impacts during the construction phase. Such activities include, *inter alia*:

- Accidental discharges to water and land;
- Accidental exposure of employees to hazardous substances;
- Accidental fires;
- Accidental spillage of hazardous substances; or
- Specific environmental and ecosystem effects from accidental releases or incidents.

The Contractor and Subcontractors must comply with the emergency preparedness incident reporting requirements that must be developed and in place prior to the commencement of the construction phase.

5.7 ENVIRONMENTAL INCIDENT MANAGEMENT

The construction contractors must adhere to the hazard and incident reporting protocols to be developed by the Contractor. A report must be completed for all incidents, and appropriate action taken where necessary to minimise any potential impacts. DFFE must be informed of any environmental incidents, in accordance with legislative requirements, should this be necessitated by a major environmental incident.

5.8 MANAGEMENT REVIEW

A formal management review should be conducted in which the internal audit reports, written by the ESO and based on frequent inspections and interactions with the ECO and review of the periodic reports, including audit reports by the independent external auditor - will be reviewed. The purpose of the review is to critically examine the effectiveness of the EMPr and its implementation and to decide on potential modifications to the EMPr as and when necessary. The process of management review will be to keep to the principle of continual improvement.

Management review should take place when the liaison committee, consisting of representatives from the Contractor, construction Subcontractors (as appropriate), ECO and other parties or I&APs deem them necessary or on a quarterly basis. The purpose of these quarterly meetings will be to review the progress of the Contractor in implementing and complying with their obligations in terms of this EMPr for the duration of the project. Where necessary, management review will take place more frequently than the required quarterly meetings.

6. REPORTING

6.1 METHOD STATEMENTS

Method Statements must be completed by the Contractor, an individual that is competent with the tasks to be undertaken, for each activity which requires a Method Statement as specified in the EMPr or as requested by the ECO. Each Method Statement must be submitted to the ECO and the Applicant for approval. For the purposes of the environmental specification, a Method Statement is defined as:

“A written submission by the Contractor to the ECO setting out the plant, materials, labour and method the Contractor proposes to carry out an activity, in such detail that the ECO is enabled to assess whether the Contractor’s proposal is in accordance with the EMPr and/or will produce results in accordance with EMPr.”

The Method Statement must include details of the:

- Construction procedures;
- Materials and equipment to be used;
- Transportation of the equipment to- and from site;
- How the equipment and/or material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Compliance and non-compliance with the specifications; and
- Any other information deemed necessary by the Engineer.

Method Statements can be for once-off tasks or a series of tasks which are often repeated. The risks are identified during the various work stages when a Method Statement is prepared. Steps taken to reduce the potential risk associated with these stages can then be determined. The sequential steps and actions to be followed by the persons carrying out the works are written down. This sequence of steps should include all environmental and safety aspects relevant to the task being executed.

As a minimum, the Contractor should produce the following method statements:

- Site Dust Management;
- Solid Waste Management;
- Hazardous Material Management;
- Hydrocarbon Management;
- Site Clearing and Topsoil Management;
- Fire Management;
- Noise Management;
- Concrete Mixing;
- Pollution Control;
- Site Access and Traffic Management; and
- Incident and Emergency Response Management.

The Method Statements should be submitted to the ECO and the Applicant not less than twenty (20) days prior to the intended date of commencement of the activity, or as directed by the ECO. The Contractor must not commence an activity until all required Method Statements have been approved by the ECO and the Applicant. The ECO should provide comment on the methodology and procedures proposed by the Contractor but the ECO will not be responsible for the Contractor's chosen measures of impact mitigation and emergency/disaster management systems. Approval of the Method Statements should not be withheld unreasonably.

All control measures detailed in the Method Statement must be the subject of "toolbox" talks prior to the initiation of works. By introducing or reaffirming these measures during the "toolbox" talk, everyone involved should have a clear understanding of the work to be carried out, as well as the safe work method sequences and equipment required.

An example of a Method Statement layout is provided in [Appendix C](#).

6.2 GOOD HOUSEKEEPING

The Contractor must undertake "good housekeeping" practices during the construction phase. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods to include the care for and preservation of the environment within which the construction is situated.

6.3 RECORD KEEPING

The engineer and the ECO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The ECO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report. These reports shall be made available to DFFE when requested.

The Contractor shall ensure that an electronic filing system identifying all documentation related to the EMP is established.

A list of reports likely to be generated during all phases of the Project is provided below, and all applicable documentation must be included in the environmental filing system catalogue or document retrieval index.

- Final Environmental Impact Assessment Report.
- Environmental Management Plan.
- Final design documents and diagrams issued to and by the Contractor.
- All communications detailing changes of design/scope that may have environmental implications.
- Daily, weekly and monthly site monitoring reports.
- Complaints register.
- Medical reports.

- Training manual.
- Training attendance registers.
- Incident and accident reports.
- Emergency preparedness and response plans.
- Copies of all relevant environmental legislation.
- Permits and legal documents, including letters authorising specific personnel of their duties as part of emergency preparedness teams e.g. fire teams, etc.
- Crisis communication manual.
- Disciplinary procedures.
- Monthly site meeting minutes during construction.
- All relevant permits.
- Environmental Authorisation on the EIA from the DFFE.
- All method statements from the Contractor for all phases of the project.

6.4 DOCUMENT CONTROL

The Contractor is responsible for establishing a procedure for electronic document control. The document control procedure should comply with the following requirements:

- Documents must be identifiable by organisation, division, function, activity and contact person;
- Every document should identify the personnel and their position(s), who drafted and compiled the document(s), who reviewed and recommended approval, and who finally approved the document for distribution; and
- All documents should be dated, provided with a revision number and reference number, filed systematically, and retained for a five (5) year period.

The Contractor must ensure that documents are periodically reviewed and revised, where necessary, and that current versions are available at all locations where operations, essential to the functioning of the EMP, are performed. All documents must be made available to the ECO and other independent external auditors.

7. ENVIRONMENTAL AWARENESS

7.1 ENVIRONMENTAL TRAINING

The Contractors must ensure that their employees and any third party, who carries out all or part of the Contractors' obligations, is adequately trained with regard to the implementation of the EMPr and the general environmental legal requirements and obligations.

Environment and health awareness training programmes should be targeted at three (3) distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes should contain the following information:

- The names, positions and responsibilities of personnel to be trained;
- The framework for appropriate training plans;
- The summarised content of each training course; and
- A schedule for the presentation of the training courses.

The ECO must ensure that records of all training interventions are kept in accordance with the record keeping and documentation control requirements as set out in this EMPr. The training records must verify each of the targeted personnel's training experience.

The Applicant must ensure that adequate environmental training takes place. All employees must be given an induction presentation on environmental awareness and the content of the EMPr. The presentation should be conducted in the language of the employees to ensure it is understood. The environmental training must, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities;
- Environmental legal requirements and obligations;
- Details regarding floral and faunal species of special concern and protected species, and the procedures to be followed should these be encountered during the construction of construction camps;
- The importance of not littering;
- The importance of using supplied ablution facilities;
- The need to use water sparingly;
- Details of and encouragement to minimise the production of waste and re-use, recover and recycle waste where possible; and the
- Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered.

Recommended Environmental Education Material is provided in Appendix A.

7.2 MONITORING OF ENVIRONMENTAL TRAINING

The Contractor must monitor the performance of construction workers to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary, the ECO and/or a translator should be called to the site to further explain aspects of environmental or social behaviour that are unclear. Toolbox talks are recommended.

8. CLOSURE PLANNING

The following closure planning should be adopted after

Final site cleaning - the contractor shall clear and clean the site and ensure that everything not forming part of the permanent works is removed from site before issuing the completion certificate or as otherwise agreed.

Rehabilitation - the contractor (landscape architect/horticulturist) shall be responsible for rehabilitating and re-vegetation of all areas disturbed/areas earmarked for conservation during construction to the satisfaction of the engineer and ECO.

8.1 POST-CONSTRUCTION ENVIRONMENTAL AUDIT

A post-construction environmental audit must be carried out and submitted to DFFE at the expense of the developer so as to fulfil conditions of the EA granted. Objectives should be to audit compliances with the key components of the EMPr, to identify main areas requiring attention and recommend priority actions. The audit should be undertaken annually and should cover a cross section of issues, including implementation of environmental controls, environmental management and environmental monitoring.

Results of the audits should inform changes required to the specifications of the EMPr or additional specifications to deal with any environmental issues which arise on site and have not been dealt with in the current document.

8.2 MANAGEMENT REVIEW AND REVISION OF THE EMPr

The EMPr is to be reviewed annually for the first three years and then once every five years thereafter, by an independent environmental consultant, unless otherwise specified by the authorities. The auditor is to highlight issues to be addressed in the EMPr or changes required during the annual audit. These points are to be included as an annexure to the EMPr and to be considered during the review process. Recommended changes to the EMPr must be forwarded to DFFE for approval and comment, before subsequently being incorporated into the EMPr.

8.3 GENERAL REVIEW OF EMPr

The EMPr will be reviewed by the ECO on an ongoing basis. Based on observations during site inspections and issues raised at site meetings, the ECO will determine whether any procedures require modification to improve the efficiency and applicability of the EMPr on site.

Any such changes or updates will be registered in the ECO's record, as well as being included as an annexure to this document. Annexure of this nature must be distributed to all relevant parties.

The Contractor must clear and clean the site and ensure that all equipment and residual materials, not forming part of the permanent works, are removed from site before issuing the completion certificate or as otherwise agreed.

9. CONCLUSIONS

All foreseeable actions and potential mitigations and/or management actions for the MNWP WEF have been (to date) and should be contained in this document. The EMPr should be seen as a day-to-day management document. The EMPr sets out the environmental and social standards, which would be required to minimise the negative impacts and maximise the positive benefits of the MNWP WEF development. The EMPr could therefore change daily, and, if managed correctly, lead to successful phases of development.






All attempts should be made to have this EMPr available, as part of any tender documentation, so that the Contractors are made aware of the potential cost and timing implications needed to fulfil the implementation of the EMPr, thus adequately costing for these.

APPENDIX A | ENVIRONMENTAL EDUCATION COURSE OUTLINE





PROPOSED ENVIRONMENTAL EDUCATION COURSE OUTLINE


















Reasons why should we look after the environment

-  We have a right to a clean environment
-  A clean environment is essential to healthy living
-  All our basic needs come from the environment
-  A contract has been signed – development vs the environment
-  Penalties / fines could be issued

How to look after the environment

-  Report issues
-  Teamwork
-  Follow the set rules and guidelines (EA, EMPr, Method statements etc.)
-  Conserve, reuse and recycle

Tips and Guidelines

-  Workers and equipment should not be allowed outside demarcated areas
-  No swimming or polluting of water bodies allowed
-  No damage / disturbance to vegetation or water bodies without consent / permits
-  No disturbance allowed in no-go areas
-  No hunting of animals
-  Report all fires
-  No burning or burying of waste
-  No smoking near hazardous materials
-  Training on fire fighting equipment
-  Hazardous materials to be stored in designated and bunded areas
-  Spill kits and drip trays a must
-  Report all spills
-  Control dust and Noise
-  Maintain construction vehicles
-  Availability and maintenance of sanitation facilities



Tips and Guidelines

- 🍃 Only eat in designated areas
- 🍃 Do not litter
- 🍃 Vehicles to remain on approved tracks and adhere to speed limit
- 🍃 Ensure emergency phone numbers are available
- 🍃 Ensure PPE is worn
- 🍃 Report fires, leaks and injuries
- 🍃 Ask if unsure



APPENDIX B | ENVIRONMENTAL AUTHORISATION

COPY OF THE ENVIRONMENTAL AUTHORISATION

APPENDIX C | METHOD STATEMENT EXAMPLE

EXAMPLE OF A METHOD STATEMENT

METHOD STATEMENT

CONTRACT:..... **DATE:**.....

PROPOSED ACTIVITY (give title of Method Statement and reference number from the EMPr):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated sketches and plans where possible):



*** Note: Please attach additional pages should you require more space.**

DECLARATIONS

1) ENVIRONMENTAL CONTROL OFFICER (ECO)

The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

(Signed)

(Print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

APPENDIX D | MANAGEMENT PLANS

- D1. MNWP WEF | Traffic Management Plan and Route Analysis
- D2. MNWP WEF | Vegetation Management Plans
- D3. MNWP WEF | Freshwater Management Plans (including Erosion and Stormwater Management Plans)
- D4. MNWP WEF | Integrated Waste Management Plan
- D5. MNWP WEF | Fire Management Plan
- D6. MNWP WEF | Avifaunal Monitoring Plan
- D7. MNWP WEF | Noise EMPr
- D8. MNWP WEF | Eskom Requirements

APPENDIX E | EAP CURRICULUM VITAE

E1. Dr Alan Carter

E2. Ms Robyn Thomson

APPENDIX F | MANAGEMENT PLANS

TERMS	DESCRIPTION
Acceptable Exposure	The exposure of the maximum permissible concentration of a substance to the environment that will have a minimal negative effect on health or the environment.
Agenda 21	The document by that name adopted at the United Nations Conference of Environment and Development held in Rio de Janeiro, Brazil in June 1992.
Agreement	For NEMA EIA Regulations GNR 982 regulation 1(3) and (4) (of 2014) means the Agreement as contemplated in section 50A (2) of the Act.
Agri-industry	An undertaking involving the beneficiation of agricultural produce.
Alternatives	In relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to – (a) the property on which, or location where, the activity is proposed to be undertaken; (b) the type of activity to be undertaken; (c) the design or layout of the activity; (d) the technology to be used in the activity; or (e) the operational aspects of the activity; And includes the option of not implementing the activity.
Alien Vegetation	Alien vegetation is defined as undesirable plant growth which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable. This includes plant species identified as Alien and invasive species in the National Environmental Management Biodiversity Act of 2004, Alien and Invasive Species Regulations, 2014.
Applicant	Means a person who has submitted or who intends to submit an application.
Application	In terms of the NEMA EIA Regulations GNR 982 (2014) means an application for an– (a) Environmental authorisation in terms of Chapter 4 of these Regulations; (b) Amendment to an environmental authorisation in terms of Chapter 5 of these Regulations; (c) Amendment to an EMPr in terms of Chapter 5 of these Regulations; or (d) Amendment of a closure plan in terms of Chapter 5 of these Regulations.
Aquifer	A geological formation which has structures or textures that hold water or permit appreciable water movement through them.
Aquatic Critical Biodiversity Areas	Linkages between catchment, important rivers and sensitive estuaries whose safeguarding is critically required in order to meet biodiversity pattern and process thresholds and are spatially defined as part of a bioregional plan or systematic biodiversity plan, available on the South African National Biodiversity Institute’s BGIS website (http://bgis.sanbi.org/WCBF14project.asp);

TERMS	DESCRIPTION
Associated Structures, Infrastructure and Earthworks	Any structures, infrastructure, or earthworks, including borrow pits, that is necessary for the functioning of a facility activity.
Basic Assessment Report	A report contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014).
Best Practicable Environmental Option	The Option that provides the most benefit or causes the least damage to the environment as a whole at a cost acceptable to society in the long term as well as in the short term.
Biodiversity	The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.
Bioregional Plan	The bioregional plan contemplated in Chapter 3 of the National Environment Management Biodiversity Act, 2004 (Act No. 10 of 2004).
Borehole	includes a well, excavation or any artificially constructed or improved underground cavity which can be used for the purpose of— (a) intercepting, collecting or storing water in or removing water from an aquifer (b) observing and collecting data and information on water in an aquifer; or (c) recharging an aquifer.
Buffer Area	Means, unless specifically defined, an area extending 10 kilometres from the proclaimed boundary of a world heritage site or national park and 5 kilometres from the proclaimed boundary of a nature reserve, respectively, or that defined as such for a biosphere.
Building and Demolition Waste	Waste, excluding hazardous waste, produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood displaced during that construction, alteration, repair or demolition.
Business Waste	Waste that emanates from premises that are used wholly or mainly for commercial, retail, wholesale, entertainment or government administration purposes.
By-product	A substance that is produced as part of a process that is primarily intended to produce another substance or product and that has the characteristics of an equivalent virgin product or material
Canal	An open structure that is lined or reinforced, for the conveying of a liquid or that serves as an artificial watercourse.
Catchment	In relation to a watercourse or watercourses or part of a watercourse, means the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points.
Channel	An excavated hollow bed for running water or an artificial underwater depression to make a water body navigable in a natural watercourse, river or the sea
Cement-laden water	Cement laden water refers to water containing cement or concrete arising from the Contractor’s activities.
Clean Production	The continuous application of integrated preventative environmental strategies to processes, products and services to increase overall efficiency and to reduce the impact of such processes, procedures and services on health and the environment

TERMS	DESCRIPTION
Closure Plan	A plan contemplated in NEMA EIA Regulations GNR 982 regulation 19 (of 2014)
Commence	The start of any physical activity, including site preparation or any other activity on the site in furtherance of" a waste management activity, but does not include any activity required for investigation or feasibility study purposes as long as such investigation or feasibility study does not constitute a waste management activity.
Commercially Confidential Information	Commercial information the disclosure of which would prejudice to an unreasonable degree the commercial interests of the holder provided that details of emission levels and waste products must not be considered to be commercially confidential notwithstanding any provision of this Act or any other law.
Community	Any group of persons or a part of such a group who share common interests and who regard themselves as a community.
Competent Authority	The authority who in terms of the provisions of the NEMA and the EIA Regulations GNR 982 (of 2014) is identified as the authority who must consider and decide on an application in respect of a Specific listed activity.
Contaminated water	Contaminate water refers to water that has been contaminated by the Contractor's activities such as with hazardous substances, hydrocarbons, paints, solvents and runoff from plant, workshop or personnel wash areas but excludes water containing cement/ concrete or silt.
Construction	The building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.
Construction Camp	Construction camp (site camps) refers to all storage and stockpile sites, site offices, container sites, workshops and testing facilities and other areas required to undertake construction activities.
Contractor	An organisation that contracts with a Principal to carry out the work under the contract, including construction and related services, to deliver an asset or construction product.
Container	A disposable or re-usable vessel in which waste is placed for the purposes of storing, accumulating, handling, transporting, treating or disposing of that waste, and includes bins, bin-liners and skips.
Contaminated	The presence in or under any land, site, buildings or structures of a substance or micro- organism above the concentration that is normally present in or under that land, which substance or micro- organism directly or indirectly affects or may affect the quality of soil or the environment adversely.
Cumulative Impact	In relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact 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;

TERMS	DESCRIPTION
Dangerous Goods	Goods containing any of the substances as contemplated in South African National Standard No. 10234, supplement 2008 1.00: designated "List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)" published by Standards South Africa, and where the presence of such goods, regardless of quantity, in a blend or mixture, causes such blend or mixture to have one or more of the characteristics listed in the Hazard Statements in section 4.2.3, namely physical hazards, health hazards or environmental hazards;
Decommissioning	To take out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned.
Development	The building, erection, construction or establishment of a facility, structure of infrastructure, including associated earthworks or borrow pits, that is necessary for the undertaking of a listed or specified activity, including any associated post development monitoring, but excludes any modification, alteration or expansion of such a facility, structure of infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint;
Disposal	The burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.
DWS	The Department of Water and Sanitation. This Department is the custodian of South Africa's water resources. It is primarily responsible for the formulation and implementation of policy governing this sector. It also has override responsibility for water services provided by local government.
Ecosystem	A dynamic system of plant animal and micro-organism communities and their non-living environment interacting as a functional unit.
Effluent	Any liquid discharge into the coastal environment as waste and includes any substance dissolved or suspended in the liquid; or Liquid which is a different temperature from the body of water into which it is being discharged.
Environment	Environment refers to the surroundings within which humans exist and that could be made up of:- (a) The land, water and atmosphere of the earth; (b) Micro-organisms, plant and animal life; (c) Any part or combination of (i) and (ii) and the interrelationships among and between them; and (d) The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental Aspect	An environmental aspect is any component of a Contractor's construction activity that is likely to interact with the environment.
Environmental Assessment Practitioner (EAP)	The individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the NEMA EIA Regulations GNR 982 – as defined in section 1 of the Act.
Environmental Audit Report	A report contemplated in NEMA EIA Regulations GNR 982 regulation 34 (of 2014);

TERMS	DESCRIPTION
Environmental Authorisation (EA)	An Environmental Authorisation (EA) refers to a written statement from the relevant environmental authority, with or without conditions, that records the approval (partial approval or refusal) of a proposed project and the mitigating measures required to prevent or reduce the effects of environmental impacts during the lifespan of a contract.
Environmental Control Officer (ECO)	An Environmental Control Officer (ECO) refers to a suitably qualified and experienced person or entity appointed for the construction and/or operation of works, to perform the obligations specified in the EA.
Environmental Impact	An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.
Environmental Impact Assessment (EIA)	A systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.
Environmental Impact Assessment Report (EIR)	A report contemplated in NEMA EIA Regulations GNR 982 regulation 23 (of 2014).
Environmental Management Plan/Programme (EMP/EMPr)	An Environmental Management Plan (EMP) or Programme (EMPr) is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning specific to a project are prevented; and that the positive benefits of the project are enhanced.
Environmental Management System (EMS)	The internationally accepted and recognized environmental management system (EMS) which enables companies, organizations and operations to systematically manage, prevent and reduce environmental problems and associated costs. In terms of ISO 14001 an EMS is defined as, <i>“that part of the overall management system that includes organizational structure, planning activities, responsibilities, procedures, processes and resources for developing, implementing, reviewing and maintaining the environmental policy.”</i>
Environmental Policy	Environmental Policy is a statement (or statements) by the organisation of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.
Environmental Site Officer (ESO)	An Environmental Site Officer (ESO) refers to the site-based designated person responsible for implementing the environmental provisions of the construction contract and is appointed by the service provider that carries-out construction activities.
Environmental Risk	A potential for adverse environmental impacts (such as pollution of a water source during construction activities).
External Auditor	An External Auditor is a suitably qualified and experienced independent expert as per the required auditor qualifications (ISO 14012).
General Waste	Waste that does not pose an immediate hazard or threat to health or to the environment, and includes— (e) domestic waste; (f) building and demolition waste; (g) business waste; and (h) inert waste;

TERMS	DESCRIPTION
Hazardous Waste	Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.
High-water Mark	Means the highest line reached by coastal washers but excluding the line reached as a result of- (a) Exceptional or abnormal floods or storms that occur no more than one in ten years; or (b) An estuary being closed to the sea.
Important Bird and Biodiversity Area (IBA)	Areas/sites that hold significant numbers of globally and/or regionally threatened species (Categories A1 and C1); sites that are known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) (Category A2); sites that are known or thought to hold a significant component of a group of species whose distributions are largely or wholly confined to one biome (Category A3);
Independent	In relation to an EAP, a specialist or the person responsible for the preparation of an environmental audit report, means – (a) That such EAP, specialist or person has no business, financial, personal or other interest in the activity or application in respect of which that EAP, specialist or person is appointed in terms of the NEMA EIA Regulations GNR 982 (2014); or (b) That there are no circumstances that may compromise the objectivity of that EAP, specialist or person in performing such work; excluding – i. Normal remuneration for a specialist permanently employed by the EAP; or ii. Fair remuneration for work performed in connection with that activity, application or environmental audit;
Independent Environmental Consultant (IEC)	An Independent Environmental Consultant (IEC) is a suitably qualified and IEC appointed by the Engineer to perform the obligations specified in the Contract. The IEC must provide reports to the regulatory authority, the Engineer and any other parties as specified by the regulatory authority.
Indigenous Vegetation	Vegetation consisting of indigenous plant species occurring naturally in an area, regardless the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.
Industrial Complex	An area used or zoned for bulk storage, manufacturing, processing or packaging purposes.
Inert Waste	Waste that— (a) does not undergo any significant physical, chemical or biological transformation after disposal; (b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and (c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant.
In Stream Habitat	The physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse.
Interested and/or Affected Party (I&AP)	An Interested and/or Affected Party (I&AP) is contemplated in Section 24(4)(d) of the NEMA (1998, Act No. 107) and which, in terms of that section, includes – (i) Any person, groups of persons, organisation interested in or affected by an activity, and;

TERMS	DESCRIPTION
	<i>(ii) Any organ of state that may have jurisdiction over any aspect of the activity.</i>
ISO 14001 Environmental Management System (ISO 14001)	The internationally accepted and recognised Environmental Management System as reflected in the document SABS ISO 14001: 1996; the most recent being the ISO 14001:2015.
Life Cycle Assessment	a process where the potential environmental effects or impacts of a product or service throughout the life of that product or service are being evaluated.
Linear Activity	An activity that is arranged in or extending along one or more properties and which affects the environment or any aspect of the environment along the course of the activity, and includes railways, roads, canals, channels, funiculars, pipelines, conveyor belts, cableways, powerlines, fences, runways, aircraft landing strips, and telecommunication lines.
Maintenance	Actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint;
Management	The planning and interactive controlling of human and material resources to achieve time, cost, quality, performance, functional and scope requirements. It involves the anticipation of changes due to changing circumstances and the making of other changes to minimise adverse effects.
Method Statement (MS)	A Method Statement (MS) is a written submission by the Contractor to the ECO in response to the EMPr or to a request by the ECO, setting out the plant (construction equipment), materials, labour and method the Contractor proposes to carry out an activity, identified by the relevant specification or the ECO when requesting the Method Statement. The MS should be in such detail that the ECO is able to assess whether the Contractor's proposal is in accordance with the EMPr and/or will produce results in accordance with the EMPr.
Mitigate/Mitigation	Mitigate (or mitigation) refers to the implementation of practical measures to reduce the adverse impacts, or to enhance beneficial impacts of a particular action.
National Appeal Regulations	The national appeal regulations published in terms of section 43(4) and 44 of the Act;
National Environmental Management Act (NEMA)	the National Environmental Management Act, 1998 (Act No. 107 of 1998); To provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith.
National Protected Area Expansion Strategy (NPAES)	South Africa's national strategy for expansion of the protected area network, led by the Department of Environmental Affairs and developed in collaboration with national and provincial conservation authorities. The NPAES sets targets for protected area expansion, provides maps of the most important areas for protected area expansion, and makes recommendations on mechanisms for protected area expansion. Focus areas for protected area expansion are identified in the NPAES. They are large, intact, unfragmented areas of high importance for land-based protected area expansion, suitable for the creation or expansion of large protected areas.

TERMS	DESCRIPTION
NEM:AQA	National Environmental Management: Air Quality Act (39 of 2004). The NEM:AQA's serves to protect the environment by providing reasonable measures for the protection and improvement of the quality of air; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting economic and social development.
NEM:BA	National Environmental Management: Biodiversity Act (10 of 2004). This Act serves to provide for the management and conservation of biological diversity within an area and of the components of such biological diversity. This Acts objective is to preserve species and ecosystems irrespective of whether or not they are situated in protected areas.
NEM:ICM	National Environmental Management: Integrated Coastal Management Act (24 of 2008). This act applies to the coastal zone of South Africa and is intended to preserve, protect, extend and improve the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations.
NEM:PAA	National Environmental Management: Protected Areas Act (57 of 2003). This Act is intended to protect and conserve ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. This includes the identification and classification of various types of protected areas to give effect to this intention and underpinning this intention is the stated objective of creating a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity. These protected areas are to fall on state owned land, privately owned land and communally owned land.
NEM:WA	National Environmental Management: Waste Act (59 of 2008). The NEM:WA serves to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.
NEMA EIA Regulations	The environmental impact assessment regulations promulgated in terms of the national environmental management act, 1998 (act no. 107 of 1998) ("NEMA").
No-Go Area	A no-go area refers to an area in which construction activities are prohibited.
Pollution	According to the NEMA (Act No. 107 of 1998), pollution can be defined as, " <i>Any change in the environment caused by (i) substances; (ii) radioactive or other waves; or (iii) noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future</i> ".

TERMS	DESCRIPTION
Potentially hazardous substance	A potentially hazardous substance refers to a substance, which, in the reasonable opinion of the ECO, can have a harmful effect on the environment. Hazardous Chemical Substances are defined in the Regulations for Hazardous Chemical Substances published in terms of the Occupational Health and Safety Act.
Procurement	The collection of activities performed by and for an agency to acquire services and products, including assets, beginning with the identification/detailing of service requirements and concluding with the acceptance (and where applicable, disposal) of the services and products.
Proponent	A person intending to submit an application for environmental authorisation and is referred to as an applicant once such application for environmental authorisation has been submitted;
Protection	In relation to a water resource, means - (d) maintenance of the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way; (e) prevention of the degradation of the water resource; and (f) the rehabilitation of the water resource.
Protected Area	Those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers;
Public Participation Process	A process by which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, an application.
Reasonable	Reasonable means reasonable in the opinion of the ECO, after consultation with the ESO - unless the context indicates otherwise.
Recycle	A process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.
Rehabilitation	Rehabilitation refers to re-establishing or restoring something to its original state or to a healthy, sustainable capacity or state.
Riparian Habitat	The physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of Species with a composition and physical structure distinct from those of adjacent land areas.
Service Provider	A Contractor, sub-Contractor, supplier, consultant (including an agency) and sub-consultant (contracting with a consultant), and their service providers, that contract with a customer to carry out assets construction, provide other products (including goods) and/or provide services.
Significant Impact	An impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence.
Site	A site, in this context, refers to the area in which construction is taking place.
Solid waste	Solid waste refers to all solid waste materials, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

TERMS	DESCRIPTION
Specialist	A person that is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports, including due diligence studies and socio-economic studies.
Species of Conservation Concern (SCC)	Species of Conservation Concern (SCC) refers to species listed in the rare, indeterminate, or monitoring categories of the South African Red Data Books, and/or species listed in globally near threatened, nationally threatened or nationally near threatened categories (Barnes, 1998).
Sub-Contractor	An organisation that contracts with a Contractor as the customer to carry out construction and related services, and/or provide other products.
Supplier	An organisation that contracts with a Contractor/Principal to supply a product and/or service.
Sustainable Development	The integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.
Systematic Biodiversity Plan	A plan that identifies important areas for biodiversity conservation, taking into account biodiversity patterns (i.e. the principle of representation) and the ecological and evolutionary processes that sustain them (i.e. the principle of persistence). A systematic biodiversity plan must set quantitative targets/thresholds for aquatic and terrestrial biodiversity features in order to conserve a representative sample of biodiversity pattern and ecological processes.
Threatened species	Threatened species are defined as: a) species listed in the endangered or vulnerable categories in the revised South African Red Data Books or listed in the globally threatened category; b) species of special conservation concern (i.e. taxa described since the relevant South African Red Data Books, or whose conservation status has been highlighted subsequent to 1984); c) species which are included in other international lists; or d) species included in Appendix 1 or 2 of the Convention of International Trade in Endangered Species (CITES).
Topsoil	Topsoil refers to the top 100 mm of soil and may include top material e.g. vegetation and leaf litter.
Treatment	Any method, technique or process that is designed to— (g) change the physical, biological or chemical character or composition of a waste; or (h) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or (i) destroy or reduce the toxicity of a waste, in order to minimise the impact of the waste on the environment prior to further use or disposal.
Urban Area	Areas situated within the urban edge (as defined or adopted by the competent authority), or in instances where no urban edge or boundary has been defined or adopted, it refers to areas situated within the edge of built-up areas.
Virgin Soil	Land not cultivated for the preceding 10 years.
Waste	Any substance, whether or not that substance can be reduced, re-used, recycled and recovered— (a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of; (b) which the generator has no further use of for the purposes of production; (c) that must be treated or disposed of; or

TERMS	DESCRIPTION
	(d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but— (e) a by-product is not considered waste; and (f) any portion of waste, once re-used, recycled and recovered, ceases to be waste;
Waste Disposal Facility	Any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.
Waste Management Activity	Any activity listed in Schedule 1 or 40 published by notice in the Gazette under section 19, and includes— (a) the importation and exportation of waste; (b) the generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste; (c) the accumulation and storage of waste; (d) the collection and handling of waste; (e) the reduction, re-use, recycling and recovery of waste; (f) the trading in waste; (g) the transportation of waste; (h) the transfer of waste; 50 (i) the treatment of waste; and (j) the disposal of waste;
Waste Treatment Facility	Any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste.
Watercourse	Means- (a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and (e) a reference to a watercourse includes, where relevant, its bed and banks;
Water Management Area	An area established as a management unit in the national water resource strategy within which a catchment management agency will conduct the protection use development, conservation, management and control of water resources.
Water Management Institution	A catchment management agency, a water user association, a body responsible for international water management or any person who fulfils the functions of a water management institution in terms of this Act.
Wetland	Land which is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.