
Appendix 1
Responsibilities and Authority

A) EMP ADMINISTRATION

Copies of this EMP_r shall be kept at the site office and will be distributed to all senior contract personnel. All senior personnel shall be required to familiarise themselves with the contents of this document.

B) ROLES AND RESPONSIBILITIES

The implementation of this EMP_r requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during the construction phase.

1. THE DEVELOPER [Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd]

The Developer refers to the Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd who is ultimately responsible for compliance with all conditions of approval of the development or any aspect thereof by any authority.

With respect to the construction phase of the Development, the Developer is to:

- ensure that all relevant approvals and permits have been obtained prior to the start of construction activities on site;
- ensure that the EMP_r has been approved by the DEA prior to the start of construction activities on site;
- appoint an independent suitably qualified or experienced ECO prior to the start of construction activities on site, and for the duration of the construction phase;
- provide all principal contractors working on the project with a copy of this EMP_r as part of tender contract documentation to allow the contractors to cost for its requirements within their respective construction contracts.
- ensure compliance with condition 11.2 of the DEA EA which states as follows: Where any of the applicant's contact details change, including the name of the responsible person where the applicant is a juristic person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
- ensure compliance with condition 11.3 of the DEA EA which states as follows: The holder of the authorisation must notify the Department, in writing and within 48 (forty eight) hours, if any condition of this authorisation cannot be or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance. Noncompliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.

2. THE ENGINEER

For the purposes of this document "The Engineer" refers to the engineer for the development, or any other person (such as the architect/project manager/principal agent) authorised by the Developer, to be undertaken.

The responsibilities of the Engineer are to:

- ensure that the requirements as set out in this EMP_r and by the relevant Authorities are adhered to and implemented;
- assist the ECO in ensuring that the conditions of the EMP_r are being adhered to and promptly issuing instructions requested by the ECO, to the Contractor. All site

instructions pertaining to environmental matters issued by the Engineer are to be copied to the ECO;

- assist the ECO in making decisions and finding solutions to environmental problems that may arise during the construction phase;
- reviewing and approving construction method statements with input from the ECO;
- ordering the removal of person(s) and/or equipment not complying with the specifications or issuing a stop works order (as required by the ECO or otherwise);
- issuing of penalties for transgressions of environmental site specifications;
- providing input into the ECO's ongoing internal review of the EMP_r.

3. THE CONTRACTOR

For the purposes of this document "The Contractor" refers to any directly appointed (by the Developer) company or individual undertaking the implementation of the works.

The Contractor is to:

- ensure implementation of all applicable Environmental Management Specifications, including all additional requirements related with approved method statements, during all works on site, failing which penalties, as outlined in the environmental management specifications may be imposed by the ECO;
- ensure that all of its sub-contractors, employees, suppliers, agents or servants etc. are fully aware of the environmental management requirements detailed in the Environmental Management Specifications;
- liaise closely with the Engineer and the ECO and ensure that the works on site are conducted in an environmentally sensitive manner;
- inform the Engineer as well as the ECO should environmental issues on site go wrong, e.g. dumping, pollution, littering;
- carry out instructions issued by the Engineer, on request of the ECO, required to fulfil his/her compliance with the EMP_r.

4. ENVIRONMENTAL CONTROL OFFICER'S DUTIES

The ECO's duties, *inter alia*, must be to ensure compliance with the EMP_r through monitoring and proactive and open communication channels with the project/site management and, when necessary, enforce the environmental requirements

The ECO's responsibilities should include the following:

- monitoring and verifying that the EMP_r is adhered to at all times and taking action if the specifications are not followed;
- Ensure that a copy of the EMP_r (which also contains the EA's) is available on site at all times.
- to environmentally educate and raise the awareness of the Contractor and his staff as to the sensitivity of the Site and to facilitate the spread of the correct attitude during works on Site;
- ensure that educational information is displayed in strategic positions;
- take immediate action on Site where clearly defined and agreed no go areas are violated, or in danger of being violated, and to inform the Engineer/ Developer of the occurrence and action taken;
- monitoring and verifying that environmental impacts are kept to a minimum;
- reviewing and approving construction method statements together with the Engineer/Developer;

- assisting the Contractor in finding environmentally responsible solutions to problems;
- keeping records of all activities / incidents on Site in a Site Diary concerning the environment;
- inspecting the Site and surrounding areas regularly (twice weekly) with regard to compliance with the EMP_r;
- Keeping a register of complaints and report these first to the Engineer/Developer for action / follow-up;
- Any complaints regarding the development must be brought to the attention of DENC within 24 hours after receiving the complaint.
- requesting the removal of person(s) and/or equipment not complying with the specifications (done via the Engineer/Developer);
- recommending the issuing of penalties for transgressions of environmental site specifications to the Engineer/Developer;
- completing start-up, monthly and site closure checklists;
- keeping a photographic record of progress on Site from an environmental perspective;
- liaise with interested and affected parties to ensure that they are kept up to date on the project;
- Undertaking a continual internal review of the EMP_r and making recommendations to the Engineer/Developer.

The ECO has the authority to recommend to the Engineer/Principal Agent that works be stopped, if in his/her opinion serious harm to, or impact on, the environment is imminent, is likely to occur or has occurred and such actual or potential harm or impact is in contravention of this EMP_r, and which is, or may be, caused by construction, or related works. All stop works orders to the Contractor are, as normal, to be issued through the Engineer or Principal Agent (PA). However, should the PA not be readily available in an emergency case or be in dispute with the ECO regarding work stoppage, then the ECO shall, in these exceptional circumstances, have the authority to recommend to the DEA that works be stopped.

Upon failure by the Contractor or Contractor's employee to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the Engineer and the project management team to have the Contractor's representative or any employee(s) removed from the site or have work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the Contractor.

The ECO will be responsible for the compilation of a final closure checklist for the project, completed when all works related to the project have been completed and the site has been cleared of all construction related debris, materials or equipment not forming part of the permanent works. This checklist will audit the Contractor's compliance with the EMP throughout the duration of the construction phase and this checklist, together with a final written report will be submitted to the Department of Environmental Affairs in order to achieve "environmental closure" of the site. Such final audit shall be undertaken in compliance with conditions 5.2 and 5.3 of the Environmental Authorization for the project (Appendix 3), and shall furthermore comply with any relevant requirements of Regulation 34 of GN R982, as amended.

Appendix 2
Details and expertise of the persons who
prepared the EMPr and amendment to the
EMPr

CURRICULUM VITAE

PERSONAL DETAILS

NAME: Dudley Janeke
PROFESSION: Environmental Scientist
DATE OF BIRTH: 22 February 1970
PARENT COMPANY: D J Environmental Consultants
Somerset West
POSITION IN FIRM: Chief Executive Officer
TELEPHONE: +27 21 8510900
FACSIMILE: +27 21 851 0933
CELLPHONE: 082 211 4585
NATIONALITY: South African
LANGUAGE: English (fluent), Afrikaans (fluent)
COUNTRIES OF WORK: South Africa and Seychelles

EDUCATION:

TERTIARY EDUCATION: 1988 – 1992 University of the Western Cape – BSc (Ed)
1995 – 1997 University of the Western Cape – BSc (Hons) Botany
1997 University of Cape Town - Integrated Environmental Management
(Short course)

PROFESSIONAL AFFILIATION:

Professional Membership: International Association of Impact Assessment (IAIA)

EXPERIENCE

Professional Experience:

Date	1993
Location	Strand
Company	Department of Education and Culture
Position	Teacher
Physical Science and Biology teacher at Senior Secondary School	

Date	1994 - 1997
Location	Bellville
Company	University of the Western Cape
Position	Senior Officer Academic Support
One of the course presenters of the Method of Physical Science, General Science (Physical Science) and General Science in the Higher Diploma in Education (Post Graduate) programme.	

Date	1997
Location	Bellville
Company	University of the Western Cape
Position	Researcher
Investigated the needs for greening in townships in the Western Cape under the auspices of the Environment and Education Resources Unit (EERU).	

Date	1997 to 1998
Location	Bellville
Company	University of the Western Cape
Position	Environmental Education Officer of Cape Flats Nature Reserve:
Involved in the management of the Cape Flats Nature reserve.	

Date	1998 to 1999
Location	Cape Town
Company	The Environmental Partnership
Position	Founding Director
Established an environmental consulting practise that provides a demonstratively professional service to clients committed to meeting the environmental obligations required in a newly democratic South Africa.	

Date	1999 to present
Location	Cape Town
Company	IBA environment SA (Pty) Ltd (Institut de Biotechnologie Appliquee)
Position	Director
IBA environment SA (Pty) Ltd has as its main aim the provision of non-toxic and biodegradable solutions, which will reduce the levels of pollution of the sea, lakes, rivers and underground waters in Southern Africa.	

Date	1999 - July 2004
Location	Cape Town
Company	Tshukudu Consulting Pty (Ltd)
Position	Managing Director
Tshukudu was formed to capitalise on opportunities in the built environment, which exist in South Africa's current political, social and economic reality.	

Date	2000 to July 2004
Location	Cape Town
Company	Tshukudu Environmental Services (Pty) Ltd
Position	Managing Director
Tshukudu Environmental Services has been formed by experienced professionals to address the urgent need for responsible and informed environmental management in the Southern African region.	
Date	2004 to date
Location	Somerset West
Company	DJ Environmental Consultants CC
Position	Owner
DJ Environmental Consultants is an established environmental consultancy, which has been formed by experienced professionals who aim to address the urgent need for responsible and informed environmental management and socio-economic development in the African region. Our company brings consolidation and unification in the sense that all professional disciplines must, at some stage, take environmental and socio-economic impact factors into account. This unifying force brings each discipline together to find realistic, economical and universally acceptable solutions to the challenges of building a developing nation.	

KEY PROJECTS:

- Situation Analysis for Waste Management for local authorities in the Western Cape
- Strategic Environmental Opportunities and Constraint Study - proposed Development Framework - Culemborg - Propnet
- Environmental Assessment for the construction of base stations for MTN in the Western Cape.
- Environmental Impact Assessment for the construction of an Abalone Farm in Hawston.
- Public Facilitation for Eskom's proposed Wind Energy Demonstration Facility in the Western Cape.
- Project coordination for 57 refurbishments nation wide – Caltex
- EIA for Princessvlei Shopping Centre Development in Grassypark – City of Cape Town
- Construction Environmental Management Plan – Hawston Abalone Farm
- EIA process for the establishment of a Mariculture Park - Hawston
- An initial EIA for Bos en Dal in the Helderberg basin.
- An initial EIA for Wildschutsbrand.
- An Environmental Management Plan for the Hermanus River Golf and Country Estate. This estate is situated at the edge of the Botriver lagoon.
- Environmental Control Officer for the Hermanus River Golf and Country Estate. This included Environmental Education and Training of contracting staff.
- Completed a job on the sensitivity of the environment of a road between Hermon and Riebeeck Kasteel for Bohlweki Environmental Services.
- Botanical survey for a sensitivity study for Airports Company of South Africa.
- Environmental Control Officer for Wildevoëllei Sewage Treatment Works in Kommetjie, which included Environmental Education and Training of contracting staff.
- Public participation process for the Vredenburg - Saldanha Road project in association with Stewart Scott consulting engineers.
- Public accountability for the road between Cape Flats railway line and Old Strandfontein Road in Ottery for South Peninsula Municipality in association with Stewart Scott consulting engineers.
- Represent the Community Action and Emergency Response (CAER) group for AECI Somerset West as a control officer for Human Health Impact Assessment.
- Involved with the public participation and initial Environmental Impact Assessment for the upgrade of an external stormwater drainage system in the village of Sir Lowry's Pass in association with Ecosense.
- Environmental review work for Myrtle Grove wine estate.
- Situation analysis on waste management for all the Local Authorities within the Western Cape – Department of Environmental and Cultural Affairs and Sport (DECAS).

- David Greybeard Primate Sanctuary – Sir Lowry's Pass, in association with the Jane Goodall Institute, South Africa.
- Milner Road Office Park Development
- Bilene Marcia Integrated Environmental Management Study – in association with the Khanimambo Foundation (Graca Machel), Africa Imbizo House – Mozambique
- AECI – Human Health Risk Assessment Peer Review.
- Princess Vlei Shopping Centre Development, Grassy Park – EIA and Public Participation
- Abalone Farming in Hawston – WESGRO & DBSA
- Bergriver Water Project - TCTA
- EIA for Eden Island residential development, Seychelles
- Public Participation, Bunga Drive, Cape Town
- Public Participation, Project Management and Specialist Environmental Management Input for the law reform project in the Western Cape.
- Investigation of socio-economic and environmental impacts of golf courses and polo fields in the Western Cape.
- Public engagement component for Saron Tourism Development Framework
- Public participation and initial Environmental Impact Assessment for the upgrade of an external stormwater drainage system in the village of Sir Lowry's Pass.
- Public participation and environmental review work and for Myrtle Grove wine estate.
- Public engagement strategy for the proposed development of approximately 4000 ha's in the Knysna area, South Africa
- Public Participation component of the Agulhas Tourism Development Framework.
- Public Participation for the Cape Town Tourism Development Framework
- Public Participation for the Bontebok National Park and Agulhas National Park, SANParks.
- Public Facilitation as part of a Phase 2 Heritage Impact Assessment of the Majestic and New Kings Hotel site.
- Public facilitation for the proposed establishment of a fuel retail outlet, Heather Heights, George.
- Public Participation Process for the establishment of a Conservation Management Plan for the Congo Caves.
- Public Participation Process for the proposed Vierfontein Development

- Independent Peer Review of the Environmental Impact Assessment undertaken for the proposed Roodefontein Golf Estate.
 - Evaluation of Consortium Bids for the upgrading of the National Roads (N2) on behalf of the South African National Roads association (SANRA).
 - Milner Road Office Park Development - Insight Property Developers & Bridgeport Properties.
 - Peer Review of a Human Health Risk Assessment Peer Review for the AECI Somerset West site.
 - Environmental Audits of Kristensen Ocean Front Restaurants, Cape Town
 - Tourism Human Resources Development Situational Analysis in the Western Cape
 - External Facilitation of the People and Parks Preparatory workshop.
 - Assisting in the establishment of Community Based Natural Resources Management forums/Liaison Committees in the eight Business Units of CapeNature.
 - SA City Network Coaching for Sustainable and Environmentally managed cities. A pilot study for cities of Johannesburg, Cape Town and Durban.
 - EIA for the Vergenoegd (Farm 653/15) development
 - EIA for the Vergenoegd Estate (Farm 653/12) development)
 - EIA for the St Helena Hills development
 - Cape west Coast Biosphere Reserve - Sustainable Development Plan
 - Development of Norms and Standards for the Department of Environmental Affairs and Development Planning
 - EIA for the Phillipi Station Upgrade
 - Strategic Environmental Assessment for the Integrated Rapid Transfer System for the City of Cape Town
-

CURRICULUM VITAE

JUNAID MOOSAJEE

31 Mars Road, Surrey Estate, Athlone, 7764, Cape Town, 8000

(021) 637 4490 / 084 689 7718

junaid@enviropart.co.za

PERSONAL INFORMATION

Nationality: South African
Identity No.: 8304125298081
Date of birth: 12/04/1983
Status: HDI, AA Candidate
Driver's licence: Yes
Languages: English – speak fluently and read/write with high proficiency
Afrikaans – speak, read, and write with basic competence

CAREER HISTORY

DJ environmental Consultants
Environmental Practitioner **current**

The Environmental Partnership, Cape Town
Environmental Practitioner **September 2006 – September 2009**

My work falls under the Integrated Environmental Management policy and includes the compilation of Environmental Impact Assessments (basic and full), Strategic Environmental Assessments, Environmental auditing, Environmental Management Plans, Public Participation. Associated tasks also include report writing, managing specialists and project management of EIAs.

WORK EXPERIENCE

Environmental Practitioner involved in:

- EMS auditor for Chapman's Peak Drive operation - ongoing
- Scoping and full Assessment for the proposed extension of the Cape Town International Convention Centre- current
- Basic Assessment for a proposed cemetery extension. Client: Vygekraal Cemetery Board- current.
- Extensive public participation as part of an EIA for two residential developments catering for gap, affordable and land claim groups in Constantia. The project ceased after the first iteration of public participation. Client: PGWC - Property Management. Specialists involved are: Landscape architecture, urban design, planning, heritage, architecture, traffic and engineering.

- Scoping and full Assessment for a mixed use development proposed for an 83 hectare site in Blue Downs..
- Scoping and full Assessment for a proposed residential development with green building design elements and on-site wastewater treatment plant, Pinelands. Specialists involved are noise, architecture, geotechnical, traffic and urban design-Current
- Scoping and full Assessment for a land restitution claim in Bishopscourt. The aim is to relocate land claimants on a site which is intended for mixed used including residential, open space and heritage memory-Client: Provincial Government-project on hold.
- Scoping and full Assessment for the proposed sustainable neighbourhood at Oude Molen Village. This project has recently been initiated and the Scoping phase is expected to end late January 2008. The proponent is the Provincial Property Management Department-current
- A Strategic Environmental Assessment for a 470 hectare site in the Philippi Horticultural area. The proponent is RAPICORP Pty (Ltd). Specialists include botanist, fresh water ecologist, faunal specialist, planners, engineers, social impact assessors and a heritage specialist. -current
- Scoping and full Assessment for the proposed additional diesel generators. The proponent is ESKOM-Generation, 2007-current. -current
- Scoping and full Assessment for a package plant and light industrial development in Sarepta, Cape Town. The proponent is a private developer. Specialist studies that informed the assessment are a visual, heritage, botanical and air quality, 2007-current.
- A Basic Assessment Report for a mixed use development in Philippi, Cape Town. The proponent is a private developer. Specialists identified to date are botanical, heritage and traffic, 2007-current.
- Scoping and full Assessment for the proposed upgrade of Main Road 559 between Saldanha and Langebaan. The project proponent was the Department of Transport and Public Works. The EIA included a detailed environmental impact assessment process with extensive public participation. A number of specialist studies informed the assessment, including botanical, archaeological, heritage and transport, 2006.
- Scoping and full Assessment for a mixed use development on Berg River farm, Paarl. The proponent was the Drakenstein Municipality and the assessment was undertaken in 2006. Specialists that contributed to this EIA are botanical, visual, a floodline investigation, a heritage investigation and a social study, 2006.
- Four Basic Assessment Reports for the Drakenstein Municipality for the 'Upgrade of Informal Settlement Programme, 2007-current.
- A Basic Assessment Report on an elevated road, multistorey parkade and new terminal building at Cape Town International Airport. The proponent was Airports Company South Africa, 2006.
- Environmental Practitioner assisting with Public Participation for 2010 Green Point Stadium EIA. The proponent was the City of Cape Town, 2006.
- Bo-Kaap BAR-public participation, completed.
- Revision of Roggebaai Canal Tourism Precinct Environmental Management Plan, 2007, completed.

- Environmental Control Officer for the construction of two hotels, residential units and commercial units at the Roggebaai Canal Tourism Precinct. The proponent is Propnet, a subsidiary of Transnet, 2007-current.
- Ad hoc assistance with other projects

City of Cape Town

April 2006-September 2006

Contractual: Environmental Resource Management

I was involved with energy and climate change related projects. The Environmental Resource Management Department's flagship Energy and Climate Change Strategy was in the process of being implemented and helped to facilitate its implementation.

EDUCATION

Energy Research Centre, University of Cape Town **2006**

Short course

Related course work: Energy and Climate Change

University of Cape Town

Honours in Environmental & Geographical Science **2005**

Related course work: Environmental Impact Assessments, Environmental Management Plans, Strategic Environmental Assessments, Social Ecology, Environmental Law, Human-environment Relations, Responsible Tourism, Eco-tourism, Transfrontier Parks and Community Based Natural Resource Management.

University of Cape Town

B.Sc. in Environmental & Geographical Science & Ocean & Atmosphere Science **2004**

Related course work: Environmental Problems, Human Geography, Cities of the South, Physical Environmental Processes, Synoptic Climatology, Physical Oceanography, Coastal Oceanography and Ocean Circulation.

Athlone High School, Cape Town

1996 – 2000

Subjects: English (HG), Afrikaans (HG), Mathematics (SG), Biology (HG), Business Economics (HG), Geography (HG)

OTHER SKILLS

Project management

Highly computer literate (Microsoft suite)

Report writing and communication

Cartographic skills

Advanced administrative skills

CURRICULUM VITAE

PERSONNEL DJ ENVIRONMENTAL CONSULTANTS

NAME	Quinton Terhoven
DATE OF BIRTH	04 April 1970
NATIONALITY	South African
QUALIFICATIONS	BSc (1989–1993; UWC) BSc-Hons (1994–1994, UWC) HDE (P/G) (1995-1995, UWC) MSc (1996-2002, UWC)
PROFESSIONAL MEMBERSHIP	International Association for Impact Assessments
NAME & ADDRESS OF CURRENT EMPLOYER	DJ Environmental Consultants AECI Office Park Office Block 2 De Beers Road Extension Somerset West PostNet Suite 66 Private Bag X15 Somerset West 7130 Telephone: +27 21 851 0900 Fax: +27 21 851 0933 quinton@djec.co.za
DATE OF JOINING COMPANY	2006
CURRENT POSITION WITH COMPANY	Senior Environmental Scientist

SUMMARY OF EMPLOYMENT

Company	University of the Western Cape
Date	1994-1995
Location	Bellville
Position	Lecturer
Practical lecturer for the Dentistry 2 nd year students	

Company	Western Cape Education Department
Date	1996 – 2003
Location	Strand
Position	Head of Science and Mathematics Department
Teacher in Physical Science, Biology and Mathematics in the senior phase. Promoted in 1998 to Head of Department	

Company	Cape Academy for Mathematics, Science and Technology
Date	2004-2006
Location	Constantia
Position	Head of Department (Science)
Specialized teaching in science for learners gifted in science in the FET phase	

Company	DJ Environmental Consultants
Date	2006 – to date
Location	Somerset West
Position	Senior Environmental Scientist
Environmental Practitioner specialising in Integrated Environmental Management and Public Facilitation Processes	

KEY EXPERIENCE

- Administration Manager at DJ Environmental Consultants
- Facilitate Public Participation Process for the establishment of the Conservation Management Plan for the Cango Caves
- Public Participation in the proposed Kurland development in Plettenberg Bay
- Public Participation for the proposed Vierfontein development
- Public Participation in the proposed Uitzicht development in Knysna
- Environmental Control Officer for the Riverton Mews residential development
- Environmental Control Officer for the Norwood Gardens residential development
- Drafting of EMP for Sand Mining Permits
- Facilitator for the People & Parks Preparatory workshops for the National Conference
- Project facilitator for the establishment of CBNRM forums/Liaison Committee in the different Business Units of CapeNature
- EIA for the proposed Vergenoegd Business Park (farm 653/15) development
- EIA for the proposed St Helena Hills development
- EIA for the proposed Vergenoegd Estate Development
- EIA for the Phillipi Station Upgrade project
- Public Participation Process for the Human Development Project on the Driftsands Nature Reserve
- EIA for the proposed development on the Crammix Property
- EIA for the proposed De Zalze Winelands and Golf Estate Southern Extension
- Basic Assessment Process for the proposed low cost housing development in Temperance Town, Gordon's Bay
- Skills Audit for the Thornhill community in the Eastern Cape
- Review of Basic Assessment Process for the erection of wind measuring masts in Worcester, De Aar, Springbok and Namaqualand
- Review of the Scoping and EIA Process for the proposed wind farms in Worcester, De Aar, Springbok and Namaqualand
- Review of the Scoping and EIA Process for the proposed photovoltaic plant in De Aar and Prieska in the Northern Cape
- Review of the Scoping and EIA Process for the proposed concentrating solar panel plant in Prieska in the Northern Cape

LANGUAGE PROFICIENCY

LANGUAGE	SPEAK	READ	WRITE
Afrikaans	Excellent	Excellent	Excellent
English	Good	Good	Good

COURSES/SEMINARS ATTENDED

SEMINARS:

"Effect of cancer on host's metabolism"1993,- University of the Western Cape, Bellville, South Africa

"Effect of CaNT tumours on the baseline respiration and body weight of CBA mice". 1993 - University of the Western Cape, Bellville, South Africa

"Effect of CaNT tumours on the baseline respiration of CBA mice" 1993. University of the Western Cape, Bellville, South Africa

"The effect of Gossypol on the epididymus, testis and fertility of male CBA mice and male Wistar rats". 2002, University of the Western Cape, Bellville, South Africa

"Commercial Utilization of Renewable Energies". 2008 – Munich, Germany.

COURSES:

Environmental Impact Assessments and Strategic Environmental Assessments presented by CSIR, 2006 – University of Stellenbosch

CURRICULUM VITAE: MS K VERSFELD

Name : **VERSFELD, KAREN**
Date of Birth : 26 March 1980
Profession/Specialisation : Environmental Manager
Nationality : South African
Years experience : 10

Biography

Karen Versfeld is the Environmental Manager for Mulilo Renewable Project Developments. Karen has a MSc in Water Resource Management and has been active in the field of environmental and water resource management for over ten years. She has obtained experience as a specialist environmental consultant in undertaking environmental processes for both small and medium to large scale development projects in South Africa and Namibia. This includes a wide range of projects from renewable energy projects to pipelines and industrial developments. Karen has also obtained experience in writing and implementing Environmental Management Plans (EMPs) for the construction and operational phases of developments.

Employment record

01/2014 - Date Mulilo Renewable Project Developments, Environmental Manager
03/2009 – 12/2013 Aurecon, Senior Environmental Scientist
11/2008 - 02/2009 Ninham Shand, Water Resource Scientist
02/2008 - 11/2008 Arcus GIBB (Pty) Ltd, Environmental Scientist
11/2005 - 01/2008 ILISO Consulting (Pty) Ltd, Environmental Scientist
03/2005 - 10/2005 Hartbeespoort Water Action Group (HWAG), Project Coordinator
09/2004 - 02/2005 CPH2O, Geographic Information System (GIS) Consultant

Management experience

01/2014 – Date Environmental Manager
07/2011 – 12/2013 Project Leader

Education

2004 : MSc Water Resource Management, University of Pretoria, South Africa
2002 : Honours, University of Cape Town, South Africa
2001 : BSc Microbiology and Plant Pathology, University of KwaZulu-Natal, South Africa

Career enhancing courses

2012 : Project Management: Principles and Methods for Use in Business, University of Cape Town, South Africa
2012 : Project Management Course, Aurecon Project Support Office
2010 : Legal Training Course, Aurecon Group Legal Services
2010 : Climate Change and Integrated Water Resource Management (IWRM), University of the Western Cape, South Africa
2009 : Catchment Management Strategy Development for the Breede Water Management Area (WMA), FET Water
2007 : Environmental Law for Environmental Managers, North West University, Potchefstroom Campus
2006 : Environmental Impact Assessment (EIA): The National Environmental Management Act (NEMA), North West University, Potchefstroom Campus

Professional affiliations

Professional Natural Scientist: Environmental Science. South African Council for Natural Scientific Professions (SACNSP), Registration number: 400396/13

R.M. Holland

CURRICULUM VITAE

Name : Ross Matthew Holland
Profession : Environmental Management Consultant
Year of Birth : 1975
Nationality : South African

Contact Details : P.O. Box 31108
Tokai
7966
Cell: 072 601 0803
Fax: 086 653 1765
Email: ross@hollandandassociates.net

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

- Member, South African affiliate of International Association for Impact Assessment (IAIAsa)
- Founder Member, Environmental Assessment Practitioners Association of South Africa (EAPASA)
- Green Star SA Accredited Professional

KEY QUALIFICATIONS:

Ross Holland is an Environmental Consultant with a MSc in Environmental and Geographical Science (UCT), specializing in Environmental Management, with over eleven years of experience in the environmental field. Ross also holds certificates of competence in the fields of Water Quality and Fresh Water Ecology, with distinction. Ross has extensive experience in managing a diverse range of Environmental Impact Assessment processes including water supply projects; river rehabilitation, housing, resort, and commercial developments; renewable energy facilities; educational facilities; new roads and road upgrades; pipelines, municipal waste sites, and a shooting range. Ross has also undertaken the independent specialist review of a number of Environmental Applications, across a diverse range of projects.

Ross has also been involved in a wide spectrum of other environmental work including the undertaking of capacity building within the National Department of Environmental Affairs' Marine and Coastal Management Directorate, the undertaking of environmental opportunity and constraints analysis, due diligence investigations, as well as lecturing, environmental auditing, drafting of Environmental Management Plans/Programs (EMP) and Environmental Control Officer (ECO) work.

EXPERIENCE RECORD

1) Regulatory Processes and Environmental Impact Assessment:

2013 to present	Project Manager and Environmental Assessment Practitioner	The proposed enlargement of the Soetmelksvlei Dam, near Riviersonderend, Western Cape, South Africa Appointed by the Japie Groenewald Trust to undertake the Basic Assessment Process, including the management of the multi-disciplinary EIA team, for the proposed enlargement of the Soetmelksvlei Dam, for irrigation purposes, in the vicinity of Riviersonderend, in the Western Cape.
2013 to 2014	Project Manager and Environmental Assessment Practitioner	The Rehabilitation and widening of the MR529, between Piketberg and Velddrif, Western Cape, South Africa. Appointed by Jeffares & Green (on behalf of the provincial Department of Transport and Public Works) to undertake the Basic Assessment Process, including the management of the multi-disciplinary EIA team, for the rehabilitation and widening of this provincial road in the Western Cape.

R.M. Holland

2014	Environmental Assessment Practitioner	The independent review of twelve Basic Assessment Reports for proposed borrow pits for the supply of materials for the re-gravelling and maintenance of various roads in the Western Cape Appointed by Aurecon Pty Ltd to undertake the independent review of the Final Basic Assessment Reports for the above mentioned project within the Western Cape.
2013 to present	Project Manager and Environmental Assessment Practitioner	The proposed raising of the Jan Koekemoer Dam, in order to augment potable water supply to Pearly Beach, Western Cape, South Africa Appointed by PSP Eiendomme to undertake the Basic Assessment Process, including the management of the multi-disciplinary EIA team, for the proposed raising of the Jan Koekemoer Dam in the vicinity of Pearly Beach, in the Western Cape.
2012 to 2013	Project Manager and Environmental Assessment Practitioner	NEMA Section 24 G APPLICATION (for rectification of illegal activities) on Portion 4 of the Farm Twistwyk 182, Caledon, Western Cape Appointed by the Japie Groenewald Trust to undertake the Rectification Application, including the management of the multi-disciplinary EIA team, in terms of the National Environmental Management Act (107 of 1998), for unlawful commencement of activities within a water course, and rehabilitation of a water course.
2013	Project Manager	Proposed Citrus Pack House, Citrusdal, Western Cape, South Africa Appointed by Mouton Citrus to undertake the Set Back Line application for a proposed new Citrus Pack House in the Citrusdal area of the Western Cape, South Africa.
2013	Project Manager and Environmental Assessment Practitioner	Proposed Wood Treatment Facility, Paarden Eiland, Western Cape Appointed by Mericraft (Pty) Ltd, to undertake a full Enviro-Legal Due Diligence Investigation into to possible establishment of a new Chromated Copper Arsenic (CCA) wood treatment facility, in Paarden Eiland, Western Cape, South Africa.
2012 to 2013	Member of Project Team	Proposed Paarl Mountain and Ysterbrug Pumping Main Upgrades, Paarl, Western Cape, South Africa. Appointed by the Drakenstein Municipality to undertake the EIA process for the proposed water pipeline upgrades (partly within the sensitive Paarl Mountain Nature Reserve), Paarl, Western Cape
2012 to present	Member of Project Team	Proposed Kleinberg Dams, Hex River Valley, Western Cape South Africa Appointed by the Hex Valley Water Users Association to undertake the EIA process for the proposed Kleinberg Dam scheme, Western Cape, South Africa.
2012	Project Manager and Environmental Assessment Practitioner	New Chemical Manufacturing and Wood Treatment Facility, Mosselbay, Western Cape South Africa. Appointed by Dolphin Bay Chemicals (Pty) Ltd, to undertake a full Enviro-Legal Due Diligence Investigation (in association with Havemann Inc. Attorneys) into to possible establishment of a new chemical manufacturing facility and wood treatment facility, at various potential locations in the Mosselbay Area, Western Cape, South Africa.
2012	Member of Project team	Raising of the Keerom Dam, Western Cape, South Africa. Appointed by the Worcester East Water Users Association to undertake the EIA process for the proposed raising of the Keerom Dam in the vicinity of Worcester in the Western Cape.

R.M. Holland

2011 to 2012	Project Manager	Shale Gas Exploration, Karoo, South Africa. Appointed by "Treasure the Karoo Action Group" to undertake the specialist Environmental Review (in association with Havemann Inc. Attorneys) of Applications by Shell Exploration Company B.V., Bundu Gas and Oil Exploration (Pty) Ltd and Falcon Oil and Gas Limited, to undertake shale gas exploration in the Karoo, via Seismic Survey and Hydraulic Fracturing ("Fracking").
2011	Member of Project team	Proposed Groenwater Solar Farm, Northern Cape, South Africa Sub-contracted by Environmental Resource Management (ERM) to assist in the undertaking of the EIA process for this proposed renewable energy facility in the vicinity of Postmasberg in the Northern Cape.
2011 to 2012	Project Manager	Proposed Driehoek Residential/Office Development and Jip De Jagger Drive Extension, Belleville, Western Cape, South Africa Appointed by Barinor Management Services PTY Ltd to undertake the Basic Assessment, including the management of the multi-disciplinary EIA team, and associated public participation process, for the abovementioned project, including the management of the multi-disciplinary EIA team.
2010 to 2011	Member of Project team	Proposed Southdrift Solar Farm, Free State, South Africa Sub-contracted by Environmental Resource Management (ERM) to assist in the undertaking of the EIA process for this proposed renewable energy facility in the vicinity of Bloemfontein in the Free State.
2011	Project Manager	Proposed Fourth Kloof Abstraction and River Diversion Scheme, Ceres, Western Cape, South Africa Appointed by Verlorenvlei Investments PTY Ltd to undertake the Basic Assessment process and application for amendment of an Existing Environmental Authorization and associated public participation processes for the abovementioned project, including the management of the multi-disciplinary EIA team.
2011	Member of Project team	Mothae Diamond Mine, North-Eastern Lesotho Member of multi-disciplinary project team undertaking the EIA process for the application for full scale mining production at the Mothae site, in the vicinity of Letseng, Leshoto.
2009 to 2011	Member of Project Team	MR302 Road Upgrade, Worcester, Western Cape, South Africa Appointed by Amathemba Environmental Management Consulting CC to undertake the external review of environmental reports associated with the application for authorization to undertake the proposed development.
2010	Project Manager	Detailed Third Party Critical Review: NEMA S24G Rectification Application, Erf 293, Plettenberg Bay, Western Cape, South Africa Appointed by Thule South (Pty) Ltd to undertake a detailed independent review of a NEMA S24G application for Erf 293 Plettenberg Bay. The review entailed a site inspection followed by a detailed analysis of the information provided and process undertaken for the application. This analysis was undertaken in association with a specialist Environmental Lawyer, and culminated in the compilation of a detailed critical review report.

R.M. Holland

2010	Project Manager	Environmental Opportunities and Constraints Analysis, Doornkom Farm, Alicedale, Eastern Cape, South Africa Appointed by Mr Prop Olkers to undertake an Environmental Opportunities and Constraints analysis with respect to a possible resort development proposal for the site. The project entailed interacting with the consulting planner and undertaking a detailed site inspection together with an analysis of aerial imagery. The development proposal was then analysed against the environmental characteristics of the site and its surrounds, as well as against the requirements of the prevailing environmental legislation as well as relevant spatial planning guidelines and policies. This analysis was then collated into an environmental opportunities and constraints report.
2010	Project Manager	Proposed Sky Tower Project, Breakwater Precinct, V&A Waterfront, Western Cape, South Africa Appointed by Tourvest to undertake a Basic Assessment for the proposed construction of a proposed tourist facility on the site.
2008 to 2010	Project Manager	Proposed Water Rock mixed use development, Hout Bay, Western Cape, South Africa Appointed by the Water Rock development consortium to undertake a Basic Assessment for the proposed construction of a mixed use development on the site. The project entailed the compilation of a Basic Assessment Report and undertaking a public participation process.
2008 to 2010	Project Manager	Proposed Construction of the Groenvlei Farm Dam, Citrusdal, Western Cape, South Africa Appointed by Mouton Citrus to undertake a Basic Assessment for the proposed construction of a new farm dam on Groenvlei Farm just outside Citrusdal. The project entailed the compilation of a Scoping Report and Environmental Impact Report and undertaking a public participation process, including the management of the multi-disciplinary EIA team.
2009 to 2010	Project Manager	Erf 1591, Simonstown, Western Cape, South Africa Appointed by the Avril Ocean Trust to undertake a Basic Assessment for the proposed construction of a new house on the site. The project entailed the compilation of a Basic Assessment Report and undertaking a public participation process.
2007 - 2009	Member of Project Team	Proposed Welbeloond mixed use development and road infrastructure, Potsdam Interchange, Western Cape, South Africa Appointed by Kagiso Property Development to undertake an EIA for the proposed Welbeloond mixed use development and road infrastructure at Potsdam Interchange. Member of the environmental team, responsible for assistance in the management of the Environmental Process, as well as assistance with the writing and review of reports associated with the application for authorization (Scoping & Environmental Impact Assessment) to undertake a mixed use development on the property.
2008	Member of Project Team	Proposed Hassendal mixed use development and road infrastructure, Kuilsrivier, Western Cape, South Africa Appointed by Amphoria (Pty) Ltd to undertake an EIA for the proposed Hassendal mixed use development in Kuilsrivier. Member of the environmental team, responsible for assistance in the management of the Environmental Process, as well as assistance with the writing and review of reports associated with the application for authorization (Scoping & Environmental Impact Assessment) to undertake a mixed use development on the property.

R.M. Holland

2008 to 2014	Project Manager	<p>Proposed Caledon Flight Park Development, Caledon, Western Cape, South Africa</p> <p>Appointed by Amathemba Environmental Management Consulting CC to undertake the external review of reports associated with the application for authorization (Scoping & Environmental Impact Assessment) to undertake the proposed development.</p>
2008	Member of Project Team	<p>Application to amend the Record of Decision for the Bisschop Rd Electrical Cable installation, Hout Bay, Western Cape, South Africa</p> <p>Appointed by the City of Cape Town to undertake an application for the amendment of the conditions of authorization of the Bisschop Road Electrical Cable installation project, in order to allow for the removal of certain trees along the cable route. The project entailed the compilation of the prescribed application form as well as undertaking a public participation process.</p>
2007	Project Manager	<p>Environmental Opportunities and Constraints Analysis, Erf 36 St Helena Bay, Western Cape, South Africa</p> <p>Appointed by Northern Spark Trading 307 (Pty) Ltd to undertake an environmental assessment of the site, and the subsequent compilation of an environmental opportunities and constraints report, with regard to a possible future housing development on the property.</p>
2006 - 2007	Member of Project Team	<p>Proposed St Helena Views residential development and road infrastructure, St Helena Bay, Western Cape, South Africa</p> <p>Appointed by West Coast Miracles (Pty) Ltd to undertake an EIA for the proposed residential development in St Helena Bay. Member of the environmental team, responsible for assistance in the management of the Environmental Process, as well as assistance with the writing and review of reports associated with the application for authorization to undertake a residential development on the property.</p>
2006 - 2007	Member of Project Team	<p>Proposed Britannia Beach residential development and road infrastructure, St Helena Bay, Western Cape, South Africa</p> <p>Appointed by Britannia Beach Estate (Pty) Ltd to undertake a Basic Assessment for the proposed residential development in St Helena Bay. Member of the environmental team, responsible for assistance in the management of the Environmental Process, as well as assistance with the writing and review of reports associated with the application for authorization to undertake a residential development on the property.</p>
2006 - 2007	Project Manager	<p>Proposed Bodenzee Residential development and road infrastructure, Sunnydale, Western Cape, South Africa</p> <p>Appointed by CHZA Investments (Pty) Ltd to undertake a Basic Assessment for the proposed construction of a residential development on the site. The project entailed the compilation of a Basic Assessment Report and undertaking a public participation process.</p>
2006	Project Staff	<p>Erf 115, Rooi Els, Western Cape, South Africa</p> <p>Appointed by Tommy Brummer Town Planners to undertake the Environmental Process for the proposed construction of a residential house on the property. The project entailed the compilation of an application form and scoping checklist and undertaking a public participation process.</p>
2006	Project Staff	<p>Proposed Tennis Courts for Reddam House School, Steenberg, Western Cape, South Africa</p> <p>Appointed by Reddam House Properties to undertake the Environmental Process for the proposed construction of additional tennis courts on the property. The project entailed the compilation of an application form and scoping checklist, Scoping Report, Environmental Impact Report and undertaking a public participation process.</p>

R.M. Holland

2005 - 2007	Project Manager	Proposed Stallion Ridge Wine and Equestrian Estate, Malmesbury, Western Cape, South Africa Appointed by Jupiter Consulting CC to undertake an Environmental Impact Assessment for the proposed construction of a residential and equestrian development on the site. The project entailed the compilation of a Scoping Report and undertaking a public participation process.
2005 - 2007	Project Manager	Proposed Vineyards Residential Estate and road infrastructure, Bellville, Western Cape, South Africa Appointed by Umdiliya Estates (Pty) Ltd to undertake an Environmental Impact Assessment for the proposed construction of a residential development on the site. The project entailed the compilation of a Scoping Report and undertaking a public participation process.
2004 - 2006	Project Staff	Proposed Residential Development on Erf 2 Gordons Bay, Western Cape, South Africa Sub-contracted by Withers Environmental Consultants to assist in undertaking the Environmental Process for the proposed construction of a residential development on the property. The project entailed the compilation of an application form and scoping checklist, Scoping Report, Environmental Impact Report and undertaking a public participation process.
2004	Project Staff	Proposed Pringle Bay Community Hall, Pringle Bay, Western Cape, South Africa Appointed by the Kleinmond Municipality to undertake the Environmental Process for the proposed construction of a community hall on the property. The project entailed the compilation of an application form and scoping checklist, and undertaking a public participation process.
2004	Project Staff	Proposed Oostenberg Refuse Transfer Station, Cape Town, Western Cape, South Africa Appointed by the then Oostenberg Municipality to undertake the Environmental Process for the proposed construction of a refuse transfer station. Involved in assisting with the compilation of the Scoping Report for the project.
2004	Project Staff	Drakenstein Municipality State of Environment Report, Western Cape, South Africa Appointed by the Drakenstein Municipality to undertake the studies necessary to undertake a detailed assessment of all aspects of the environment within the Drakenstein Municipal Boundary. Involved in the compilation of a photo documentary of the Berg River and major tributaries, a visual river survey, and water sampling. Assisted in the compilation of the chapter entitled "A Situational Assessment of the Berg River System".

R.M. Holland

2. ENVIRONMENTAL MANAGEMENT PLANS (EMP) AND ENVIRONMENTAL CONTROL (ECO) WORK

2014	Project Manager	Wolwerivier Farm Operational Environmental Management Plan (OEMP), Melkbosstrand, Western Cape, South Africa. Appointed by Mr Marthinus Stoffberg to compile an OEMP for his farming operation on Wolwerivier Farm which is leased from Garden Cities (Inc).
2013	Environmental Control Officer	Delft TRA-6 Low Cost Housing Project, Delft, Western Cape, South Africa. Appointed by Power Construction, responsible for the implementation of the Environmental Awareness Training Course and monitoring and auditing compliance with the EMP for this low cost housing project.
2012 to 2013	Member of Project Team	Ghaghoo Diamond Mine, Central Kalahari Game Reserve, Botswana. Appointed by Gem Diamonds, Botswana (Pty) Ltd, to undertake an external Audit of compliance with the EMP, Monitoring Plan and Environmental Conditions of Authorization for the Project. The appointment also included assisting the site team with EMP and monitoring plan implementation on site, as well as training of the newly appointed site Environmental Officer.
2013 to present	Environmental Control Officer	Caledon Low Cost Housing Project, Caledon, Western Cape, South Africa. Appointed by Power Construction (on behalf of the Theewaterskloof Municipality). Responsible for the implementation of the Environmental Awareness Training Course and monitoring and auditing compliance with the EMP for this low cost housing project.
2012 to 2014	Environmental Consultant and Control Officer	Kapteinskop Road Maintenance and Repair, Aurora, Western Cape, South Africa. Appointed by the Department of Public Works to compile a Construction EMP for the project, and to act as Environmental Control Officer for the duration of the project
2013 to present	Environmental Control Officer	Bot River Low Cost Housing Project, Bot River, Western Cape, South Africa. Appointed by Power Construction (on behalf of the Theewaterskloof Municipality). Responsible for the implementation of the Environmental Awareness Training Course and monitoring and auditing compliance with the EMP for this low cost housing project.
2010 to date	Environmental Site Officer	Lake Michelle Housing Estate, Noordhoek, Western Cape, South Africa. Appointed by various owners within the estate to undertake the environmental monitoring of house construction. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP
2010 to 2012	Environmental Control Officer	Driftsands Nature Reserve Hiking Trail, Western Cape, South Africa. Appointed by Cape Nature. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of phase 1 & 2 of the new hiking trail within the reserve.
2013	Environmental Control Officer	Eerste River Bank Stabilization Project, Stellenbosch, Western Cape, South Africa. Appointed by Remgro PTY Ltd. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the installation of gabions and associated erosion repair works on a reach of the Eerste River, Stellenbosch, Western Cape.

R.M. Holland

2010 to 2012	Member of Project Team	Millennia Park Extension and Refurbishment - Green Building Project, Stellenbosch, Western Cape, South Africa. Appointed by Remgro PTY Ltd. Responsible for the compilation of a combined Green Star SA and NEMA compliant Environmental Management Program, as well as the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction phase of this Green Star SA registered project.
2011	Environmental Consultant and Control Officer	Cleanup of a sediment spill into the Liesbeek River, Cape Town, Western Cape, South Africa Appointed by WBHO Pty Ltd to compile a management plan for adoption by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), in respect of the emergency clean-up of a portion of the Liesbeek River which was inadvertently polluted with sediment from a construction site. Following the adoption of the management plan by DEA&DP, responsibilities included the environmental monitoring of the clean-up operation and co-ordination of specialist input
2010	Member of Project Team	Eastgate 20 Office Complex - Green Building Project, Johannesburg, Gauteng, South Africa. Appointed by Amathemba Environmental Management Consulting CC. Responsible for the compilation of the Green Star SA compliant Environmental Management Plan for the construction phase of this Green Star SA registered project.
2009 to 2011	Environmental Control Officer	Alpen Sewerage Pumpstation and Rising Main, Constantia, Western Cape South Africa. Appointed by Aurecon Pty Ltd, Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for the construction of a new pumpstation and 2km sewer pipeline
2009	Project Manager	Proposed Construction of the Groenvlei Farm Dam, Citrusdal, Western Cape, South Africa. Appointed by Mouton Citrus. Responsible for the compilation of the Environmental Management Program for the proposed new irrigation dam.
2009	Project Manager	Erf 1591, Simons Town, Western Cape, South Africa. Appointed by the Avril Ocean Trust. Responsible for the compilation of the Environmental Management Program for the proposed housing development.
2011 and 2008	Project Manager	Long Beach Mall OEMP Audit, Cape Town, Western Cape, South Africa: Appointed by Growthpoint Properties (PtY) Ltd to undertake an Audit of the Operational Phase Environmental Management Plan for the Long Beach Mall shopping centre for the 2008 and 2011 audit periods. Responsibilities included auditing compliance with the OEMP for the project and the compilation of an audit report outlining the degree of compliance with the OEMP as well as recommendations for changes required to the OEMP and management practices to improve environmental management of the site
2008	Project Manager	Sea Lodge, Bloubergstrand, Western Cape, South Africa. Appointed by Portland (Pty) Ltd. Responsible for the compilation of a construction phase Environmental Management Plan for the proposed luxury apartment complex.
2008 to 2009	Environmental Control Officer	Bisschop Road Electrical Cable, Cape Town, Western Cape, South Africa: Appointed by City of Cape Town. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for the installation of a high voltage electrical cable between Wynberg and Hout Bay.
2008 to 2011	Environmental Control Officer	Gugulethu Square Shopping Centre, Gugulethu, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of this large new shopping precinct.

R.M. Holland

2008 to 2009	Environmental Control Officer	Bainskloof Housing Estate and Conference Centre, Wellington, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP.
2008 to 2013	Environmental Control Officer	Stellenbosch Urban Re-newal Project, Stellenbosch, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the redevelopment of an area covering 4 city blocks (centred around the Eikestad Mall) in central Stellenbosch.
2008 to Date	Environmental Control Officer	Mitchell's Plain District Hospital, Mitchell's Plain, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of this large new provincial hospital.
2008 to 2012	Environmental Control Officer	Fisantekraal Waste Water Treatment Works, Fisantekraal, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of this new waste water treatment works, including the construction of the outlet works into the Mosselbank River.
2008 to 2011	Environmental Control Officer	Fisantekraal Sewer Line and Pumpstation, Fisantekraal, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for the construction of a new pumpstation and 7km sewer pipeline.
2007	Environmental Control Officer	Riverbank Stabilization of a portion of the Liesbeek River, Kirstenbosch Drive, Cape Town, Western Cape, South Africa Subcontracted to Ninham Shand Pty Ltd. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for the installation of gabions for the stabilization of a portion of the bank of the Liesbeek River adjacent to the remainder of Erf 240, Kirstenbosch Drive, Cape Town.
2006 to 2009	Environmental Control Officer	Helderstroom Prison, Caledon, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of additional staff quarters, sports facilities, and a filling station at the prison.
2005 to 2009	Environmental Control Officer	Tygerfalls Mixed Use Development, Bellville, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of two separate commercial developments (The Cliffs & Avanti Towers) within the development precinct.
2005 to 2012	Environmental Control Officer	N2 Gateway Housing Project, Langa, Gugulethu and Delft, Western Cape, South Africa: Compiled construction phase Environmental Management Plan (EMP) for the construction of the "New Rest" Low Cost Housing Project. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of five separate housing and infrastructure projects undertaken under the auspices of the N2 Gateway housing project.
2004 to 2009	Environmental Control Officer	Lagoon Beach Housing, Hotel& Shops, Milnerton, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of three separate commercial developments within the development precinct.
2006 to 2009	Project Staff & Environmental Control Officer	Western Cape Sport Shooting Union - new shooting range near Atlantis, Western Cape, South Africa: Compiled construction phase Environmental Management Plan (EMP) and Operational Phase Environmental Management Plan for the construction of a new shooting range complex, as well as

R.M. Holland

		developing the Environmental Awareness Training Course for construction personnel and monitoring compliance with the EMP.
2006 to 2008	Environmental Control Officer	Patryfontein Piggery, Fisantekraal, Western Cape, South Africa: Appointed by Garden Cities (inc) responsible for writing the method statements for closure and cleanup of an illegal pig farming operation on the property, including the monitoring of the cleanup and rehabilitation of the Mosselbank River, to the satisfaction of DWAF and the City of Cape Town.
2006 to 2008	Environmental Control Officer	Diep River Bridge, near Kilarney, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of a new provincial road bridge across the Diep River.
2006 to 2008	Environmental Control Officer	Bergvliet Farm Housing Development, Cape Town, Western Cape, South Africa: Appointed by Invest Afrique (Pty) Ltd. Compiled construction phase Environmental Management Plan (EMP) for the construction of the Bergvliet Farm Housing Development, as well as developing the Environmental Awareness Training Course for construction personnel and monitoring compliance with the EMP.
2004 to 2008	Environmental Control Officer	Bella Roas Village, Mixed Use Development, Bellville, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP, for the construction of this large mixed residential and commercial development.
2006 to 2008	Environmental Control Officer	Wellington – Hermon MR23 Road Upgrade, Wellington, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP.
2006 to 2008	Environmental Control Officer	The Bantry Luxury Apartment Complex, Bantry Bay, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for this construction of a luxury apartment complex, in close proximity to the coastal zone.
2006 to 2007	Environmental Control Officer	Lustigan Road Water Pipeline, Paarl, Western Cape, South Africa: Appointed by Drakenstein Municipality. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for a 5 km water pipeline.
2007	Environmental Control Officer	Erf 240, Kirstenbosch Drive, Cape Town, Western Cape South Africa: Responsible for the monitoring of rehabilitation and bank stabilization of the Liesbeek River at this location. Responsible for the Environmental Awareness Training of workforce, monitoring compliance with the EMP, and compilation of a compliance report upon project completion.
2006	Environmental Control Officer	Withoogte Dam, Wellington, Western Cape, South Africa: Appointed by Drakenstein Municipality. Compiled construction phase Environmental Management Plan (EMP) for the emergency maintenance of the Dam, and water supply pipeline to Wellington, as well as developing the Environmental Awareness Training Course for construction personnel and monitoring compliance with the EMP.
2006	Environmental Control Officer	Orange Kloof Electrical Cable, Table Mountain National Park, Western Cape, South Africa: Appointed by City of Cape Town. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for the installation of a high voltage electrical cable between Constantia Neck, and the Orange Kloof water purification works.

R.M. Holland

2006 to 2007	Environmental Control Officer	Newtown Effluent Pipeline, between Wellington and Paarl Waste Water Treatment Works, Western Cape, South Africa: Appointed by Drakenstein Municipality. Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for this 11km effluent pipeline.
2006 to 2007	Environmental Control Officer	Land en Zeezicht housing development, Somerset West, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP.
2005	Environmental Control Officer	Overberg Roads Re-gravelling, Overberg, Western Cape, South Africa: Responsible for Environmental Awareness Training of site staff, monitoring compliance with the EMP, and the assessment of borrow pits following flood damage.
2004 to 2005	Environmental Control Officer	Eventide Luxury Apartment Complex, Bantry Bay, Western Cape, South Africa: Responsible for the implementation of the Environmental Awareness Training Course and monitoring compliance with the EMP for this construction of a luxury apartment complex, in close proximity to the coastal zone.
2003 to 2006	Environmental Control Officer	Film and Events Industry, Western Cape, South Africa: Numerous (approximately 130 in total) Environmental Control Officer assignments on both Stills and Commercial Productions. Responsible for monitoring compliance with permit conditions, as well as the EMP for the shoot, if applicable. Served as the ECO Coordinator for Amathemba Environmental Management Consulting CC, during this time period, responsible for the management and allocation of the requisite human resources to meet the obligations of bookings by film companies. Responsibilities also included marketing of the firm to the Film and Events Industry.

3) Lecturing:

2006 to date	Assistant Lecturer	University of the Western Cape, Cape Town, Western Cape, South Africa: Responsible for annually co-lecturing a module on Environmental Management, as well as conducting a practical field excursion to a construction site for the post graduate students within the Geography Department.
2008	Assistant Lecturer	Cape Peninsula University of Technology, Cape Town, Western Cape, South Africa: Responsible for giving a lecture on Construction Phase EMP's, the Construction Management students as part of their Environmental module.
2009 to date	Guest Lecturer	University of Cape Town, Cape Town, Western Cape, South Africa: Responsible for annually co-presenting a lecture on Environmental Management Programs, to post-graduate Landscape Architect students as part of their Environmental Management module.

R.M. Holland

4) Other Environmental Work:

2005 to 2010	Project Staff	Off Road Vehicle Permitting and Capacity Building for Marine and Coastal Management, South Africa: Member of the external consulting team assisting MCM in the review and processing of applications for authorization for vehicle use in the coastal zone, in terms of the National Environmental Management Act, Off Road Vehicle regulations. Additional responsibilities include capacity building, and training of MCM staff.
2008 to 2012	Field Assistant	Table Mountain Group Aquifer Project, Western Cape, South Africa: Field assistant for the freshwater specialist investigation into the potential impact of the proposed supplementation of the water supply to the City of Cape Town, and surrounding areas, via harvesting of water from the Table Mountain Group aquifer, on freshwater ecosystems. Responsibilities included assistance with water quality sampling (water chemistry) as well as invertebrate sampling, and algal sampling in various headwater streams and wetlands within the study area.
2007	Field Assistant	Proposed Worcester Island Residential Development, Worcester Dam, Western Cape, South Africa: Field assistant for the specialist investigation into the potential impact of the proposed residential development on freshwater ecosystems. Responsibilities included assistance with water quality sampling (water chemistry) as well as invertebrate sampling.
2007	Field Assistant	Proposed Upgrade of the Waste Water Treatment Works at Spier, Western Cape, South Africa: Field assistant for the specialist investigation into the potential impact of the proposed WWTW upgrade on freshwater ecosystems. Responsibilities included assistance with water quality sampling (water chemistry) as well as invertebrate sampling.
2000 - 2002	Senior Image Processing Analyst and Project Manager	The Millenium Map Project, United Kingdom: The project entailed the ortho-rectification, and creation of seamless mosaics, from various datasets of aerial imagery in order to create an updated, hi resolution, seamless aerial map of the United Kingdom. Responsible for managing individual projects, liaison with clients, quality assurance, management of staff and resources, attendance at production meetings and maintaining forward load/ project progress information.

COUNTRIES OF WORK EXPERIENCE:

South Africa ; United Kingdom ; Lesotho ; Botswana

EDUCATION:

- BSc (Environmental and Geographical Science and Economics), University of Cape Town, South Africa, 1997.
- BSc (Hons) (Environmental and Geographical Science), University of Cape Town, South Africa, 1998.
- MSc (Environmental and Geographical Science), University of Cape Town, South Africa, 2000.
- The Framework Programme for Education & Training in Water. Certificates of competence held with distinction, in "Water Quality" and "Aquatic Ecology", University of Cape Town, South Africa, 2007.
- Green Star SA Accredited Professional Course and Exam, Green Building Council of South Africa, 2010.

R.M. Holland

EMPLOYMENT RECORD:

2003 to date	Self employed t/a Holland & Associates Environmental Consultants and free lance sub-contractor to the environmental consulting industry.
2002 - 2003	Franchised, DSA Approved, Professional Driving Instructor working through Britannia Driving School, Wimbledon, London, United Kingdom
2000 - 2002	Project Manager and Senior Applications Analyst, working on various mapping projects, Geosense Limited, Cape Town, South Africa
1998 - 2000	Tutor & Demonstrator for the following courses; ERT 100, EGS101, EGS212 & EGS 314, University of Cape Town, Cape Town, South Africa
1997	Volunteer Parliamentary Monitor, monitoring working committees on Agriculture, Environmental Affairs, Water & Forestry, Parliamentary Monitoring Group, Cape Town, South Africa
1995 – 1998	Short term contractor to Mossgas (PTY) Ltd (now PetroSA) undertaking various internal environmental audit investigations on a contract basis

LANGUAGES:

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Fair	Good	Good

PUBLISHED PAPERS:

J. Boardman, A. J. Parsons, R. Holland, P. J. Holmes and R. Washington (2003). Development of badlands and gullies in the Sneeuberg, Great Karoo, South Africa. *Catena* Volume 50, Issues 2-4, Pages 165-184

AWARDS:

SAAF Museum/ Royal Air Forces Association (South Africa Area) (Sept. 2000)
Meritorious Service Award. Awarded in recognition of outstanding and devoted service.

York High School (1992)
Top Ten Award. Awarded in recognition of academic excellence.

N L HOLLAND

CURRICULUM VITAE

Name : Nicole Lisa Holland

Profession : Environmental Assessment Practitioner

Year of Birth : 1976

Nationality : South African

Contact Details : P.O. Box 31108, Tokai, 7966
Cell: 083 4645246
Fax: 086 7626126 (S.A only)
Email: Nicole@hollandandassociates.net

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS:

- Professional Environmental Scientist: South African Council for Natural Scientific Professions (Registration Number: 400306/06)
- Member: South African affiliate of International Association for Impact Assessment (IAIAsa)
- Founding member: Environmental Assessment Practitioners Association of South Africa

KEY QUALIFICATIONS:

Nicole Holland has a Bachelor of Science (Hons) in Environmental and Geographical Science from the University of Cape Town, specializing in Environmental Management. She has seventeen years of experience in the environmental management field and has compiled and managed numerous environmental investigations including Environmental Impact Assessments, Environmental Management Plans/Programmes (EMP), waste management license application processes, as well as applications for amendments of environmental authorizations.

Nicole has played a leading role in the development of a number of strategic environmental policies and programmes including the development of an Integrated Environmental Programme for the West Coast District; the compilation of a water resource protection sub-strategy for the Olifants Doring Catchment Management Strategy; as well as the development of an information document on environmental legislation and its associated implications for the Drakenstein Municipality's Civil Engineering Services Department.

Nicole has extensive experience in managing Environmental Impact Assessments including, amongst others, agricultural projects, water supply schemes and dams, renewable energy facilities, wastewater treatment works, housing and resort developments, cemeteries, road upgrades, pipelines, waste sites, and a cement manufacturing plant. Nicole has also undertaken the independent review of a number of Basic Assessment and Scoping and Environmental Impact Reports and has been involved in a broad spectrum of other environmental work including

Environmental Auditing, the drafting of Environmental Management Programmes, and Environmental Control Officer work.

EXPERIENCE RECORD

1) Regulatory processes and Environmental Impact Assessments

- | | | |
|----------------|---|---|
| 2018 -
2019 | Environmental
Assessment
Practitioner | <p>Proposed cultivation of virgin soil, construction of a dam and associated infrastructure on Portion 27 and Portion 17 of Farm No. 466, Scherpenheuvel, Western Cape Province</p> <p>Appointed by the Applicant to undertake a Scoping and Environmental Impact Reporting process for the proposed project. The tasks include pre-application meetings with the relevant authorities, commissioning and management of specialist studies, the compilation of the Scoping and EIA reports, Environmental Management Programme, as well as undertaking the public participation process.</p> |
| 2018 | Independent
Review
Specialist | <p>Independent review of the Basic Assessment Report for the proposed Evergreen Lake Michelle Lifestyle Retirement Village, Remainder of Erf 3823, Noordhoek, Cape Town</p> <p>Appointed by the Lake Michelle Home Owners Association as the independent review specialist to undertake the review of the Basic Assessment reporting and process for the project.</p> |
| 2017 -
2019 | Environmental
Assessment
Practitioner | <p>Proposed raising of Ou Brakfontein Dam near Citrusdal, Western Cape Province</p> <p>Appointed by Mouton Citrus (Pty) Ltd to undertake a Basic Assessment process for the proposed project. The tasks include pre-application meetings with the relevant authorities, commissioning and management of specialist studies, the compilation of a Basic Assessment Report, Environmental Management Programme, as well as undertaking the public participation process.</p> |
| 2017 -
2019 | Environmental
Assessment
Practitioner | <p>Proposed upgrade of a low level bridge over the Olifants River, near Citrusdal, Western Cape Province</p> <p>Appointed by Mouton Citrus (Pty) Ltd to undertake a Basic Assessment process for the proposed project. The tasks include pre-application meetings with the relevant authorities, commissioning and management of specialist studies, the compilation of a Basic Assessment Report, Environmental Management Programme, as well as undertaking the public participation process.</p> |

2017 - 2018	Independent Review Specialist	<p>Independent Review of the proposed mix use development of erf 173712, Cape Town, Granger Bay Precinct and associated sea defence works, V&A Waterfront, Cape Town</p> <p>Appointed by the Water Club to undertake the independent review of the Environmental Impact Assessment Report and associated public participation process.</p>
2017	Environmental Assessment Practitioner	<p>Proposed raising of Ruimsig Dam and expansion of agricultural areas, on Remainder of Portion 56 and Portion 93 of the Farm De la Haye No. 92, Near De Doorns, Western Cape</p> <p>Appointed by the Applicant to undertake a Basic Assessment process for the proposed project. The tasks include pre-application meetings with the relevant authorities, commissioning specialist studies, the compilation of a Basic Assessment Report, Environmental Management Programme, as well as undertaking the public participation process.</p>
2015 - 2016	Environmental Assessment Practitioner	<p>Worcester East Water Users Association Water Contingency Supply Scheme, Western Cape:</p> <p>Appointed by the Worcester East Water Users Association (WEWUA) to undertake a screening study for the proposed WEWUA Contingency Supply Scheme (including contingency storage dams and associated pipelines). The tasks include pre-application meetings with the relevant authorities, commissioning specialist studies (to determine Opportunities and Constraints of site), provide inputs into the planning process and the compilation of a Screening Report.</p>
2016	Environmental Assessment Practitioner	<p>10MW Augrabies PV Solar Energy facility, Northern Cape Province:</p> <p>Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation (i.e. amendment of technology from "fixed photovoltaic panels" to "single axis tracking"), including management of all specialists and undertaking the requisite public participation process.</p>
2016	Environmental Assessment Practitioner	<p>Proposed 55.5MW Wind Energy Facility near Springbok, Northern Cape Province:</p> <p>Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation (i.e. amendment to layout, turbine specifications and number of turbines), including management of all specialists and undertaking the requisite public participation process.</p>

2015 - 2016	Environmental Assessment Practitioner	132kV Transmission line from De Aar 1 WEF to Hydra Substation, Northern Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation (i.e. re-alignment of a section of the transmission line and changes to monopole footprints) including management of all specialists and undertaking the requisite public participation process.
2015 - 2016	Environmental Assessment Practitioner	Proposed 140MW Wind Energy Facility situated on the Eastern Plateau (South) near De Aar, Northern Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation (i.e. amendment to layout, turbine specifications and number of turbines), including management of all specialists and undertaking the requisite public participation process.
2012 - 2016	Environmental Assessment Practitioner	Proposed Kleinberg Dam Scheme, Hex Valley, Western Cape, South Africa: Appointed by the Hex Valley Water Users Association to undertake a Scoping & Environmental Impact Reporting process for the proposed dam scheme, including two new dams (Kleinberg & Boskloof Dams), weirs, pump stations and pipe distribution networks, in the Sandriffs Kloof of the Hex Valley. The project included the compilation of a Scoping Report, Environmental Impact Assessment Report, Environmental Management Programme as well as undertaking the public participation process for the EIA process.
2015 - 2016	Environmental Assessment Practitioner	Proposed raising of Osplaas Dam, Hex Valley, Western Cape: Appointed by the Hex Valley Water Users Association to undertake the environmental authorisation process (Basic Assessment) for the proposed raising of the Osplaas Dam and upgrade of associated infrastructure at the Grootkloof Weir. The project included the compilation of a Basic Assessment Report, Environmental Management Programme, as well as undertaking the public participation process for the EIA process.
2015 - 2016	Environmental Assessment Practitioner	Proposed cultivation of virgin soil on Remainder of Farm Monte Vista No. 43, Hex Valley, Western Cape: Appointed by Monte Vista Trust to undertake the Basic Assessment process for the abovementioned project, as well as the requisite public participation process.

2015 - 2016	Environmental Assessment Practitioner	132kV transmission line from the De Aar 2 North WEF to the Hydra Substation, Northern Cape Province: Appointed by Longyuan Mulilo De Aar 2 North (Pty) Ltd to undertake the Application for Amendment of the Environmental Authorisation (i.e. amendment to monopole footprints, including management of all specialists and undertaking the requisite public participation process.
2015	Environmental Assessment Practitioner	100MW De Aar PV3 (Badenhorst Dam), Northern Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation.
2015	Environmental Assessment Practitioner	De Aar PV4 (19.9MW) facility, Northern Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation.
2015	Environmental Assessment Practitioner	Proposed 75 – 150MW De Aar PV2 (Paarde Valley) facility, Northern Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the Application for Amendment of the Environmental Authorisation.
2014	Environmental Assessment Practitioner	Proposed 50MW Wind Energy Generation Facility in Namaqualand, Western Cape Province: Appointed by Mulilo Renewable Project Developments to undertake the public participation process for the Application for Amendment of the Environmental Authorisation.
2014 – 2015	Independent Review Specialist	The independent review of Basic Assessment Reports for proposed borrow pits for the supply of materials for the re-gravelling and maintenance of various roads in the Western Cape: Appointed by Aurecon (Pty) Ltd to undertake the independent (peer) review of the Final Basic Assessment Reports for the above mentioned project within the Western Cape.
2014	Project Manager & Environmental Assessment Practitioner	Proposed upgrade and relocation of the CCA and TBTN treatment Plants at Somerset Timbers, Strand, Western Cape: Appointed by Somerset Timbers (The Keith Wetmore Family Trust) to undertake the application process for the adoption/definition of an ad-hoc setback line for the proposed upgrade and relocation of their CCA and TBTN timber treatment plants at their premises in Strand. The project included preparation of the setback line application to the Department of Environmental Affairs and Development Planning as well as a public participation process.

2013-2015	Project Manager & Environmental Assessment Practitioner	<p>Proposed upgrading of a road leading to the Moss gas Quay, Port of Saldanha, Western Cape:</p> <p>Appointed by Element Consulting Engineers, on behalf of Transnet National Ports Authority, to undertake the Basic Assessment Process for the upgrading of a road leading to the Moss gas Quay in the Port of Saldanha. The project included the compilation of a Basic Assessment Report, Environmental Management Programme as well as undertaking the public participation process.</p>
2013	Project Manager & Environmental Assessment Practitioner	<p>Proposed Stormwater Channels and water supply pipeline for the construction of the Mouton Citrus Pack House, Citrusdal, Western Cape:</p> <p>Appointed by Mouton Citrus Pty Ltd to undertake the application process for the adoption/definition of an ad-hoc setback line for the proposed development on Portion 2 of the Farm Groot Valley No. 451 (Gelukwaard), Clanwilliam. The project included preparation of the setback line application to the Department of Environmental Affairs and Development Planning as well as a public participation process.</p>
2012 – 2013	Project Manager & Environmental Assessment Practitioner	<p>Proposed upgrading of the Paarl Mountain and Ysterbrug pumping mains, Paarl, Western Cape:</p> <p>Appointed by Aurecon South Africa (Pty) Ltd, on behalf of the Drakenstein Municipality, to undertake a Basic Assessment Process for the Paarl Mountain and Ysterbrug pumping main upgrades on Paarl Mountain (a declared Provincial Heritage Site) in Paarl. The project includes the compilation of a Basic Assessment Report, Environmental Management Programme as well as undertaking the public participation process.</p>
2012	Project Manager & Environmental Assessment Practitioner	<p>Raising of Keerom Dam near Worcester, Western Cape:</p> <p>Appointed by the Nuy Irrigation Board to undertake a Basic Assessment Process for the raising of the Keerom Dam near Worcester. The project included the compilation of a Basic Assessment Report, Environmental Management Programme as well as undertaking the public participation process.</p>
2011	Specialist Reviewer	<p>Environmental Advisor and specialist reviewer for Treasure the Karoo Action Group: Hydraulic Fracturing in the Karoo, South Africa:</p> <p>Appointed by Havemann Inc on behalf of Treasure the Karoo Action Group for the provision of environmental advisory services and review of various petroleum companies Applications and Environmental Management Programme Reports in terms of the Minerals and Petroleum Resources Development Act.</p>

2011	Specialist Reviewer	Mothae Diamond Mine, North-Eastern Lesotho: Appointed by Amathemba Environmental Management Consulting CC to undertake the external review of environmental reports associated with the application for environmental authorization to undertake the proposed development.
2011	Project Manager / Environmental Assessment Practitioner	Paarl bulk sewer: Application for amendment of the environmental authorisation, Paarl, Western Cape: Appointed by Lyners consulting engineers to undertake an application for amendment of the environmental authorisation for the new Paarl South gravity outfall sewer (Paarl Bulk sewer). The project is to include the completion of the necessary forms, site assessment, assessment of potential impacts and a public participation process.
2011	Project Manager	Proposed AfriSam cement plant, limestone and clay quarries and associated infrastructure in Saldanha, Western Cape: Appointed by AfriSam (South Africa) (Pty) Ltd to undertake a Scoping and Environmental Impact Assessment process (EIA) for the proposed construction of a cement plant, limestone and clay quarries and a transportation corridor (road/ conveyor) linking the quarries to the cement plant, in Saldanha, Western Cape. In addition to an application in terms of the NEMW EIA regulations, the project included an application for the requisite waste management license in terms of the National Environmental Management: Waste Act and Atmospheric Emissions Licence in terms of the National Environmental Management: Air Quality Act.
2011	Project Manager/ Environmental Assessment Practitioner	Proposed wind energy facility near Gouda, Western Cape: Appointed by iNca Energy to undertake a Scoping and Environmental Impact Assessment (EIA) for a proposed wind energy facility (30 MW) on Portion 1 of Farm 397 and Portion 2 of Farm 397 near Gouda in the Western Cape, including the construction of two 66kV overhead powerlines to connect into the ESKOM grid.
2011	Project Manager/ Environmental Assessment Practitioner	Proposed wind energy facility near Vredenburg, Western Cape: Appointed by iNca Energy to undertake a Scoping and Environmental Impact Assessment (EIA) for a proposed wind energy facility (30 MW) on Remainder of Farm 103, Waterklip, Portion 6 of Farm 103, Waterklip, Portion 3 of Farm 105, Zandfontein and Portion 5 of Farm 105, Zandfontein near Vredenburg in the Western Cape, including the construction of two 66kV overhead powerlines to connect into the ESKOM grid.

2011	Environmental Advisor	<p>Upgrading of Wellington Wastewater Treatment Works, Western Cape:</p> <p>Provision of environmental advisory services to Aurecon's wastewater engineers and the appointed environmental consultants, including the drafting of specialists' terms of reference and review of specialist reports.</p>
2009-2010	Project Manager/ Environmental Assessment Practitioner	<p>Application for amendment of Environmental Authorisation: Paarl South Gravity Outfall Sewer:</p> <p>Appointed by Lyners Engineers to undertake an application for amendment of the Environmental Authorisation for the project, which included realignment of portions of the pipeline along the Berg River and additional pipeline river crossings.</p>
2009 - 2010	Project Manager/ Environmental Assessment Practitioner	<p>Proposed upgrading of the Piketberg Wastewater Treatment Works, Western Cape, South Africa:</p> <p>Appointed by Water & Wastewater Engineer to undertake a Scoping and Environmental Impact Assessment (EIA) for the proposed upgrading of the Piketberg Wastewater Treatment Works, including an application for the requisite waste management license in terms of the National Environmental Management: Waste Act.</p>
2008 - 2009	Project Manager/ Environmental Assessment Practitioner	<p>Proposed construction of a disinfection plant at the Athlone Wastewater Treatment Works, Western Cape, South Africa:</p> <p>Appointed by City of Cape Town (Wastewater Directorate) to undertake a Scoping and Environmental Impact Assessment for the proposed construction of a disinfection plant at the Athlone Wastewater Treatment Works (WWTW). The project entailed the compilation of a Scoping Report, Environmental Impact Report and undertaking a public participation process.</p>
2008	Project Manager/ Environmental Assessment Practitioner	<p>Proposed flow diversion at Green Point Outfall Sewer, Green Point, Western Cape, South Africa:</p> <p>Appointed by City of Cape Town (Wastewater Directorate) to undertake a Basic Assessment for the proposed flow diversion at the Green Point Outfall Sewer in Green Point, Cape Town. The project entailed the compilation of a Basic Assessment Report and undertaking a public participation process.</p>
2007 - 2008	Project Manager/ Environmental Assessment Practitioner	<p>Upgrading of the Malmesbury Wastewater Treatment Works, Malmesbury, Western Cape, South Africa:</p> <p>Appointed by the Swartland Municipality to undertake an EIA for the upgrading of the Malmesbury Wastewater Treatment Works. The project entailed the compilation of Application Form and Scoping Checklist, Background Information Document, Scoping Report and undertaking a public participation process.</p>

2006 to 2009	Project Staff/ Environmental Assessment Practitioner	Raising of Clanwilliam Dam in the Western Cape, South Africa: The Department of Water Affairs and Forestry initiated a study to consider the feasibility of raising the Clanwilliam Dam whilst undertaking required remedial works. The study included a comprehensive options assessment to identify the preferred suite of development options within the Water Management Area (WMA). The study verified the technical, environmental, social, economic and financial viability of raising the Clanwilliam Dam and determined the optimal dam height. Alternatives for increasing supply volumes were investigated in relation to social development needs in the region. This study included an extensive public consultation and an EIA process.
2005 - 2008	Project Manager/ Environmental Assessment Practitioner	Drakenstein Wastewater Treatment Strategy: Siting of Paarl South Wastewater Treatment Works, Paarl, Western Cape, South Africa. Appointed by Drakenstein Municipality to undertake an EIA for the siting of the future Paarl South WWTW. The project entailed the compilation of Application Form and Scoping Checklist, Background Information Document, Scoping Report, Environmental Impact Report and undertaking a public participation process.
2005 - 2006	Project Staff/ Environmental Assessment Practitioner	Drakenstein Wastewater Treatment Strategy: Upgrading of Paarl Wastewater Treatment Works and construction of the Paarl South outfall sewer, Paarl, Western Cape, South Africa. Appointed by Community Engineering Services, on behalf of the Drakenstein Municipality, to undertake an EIA for the proposed projects. The project entailed the compilation of Application Form and Scoping Checklist, Background Information Document, Scoping Report, Environmental Impact Report and undertaking a public participation process.
2005 - 2007	Project Staff/ Environmental Assessment Practitioner	Proposed Development of Portion 75 of Farm 205, Rugte Valley, Lake Pleasant, Southern Cape, South Africa: Appointed by Craig Anderson to undertake an environmental evaluation of the site, to determine the opportunities and constraints of the property and compilation of an Application Form and Scoping Checklist.
2005 - 2006	Project Staff/ Environmental Assessment Practitioner	Construction of Saxdowns Road between Hindle Road and Stellenbosch Arterial, Blue Downs, Western Cape, South Africa: Appointed by Jeffares and Green for the City of Cape Town: Oostenberg Administration to undertake an EIA for the proposed construction of Saxdowns Road between Hindle Road and Stellenbosch Arterial. The project entailed the compilation of an Application Form and Scoping Checklist, Background Information Document and Scoping Report and included a public participation process.

2005	Project Staff/ Environmental Assessment Practitioner	Proposed Upgrading of the Bonnievale Wastewater Treatment Works, Bonnievale, Western Cape, South Africa: Appointed by the Breede River Winelands Municipality to undertake an EIA for the proposed upgrade of the Bonnievale Wastewater Treatment Works. The project entailed the compilation of an Application Form and Scoping Checklist, Background Information Document, Scoping Report and undertaking a public participation process.
2005	Project Staff/ Environmental Assessment Practitioner	Proposed Construction of an effluent pipeline between the New Town Pump Station in Wellington and the Paarl Wastewater Treatment Works, Paarl, Western Cape, South Africa: Appointed by Community Engineering Services, on behalf of the Drakenstein Municipality, to undertake an EIA for the proposed construction of an effluent pipeline between the New Town Pump Station in Wellington and the Paarl Wastewater Treatment Works. This involved the compilation of an Application Form and Scoping Checklist, and a public participation process.
2005	Project Staff/ Environmental Assessment Practitioner	Upgrading of the Hex River Valley Weirs, Hex River Valley, Western Cape, South Africa: Appointed by the Hex Valley Irrigation Board, in association with the Drieriviere Irrigation Board and Worcester East Water Users Association to undertake an EIA for the conversion of the existing Keurhoekkloof, Moraine Kloof and Sand River diversion weirs into measuring stations, and the construction of a new measuring station at Upper Buffelshoek or Dome Kloof. The project entailed the compilation of four Application Forms and Scoping Checklists.
2005	Project Staff/ Environmental Assessment Practitioner	Further raising of the Zyperfontein Dam, Vanrhynsdorp, Western Cape, South Africa: Appointed by the Doringrivier Trust to undertake the an EIA for the proposed further raising of the Zyperfontein Dam. This included the compilation of an Application Form and Scoping Checklist and public participation process.
2004 - 2005	Project Staff/ Environmental Assessment Practitioner	Upgrading of the Darling Wastewater Treatment Works, Darling, Western Cape, South Africa: Appointed by the Swartland Municipality to undertake an EIA for the proposed upgrading of the Darling Wastewater Treatment Works. The project entailed the compilation of a Background Information Document and an Application Form and Scoping Checklist, as well as a public participation process.
2004	Project Staff	Eastford Residential Estate, Knysna, Southern Cape, South Africa: Appointed by Garden Route Quarries (Pty) Ltd. to undertake an EIA for the proposed Eastford residential estate and commercial node, including the compilation of an Application Form and Scoping Checklist, Background Information Document and Scoping Report.

2004	Project Staff	Little Ladywood Residential Estates, Plettenberg Bay, Southern Cape, South Africa: Appointed by Swanvest 321 (Pty) Ltd. to undertake an EIA for the development of the proposed Little Ladywood Residential Estate.
2004	Project Staff	Erf 2 Gordons Bay Residential Development, Gordons Bay, Western Cape, South Africa: Appointed by Gordonia Mount Properties (Pty) Ltd. to undertake an EIA for the development of a residential estate. The project entailed the compilation of an Application Form and Scoping Checklist, Background Information Document and public participation process.
2004	Project Staff	Gloria Cove Resort Housing Development, Theewaterskloof Dam, Western Cape, South Africa: Appointed by Martinique Bay Marketing cc. to undertake an EIA for the proposed Gloria Cove resort development on the Theewaterskloof Dam. The project entailed the compilation of an Application Form and Scoping Checklist and Scoping Report, as well as a public participation process.
2004	Project Staff	Erf 86 Development, Jacobsbaai, Western Cape, South Africa: Appointed by Spring Romance 16 (Pty) Ltd. to undertake an EIA for the development of residential and resort erven. The project included the compilation of an Application Form and Scoping Checklist.
2004	Project Staff	Gamka Private Nature Reserve, Calitzdorp, South Africa: Appointed to undertake an EIA for the proposed Gamka Private Nature Reserve in Calitzdorp. The project included the compilation of an Application and Scoping Checklist and Background Information Document, as well as a public participation process.
2003 - 2004	Project Staff	Verlorenvlei Coastal Game and Nature Reserve, Piketberg, Western Cape, South Africa: Appointed by Dezzo Trading 126 (Pty) Ltd. to undertake an EIA for the proposed Verlorenvlei Coastal Game and Nature Reserve. The appointment entailed the compilation of an Application Form and Scoping Checklist, Background Information Document, Scoping Report and undertaking a public participation process.
2003 - 2004	Project Staff	Langezandt Fishermen's Village Development, Struisbaai, Western Cape, South Africa: Appointed by Expectra 525 (Pty) Ltd. to undertake a full EIA for the development of the proposed Langezandt Fishermen's Village, including the compilation of an Application Form and Scoping Checklist, Background Information Document, Scoping Report and Environmental Impact Report.

2003 - 2004	Project Staff	Longlands Estate and Agricultural Village, Vlottenburg, Stellenbosch, Western Cape, South Africa: Appointed by SLC Development Services (Pty) Ltd. to undertake a full EIA process for the development of the proposed Longlands Residential Estate and Agricultural village, including the compilation of an Application Form and Scoping Checklist, Background Information Document, Scoping Report and Environmental Impact Report.
2003 - 2004	Project Staff	Two Oceans Golf Estate and Resort, Bredasdorp, Western Cape, South Africa: Appointed by Twin Palm Projects (Pty) Ltd. to undertake an EIA for the proposed Two Oceans Golf Estate and Resort development, including the compilation of an Application Form and Scoping Checklist, Background Information Document and Scoping Report, and public participation process.
2003	Project Staff	Ashton – Montagu Water Pipeline, Western Cape, South Africa: Appointed by the Breede River Winelands Municipality to undertake an EIA for the construction of a water pipeline from Ashton to Montagu. The appointment entailed the compilation of an Application Form and Scoping Checklist, Scoping Report, public participation process and Environmental Management System.
2003	Project Staff	Closure and Rehabilitation of the Arniston, Struisbaai and L'Agulhas Waste Disposal Sites, Western Cape, South Africa: Appointed by the Cape Agulhas Municipality to undertake and EIA for the closure and rehabilitation of the L'Agulhas, Struisbaai and Arniston waste disposal sites. The project entailed the compilation of an Application Form and Scoping Checklist and Scoping Report, and public participation process.
2003	Project Staff	Langebaan Eco-Lodge, Langebaan, Western Cape, South Africa: Appointed by G&R Project Services and Developers (Pty) Ltd., to undertake an EIA for the development of the "Langebaan Eco Lodge". This project entailed an environmental evaluation of the site and preparation of a Background Information Document.
2003	Project Staff	Upgrade of the Pennypinchers Timber Processing Plant, Cape Town, Western Cape, South Africa: Appointed by the Peter Allan Building Material Trust to undertake an EIA for the upgrade of the Pennypinchers Timber Treatment Plant. This included the compilation of an Application Form and Scoping.

2003	Project Staff	Upgrade of the Hannesbaai Fish Processing Factory, St Helena Bay, Western Cape, South Africa: Appointed by Hannasbaai Fishing Co (Pty) Ltd. to undertake an EIA for the upgrade of the Hannesbaai Fish Factory (i.e. the erection of a coal-fired boiler and development of additional storage and factory area). The project entailed the compilation of an Application Form and Scoping Checklist and a public participation process.
2002 - 2004	Project Staff	De Bosch Estate Development, Stellenbosch, Western Cape, South Africa: Appointed by Crystal Court (Pty) Ltd. to undertake a full EIA for the proposed De Bosch residential estate. The project entailed the compilation of an Application and Scoping Checklist, Background Information Document, Scoping Report and Environmental Impact Report, as well as a public participation process.
2002 - 2004	Project Staff	Draaihoek Guesthouse, Piketberg, Western Cape, South Africa: Appointed by Draaihoek (Pty) Ltd. to undertake an EIA for the development of a guesthouse, which included the compilation of an Application Form and Scoping Checklist.
2002 - 2003	Project Staff	New Villiersdorp Cemetery, Villiersdorp, Western Cape, South Africa: Appointed by the Theewaterskloof Municipality to undertake an EIA for the development of the new Villiersdorp Cemetery. The project entailed the compilation of an Application Form and Scoping Checklist, Background Information Document and Scoping Report and public participation process.
2002 - 2003	Project Staff	Trekoskraal Development, West Coast, Western Cape, South Africa: Appointed by Castle Estates (Pty) Ltd. to undertake an EIA for the development of ± 4 700 erven on the 1 362ha property. The project (to date) entailed the compilation of an Application Form and Scoping Checklist, Background Information Document and Scoping Report.
2002	Project Staff	Bokbaai Residential Conservation Smallholdings Development, Western Cape, South Africa: Appointed by Bokbaai Property (Pty) Ltd. This project entailed an environmental evaluation of the site and preparation of an Application Form and Scoping Checklist.
2002	Project Staff	Bredasdorp, Struisbaai and Napier Groundwater Development Programme, Western Cape, South Africa: Appointed by the Cape Agulhas Municipality to undertake an EIA process for a groundwater exploration programme to augment the groundwater supplies of Bredasdorp, Struisbaai and Napier. The project included the compilation of an Environmental Impact Report and requisite public participation processes.

2002	Project Staff	Bredasdorp - Arniston Water Pipeline, Western Cape, South Africa: Appointed by the Cape Agulhas Municipality to undertake an EIA for the upgrading of approximately 12km of the existing water pipeline, by construction of a new water pipeline between Bredasdorp and Waenshuiskrans/ Arniston. The project entailed an environmental site evaluation and compilation of an Application Form and Scoping Checklist.
2002	Project Staff	Koo Valley Groundwater Supply Scheme, Western Cape, South Africa: Appointed by the Koo Irrigation Board for the Department of Economic Affairs, Agriculture and Tourism to undertake a full EIA for the Koo Valley Groundwater Supply Scheme.
2002	Project Staff	Rivers Edge Resort, Bonnievale, Western Cape, South Africa: Appointed by Toekomsbeleggings Nr. 1 (Edms) Bpk to undertake an EIA for the development of the Rivers Edge Resort Development.
2002	Project Staff	Sixteen Mile Beach Development, Yzerfontein, Western Cape, South Africa: Appointed by Kovacs Investments 172 (Pty) Ltd. to undertake an EIA for the proposed Sixteen Mile Beach resort development, including the compilation of an Application Form and Scoping Checklist.
2002	Project Staff	Still Bay Jetski's, Western Cape, South Africa: Appointed by the Langeberg Municipality to undertake an Environmental Assessment to address the recreational use of Jet Ski's off the Still Bay coastline.
2002	Project Staff	Swartstomp Resort Development, Theewaterskloof Dam, Western Cape, South Africa: Appointed by Mr C.J. Roux to undertake an EIA for the development of Swartstomp resort, including the compilation of an Application Form and Scoping Checklist and public participation process.

2) Assessment of Water Resource Developments and Catchment Management:

2012 - date	Project Manager & Environmental Assessment Practitioner	Proposed Kleinberg Dam Scheme, Hex Valley, Western Cape, South Africa Appointed by the Hex Valley Water Users Association to undertake a Scoping and Environmental Impact Reporting process for the proposed off stream Kleinberg Dam, Boskloof Dam and pipe distribution networks in the Sandrifthkloof of the Hex Valley. The project includes the compilation of a Scoping Report, Environmental Impact Assessment Report, Environmental Management Programme as well as undertaking the public participation process for the EIA process.
----------------	---	---

2012	Project Manager & Environmental Assessment Practitioner	Raising of Keerom Dam near Worcester, Western Cape, South Africa Appointed by the Nuy Irrigation Board to undertake a Basic Assessment Process for the raising of the Keerom Dam near Worcester. The project included the compilation of a Basic Assessment Report, Environmental Management Programme as well as undertaking the public participation process.
2009	Project staff/ Environmental Assessment Practitioner	C.A.P.E. Olifants Doorn Catchment Management Agency Project, Western Cape, South Africa: Appointed by CapeNature to compile the catchment management strategy water resource protection sub-strategy for the Olifants-Doorn catchment.
2006 to 2009	Project staff/ Environmental Assessment Practitioner	Raising of Clanwilliam Dam in the Western Cape, South Africa The Department of Water Affairs and Forestry initiated a study to consider the feasibility of raising the Clanwilliam Dam whilst undertaking required remedial works. The study included a comprehensive options assessment to identify the preferred suite of development options within the Water Management Area (WMA). The study verified the technical, environmental, social, economic and financial viability of raising the Clanwilliam Dam and determined the optimal dam height. Alternatives for increasing supply volumes were investigated in relation to social development needs in the region. This study included an extensive public consultation and an EIA process.
2005	Project Staff/ Environmental Assessment Practitioner	Upgrade of the Hex River Valley Weirs, Hex River Valley, Western Cape, South Africa: Appointed by the Hex Valley Irrigation Board, in association with the Drieriviere Irrigation Board and Worcester East Water Users Association to undertake an EIA for the conversion of the existing Keurhoekkloof, Moraine Kloof and Sand River diversion weirs into measuring stations, and the construction of a new measuring station at Upper Buffelshoek or Dome Kloof.
2005	Project Staff	Raising of the Zypherfontein Dam, Vanrhynsdorp, Western Cape, South Africa: Appointed by the Doringrivier Trust to undertake an EIA for the proposed raising of the Zypherfontein Dam.

2004 to date	Assistant Project Manager	Southern High Confidence Reserve Determination: Project Management, Western and Eastern Cape, South Africa: The Resource Directed Measures Directorate of the Department of Water Affairs and Forestry (DWAF) is tasked with the responsibility of determining Reserve requirements. The Reserve refers to the quality and quantity of water that is required to sustain aquatic ecosystems and basic human needs. The Olifants/ Doring and the Kromme/ Seekoei are such stressed catchments that were selected for High Confidence Reserve Determinations. DWAF appointed Ninham Shand to manage the Southern High Confidence Reserve Determination studies on their behalf. The project entailed undertaking administrative and financial control of the technical service providers as well as review of all deliverables.
2002	Project Staff	Bredasdorp, Struisbaai and Napier Groundwater Development Programme, Western Cape, South Africa: Appointed by the Cape Agulhas Municipality to undertake an EIA process for a groundwater exploration programme to augment the groundwater supplies of Bredasdorp, Struisbaai and Napier. The project included the compilation of an Environmental Impact Report and requisite public participation processes.
2002	Project Staff	Koo Valley Groundwater Supply Scheme, Western Cape, South Africa: Appointed by the Koo Irrigation Board for the Department of Economic Affairs, Agriculture and Tourism to undertake a full EIA for the Koo Valley Groundwater Supply Scheme.

3) Environmental Management Plans:

2008- 2009	Environmental Control Officer	Upgrading and extension of the Ben Schoeman Dock at Cape Town Harbour, Western Cape, South Africa: Appointed by HMG-JV to provide the services of Environmental Control Officer for the upgrade and extension (including deepening) of the Ben Schoeman Dock at Cape Town Harbour. The primary duties and responsibilities included undertaking regular environmental audits of the project activities, and ultimately to monitoring compliance with the Record of Decision and Environmental Management Plan.
2007	Project Staff/ Environmental Assessment Practitioner	Upgrading of the Darling Wastewater Treatment Works, Darling, Western Cape, South Africa: Appointed by the Swartland Municipality to compile the Operational Phase Environmental Management Plan for the upgrading of the Darling WWTW.

2007 to 2009	Environmental Control Officer	Phase 1B expansion of the iron ore facility at the Port of Saldanha, Saldanha Bay, Western Cape, South Africa: Appointed by Transnet Projects to provide the services of Environmental Control Officer for Phase 1B expansion of the iron ore facility at the Port of Saldanha. The primary duties and responsibilities included undertaking regular environmental audits of the project activities, to act as secretariat for the monthly Environmental Monitoring Committee (EMC) meetings, to report back monthly at the EMC meetings regarding the status of Environmental Progress of Phase 1B, and ultimately to monitoring compliance with the Record of Decision and Environmental Management Plan.
2006	Environmental Control Officer	Upgrading of the Darling Wastewater Treatment Works, Darling, Western Cape, South Africa: Compiled construction phase Environmental Management Plan (EMP) for the upgrading of the Darling WWTW, as well as developing the Environmental Awareness Training Course for construction personnel and monitoring compliance with EMP.
2006	Environmental Control Officer	Proposed Upgrading of the Bonnievale Wastewater Treatment Works, Bonnievale, Western Cape, South Africa: Compiled EMP for the upgrading of the Bonnievale WWTW.
2005 - 2006	Environmental Control Officer	Upgrading of the Hex River Valley Weirs, Hex River Valley, Western Cape, South Africa: Compiled EMP for the upgrading of the Hex River Valley Weirs, as well as developing the Environmental Awareness Training Course for construction personnel and monitoring compliance with EMP.
2005	Senior Environmental Practitioner	Proposed Construction of an Effluent Pipeline between the New Town Pump Station in Wellington and the Paarl Wastewater Treatment Works, Paarl, Western Cape, South Africa: Compiled EMP for the construction of the effluent pipeline between the New Town Pump Station (Wellington) and the Paarl WWTW.
2005	Environmental Control Officer	Upgrading of Bulk Water Supply Infrastructure at Mier, Northern Cape, South Africa: Developing and presenting the Education Course for site staff and monitoring compliance with the EMP for the construction of the reservoirs at Klein Mier and Groot Mier.
2005	Environmental Control Officer	Upgrading of Bulk Water Supply Infrastructure at Vanderkloof, Northern Cape, South Africa: Developing and presenting the Education Course for site staff and monitoring compliance with the EMP for the construction phase of the project.

2005	Environmental Control Officer	Upgrading of Bulk Water Supply Infrastructure at Vanwykslvei, Northern Cape, South Africa: Developing and presenting the Education Course for site staff and monitoring compliance with the EMP for the construction phase of the project.
2005	Environmental Control Officer	Construction of Water Reticulation at Augrabies, Northern Cape, South Africa: Developing and presenting the Education Course for site staff and monitoring compliance with the EMP for the construction phase of the project.
2004 - 2005	Environmental Officer	Tygerfalls Mixed Use Development, Bellville, Western Cape, South Africa: Facilitate compliance by a private developer, Melvaphanda Property Holdings, with the environmental requirements for the activities associated realignment of the Elsiekraal River in Bellville. This entailed application in terms of the Environment Conservation Act and National Water Act.
2004	Project Staff	Rivers Edge Resort, Bonnievale, Western Cape, South Africa: Appointed by Toekomsbeleggings Nr. 1 (Edms) Bpk to compile an Environmental Management Plan for the development of the River's Edge Resort development on the Breede River.
2004	Project Staff	Villiersdorp Cemetery, Villiersdorp, Western Cape, South Africa: Appointed by the Theewaterskloof Municipality to compile an Environmental Management Plan for the development of the new Villiersdorp Cemetery.
2004	Project Staff	Draaihoek Guesthouse, Piketberg, Western Cape, South Africa: Appointed by Draaihoek (Pty) Ltd. to compile an Environmental Management Plan for the construction phase for the development of the Draaihoek Guesthouse.
2004	Project Staff	La Pastorale Residential Development, Stellenbosch, Western Cape, South Africa: Appointed by Mr C.M. Spottiswoode to compile an Environmental Management Plan for the development of the La Pastorale residential estate.
2004	Project Staff	Swartstomp Resort Development, Theewaterskloof Dam, Western Cape, South Africa: Appointed by C.J. Roux to compile an Environmental Management Plan for the development of the Swartstomp resort on the Theewaterskloof Dam.
2002	Project Staff	Bredasdorp, Struisbaai and Napier Groundwater Development Programme: Appointed by the Cape Agulhas Municipality to compile an Environmental Management Plan for the proposed Bredasdorp, Struisbaai and Napier Groundwater Development Programme (drilling, pump testing and operation of new boreholes).

4) Environmental Planning:

2006 Project Manager **West Coast Integrated Environmental Programme, Western Cape, South Africa:** Appointed by the West Coast District Municipality to compile an Integrated Environmental Programme for the West Coast Region.

5) Business/Corporate/ Education Environmental Services:

2010 Project Manager **Information document on environmental legislation and the associated implications for the Department of Civil Engineering Services, Drakenstein, Western Cape:** Appointed by the Drakenstein Municipality to compile an information document on environmental legislation and the associated implications for the Drakenstein Municipality's Department of Civil Engineering Services, including the development of decision support tools.

2009 Project Staff **Environmental education for the Drakenstein Municipality and their civil engineering service providers:** Appointed by the Municipality to provide environmental training to the Municipality's engineers and environmental personnel, as well as their consulting civil engineers, regarding the changes to environmental legislation, including the NEMA EIA regulations and Waste Act, and the implications of such changes in legislation for the Municipality's proposed civil engineering projects.

2004 Project Staff **Pennypinchers Timber Processes, Cape Town, Western Cape, South Africa:** Appointed by the Peter Allan Building Material Trust to compile an Environmental Management System for the upgrade of the proposed Pennypinchers Timber Treatment Plant in Blackheath.

2003 Project Staff **Ashton – Montagu Water Pipeline, Western Cape, South Africa:** Appointed by the Breede River Winelands Municipality to compile an Environmental Management System for the installation, operation and rehabilitation phases of the Ashton-Montagu water pipeline, environmental awareness training for the site staff and monitoring.

6) Project Management:

2004-2006 Asst. Project Manager **Southern High Confidence Reserve Determination: Project Management, Western and Eastern Cape, South Africa:** The Department of Water Affairs appointed Ninham Shand to manage the Southern High Confidence Reserve Determination studies (i.e. for the Olifants/ Doring and the Kromme/ Seekoei catchments) on their behalf. The project entailed undertaking administrative and financial control of the technical service providers as well as review of all deliverables. Nicole acted as assistant project manager for the Olifants/ Doring component of the study.

COUNTRIES OF WORK EXPERIENCE:

South Africa, United Kingdom

EDUCATION:

- BSc (Environmental and Geographical Science), University of Cape Town, South Africa, 1996.
- BSc (Hons) (Environmental and Geographical Science), University of Cape Town, South Africa, 2000.
- Environmental Impact Assessment and Management Course, University of Stellenbosch, South Africa, June 2002.

EMPLOYMENT RECORD:

2017 – present Director, Holland & Associates Environmental Consultants, Cape Town, South Africa

2011 - 2017 Self Employed, t/a Holland & Associates Environmental Consultants, Cape Town, South Africa

2004 - 2011 Senior Environmental Practitioner, Aurecon (previously Ninham Shand Consulting Services), Cape Town, South Africa

2002 - 2004 Environmental Scientist, Withers Environmental Consultants, Stellenbosch, South Africa

2001 - 2002 Senior Applications Analyst, Geosense Limited, Cape Town, South Africa

2000 Honours student, Department of Environmental and Geographical Science, University of Cape Town, Cape Town, South Africa

1998 - 1999 Junior Project Accountant, Warburg Dillon Read (Union Bank of Switzerland), London, United Kingdom

LANGUAGES:

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Fair

REFEREES:

Ms Karen Shippey (Director: Sustainability (Western Cape Provincial Government))
Tel: 021483 0776

Mr Brett Lawson (Independent Environmental Consultant)
Tel: 083 4570557/brett@lawsonenvironmental.co.za

Appendix 3
Environmental Authorisation and
amendments thereto



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2682

NEAS Reference: DEAT/EIA/6159/2009

Reference: 12/12/20/1651

Enquiries: Mr Percy Ngidi

Telephone: (012) 310 3182 Fax: (012) 320 7539 E-mail: pngidi@environment.gov.za

Mr J Coetzee
Mulilo Renewable Energy (Pty) Ltd
P.O. Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Fax no: 021 385-1729

PER FACSIMILE / MAIL

Dear Mr Coetzee

APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998: GN R. 386 & 387: PROPOSED ESTABLISHMENT OF A WIND POWER GENERATING FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

With reference to the above application, please be advised that the Department has decided to grant authorisation. The environmental authorisation (EA) and reasons for the decision are attached herewith.

In the list of activities you applied for as detailed in the attached EA, this activity as listed in GN R. 386 (15) is no longer listed in terms of the new EIA Regulations, 2010 and therefore no environmental authorisation is required.

In terms of regulation 10(2) of the Environmental Impact Assessment Regulations, 2010 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 12 (twelve) days of the date of the EA, of the Department's decision in respect of your application as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 7 of the Regulations, which prescribes the appeal procedure to be followed. This procedure is summarised in the attached document. Kindly include a copy of this document with the letter of notification to interested and affected parties.

Should the applicant or any other party wish to appeal any aspect of the decision a notice of intention to appeal must be lodged by all prospective appellants with the Minister, within 20 days of the date of the EA, by means of one of the following methods:

By facsimile: 012 320 7561;
By post: Private Bag X447,
Pretoria, 0001; or
By hand: 2nd Floor, Fedsure Building, North Tower,
cnr. Van der Walt and Pretorius Streets,
Pretoria.

If the applicant wishes to lodge an appeal, it must also serve a copy of the notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection, should you intend to submit an appeal.

Please include the Department (*Attention: Director: Environmental Impact Evaluation*) in the list of interested and affected parties, notified through your notification letter to interested and affected parties, for record purposes.

Appeals must be submitted in writing to:

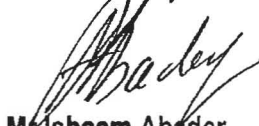
Mr T Zwane, Senior Legal Administration Officer (Appeals) of this Department at the above mentioned addresses or fax number. Mr Zwane can also be contacted at:

Tel: 012-310-3929

Email: tzwane@environment.gov.za

The authorised activities shall not commence within twenty (20) days of the date of signature of the authorisation. Further, please note that the Minister may, on receipt of appeals against the authorisation or conditions thereof suspend the authorisation pending the outcome of the appeals procedure.

Yours sincerely



Mr Ishaam Abader

Deputy Director-General: Environmental Quality and Protection
Department of Environmental Affairs

Date: 15/08/2011

CC:	Mr. Junaid Moosajee	DJ Environmental	Fax: 021 851-0933
	Mr T Zwane	Appeals Authority (DEA)	Fax: 012-320-7561

APPEALS PROCEDURE IN TERMS OF CHAPTER 7 OF THE NEMA EIA REGULATIONS, 2010 (THE REGULATIONS) AS PER GN R. 543 OF 2010 TO BE FOLLOWED BY THE APPLICANT AND INTERESTED AND AFFECTED PARTIES UPON RECEIPT OF NOTIFICATION OF AN ENVIRONMENTAL AUTHORISATION (EA)

APPLICANT	INTERESTED AND AFFECTED PARTIES (IAPs)
1. Receive EA from the relevant Competent Authority (the Department of Environmental Affairs [DEA])	1. Receive EA from Applicant/Consultant
2. Within 12 days of date of the EA notify all IAPs of the EA and draw their attention to their right to appeal against the EA in terms of Chapter 7 of the Regulations.	2. N/A
3. If you want to appeal against the EA, submit a notice of intention to appeal within 20 days of the date of the EA. with the Minister of Water and Environmental Affairs (the Minister).	3. If you want to appeal against the EA, submit a notice of intention to appeal within 20 days of the date of the EA. with the Minister of Water and Environmental Affairs (the Minister).
4. After having submitted your notice of intention to appeal to the Minister, provide each registered IAP with a copy of the notice of intention to appeal within 10 days of lodging the notice	4. After having submitted your notice of intention to appeal to the Minister, provide the applicant with a copy of the notice of intention to appeal within 10 days of lodging the notice
5. The Applicant must also serve on each IAP: <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection. 	5. Appellant must also serve on the Applicant within 10 days of lodging the notice, <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.
6. The appeal must be submitted in writing to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.	6. The appeal must be submitted to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.
7. Any IAP who received a notice of intention to appeal may submit a responding statement to that appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.	7. An Applicant who received notice of intention to may submit a responding statement to the appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.

NOTES:

1. **An appeal against a decision must be lodged with:-**
 - a) the Minister of Water and Environmental Affairs if the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
 - b) the Minister of Justice and Constitutional Development if the applicant is the Department of Water Affairs and the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
2. **An appeal lodged with:-**
 - a) the Minister of Water and Environmental Affairs must be submitted to the Department of Environmental Affairs;
 - b) the Minister of Justice and Constitutional Development must be submitted to the Department of Environmental Affairs;
3. **An appeal must be:-**
 - a) submitted in writing;
 - b) accompanied by:
 - a statement setting out the grounds of appeal;
 - supporting documentation which is referred to in the appeal; and
 - a statement that the appellant has complied with regulation 62 (2) or (3) together with copies of the notices referred to in regulation 62.





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Environmental Authorisation

In terms of regulation 37 of the Environmental Impact Assessment Regulations, 2006

Proposed establishment of the Mulilo Wind Power Generating Facility and its associated
infrastructure near De Aar, Northern Cape Province

Emthanjeni Local Municipality

Authorisation register number:	12/12/20/1651
NEAS reference number:	DEAT/EIA/6159/2009
Last amended:	<i>First issue</i>
Holder of authorisation:	Mulilo Renewable Energy (Pty) Ltd
Location of activity:	Emthanjeni Local Municipality, Northern Cape Province

This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

Decision

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this environmental authorisation, that the applicant should be authorised to undertake the activities specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

Activities authorised

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations, 2006 the Department hereby authorises –

MULILO RENEWABLE ENERGY (PTY) LTD

with the following contact details –

Mr Johannes Coetzee

Mulilo Renewable Energy (Pty) Ltd

P.O. Box 50

CAPE TOWN INTERNATIONAL AIRPORT

7525

Tel no: 021 385-1723

Fax no: 021 385-1729

Cell no: 082 9902 473

E-mail: Johannes@mulilo.com

to undertake the following activities (hereafter referred to as "the activity"):

GN. R 386

- Item 7: The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30m³ but less than 1000 m³ at any one location or site.*
- Item 12: The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004).*
- Item 16(b): The transformation of undeveloped, vacant or derelict land to residential mixed, retail, commercial, industrial, or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.*

GN R. 387

- Item 1(a): The construction of facilities or infrastructure, including associated structures or infrastructure for the generation of electricity where (i) the electricity output is 20 megawatts or more; or (ii) the elements of the facility cover a combined area in excess of 1 hectare.*
- Item 1(l): The construction of facilities or infrastructure, including associated structures or infrastructure for the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more.*
- Item 2: Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.*

as described in Table 1.1 of the Environmental Impact Report (EIR) dated November 2010 for the proposed establishment of the Mulilo Wind Power Generating Facility and its associated infrastructure near De Aar within the Emthanjeni Local Municipality in the Northern Cape Province, hereafter referred to as "the property".



Conditions

1. Scope of authorisation

- 1.1 Layout Alternative 1 as described in the EIR dated November 2010 is hereby authorised.
- 1.2 Authorisation of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.
- 1.3 The holder of the authorisation shall be responsible for ensuring compliance with the conditions contained in this environmental authorisation. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee, consultant or person rendering a service to the holder of the authorisation.
- 1.4 The activities authorised may only be carried out at the property as described above.
- 1.5 The recommendations and mitigation measures recorded in the EIR dated November 2010 must be adhered to.
- 1.6 Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.
- 1.7 This activity must commence within a period of three (3) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.
- 1.8 Commencement with one activity listed in terms of this authorisation constitutes commencement of all authorised activities.
- 1.9 This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.
- 1.10 Relevant legislation that must be complied with by the holder of this authorisation includes, *inter alia*:
 - Archaeological remains, artificial features and structures older than 60 years are protected by National Heritage Resources Act, 1999 (Act No. 25 of 1999). Should any archaeological artefacts be exposed during excavation for the purpose of construction

construction in the vicinity of the finding must be stopped immediately. A registered Heritage Specialist must be called to the site for inspection. Under no circumstances shall any heritage material be destroyed or removed from the site and the relevant heritage resource agency must be informed about the finding. Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the South African Heritage Resources Agency and/or any of their delegated provincial agencies.

- Relevant provisions of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Relevant provisions of the National Water Act, 1998 (Act No. 36 of 1998).
- Relevant provisions of the National Forests Act, 1998 (Act No. 84 of 1998).
- Relevant provisions of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
- Relevant provisions of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and its Regulations.
- Relevant provisions of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and its Regulations.
- Relevant provisions of the Hazardous Substance Act (Act No. 15 of 1973).
- Relevant Provisions of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).
- Relevant provisions of the Civil Aviation Act, 2009 (Act No. 13 of 2009).
- Should fill material be required for any purpose, the use of borrow pits must comply with the provisions of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) administered by the Department of Mineral Resources.
- All outdoor advertising i.e. signage boards associated with this proposed activity must be below the thresholds stipulated in the EIA Regulations as it was not applied for as an activity for authorisation during the Environmental Authorisation process. Should the holder of the Environmental Authorisation wish to exceed these thresholds he/she must submit an application for authorisation to this Department. Further, all outdoor advertising associated with this proposed activity, whether on or off the property concerned, must comply with the applicable Local Authority By-Law for the control of Outdoor Advertising or in the absence of local legislative controls, must comply with the South African Manual for Outdoor Advertising Control (SAMOAC).



- 1.11 The holder of an environmental authorisation has the responsibility to notify the competent authority of any alienation, transfer and change of ownership rights in the property on which the activity is to take place.

2. Notification of authorisation

- 2.1 The holder of the authorisation must notify every registered interested and affected party, in writing and within 12 (twelve) calendar days of the date of this environmental authorisation, of the decision to authorise the activity.
- 2.2 The notification referred to must –
- 2.2.1 specify the date on which the authorisation was issued;
 - 2.2.2 inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Environmental Impact Assessment (EIA) Regulations, 2010;
 - 2.2.3 advise the interested and affected party that a copy of the authorisation will be furnished on request; and
 - 2.2.4 give the reasons for the decision.

3. Management of the activity

- 3.1 The Environmental Management Plan (EMP) submitted as part of application for environmental authorisation must be amended and submitted to the Department for written approval prior to commencement of the activity. The recommendations and mitigation measures recorded in the EIR dated November 2010 must be incorporated as part of the EMP.
- 3.2 Once approved, the EMP must be implemented and adhered to. The amended EMP must also include the following:
- 3.2.1 Comprehensive rescue and storage in a suitable constructed nursery and storage area of plants deemed to be requiring either rescue for replanting and plants that will be useful during rehabilitation;
 - 3.2.2 A detailed Revegetation and Rehabilitation Plan to be implemented during construction and operation;
 - 3.2.3 A Rehabilitation Plan must be compiled to minimise adverse environmental impacts whilst maximising the future utilisation of the property; and



3.2.4 An Open Space Management Plan must be incorporated in the EMP. The Open Space Management Plan must incorporate ecological process areas into the buffer as recommended by the wetland specialist.

4. Monitoring

- 4.1 The applicant must appoint a suitably experienced independent Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to in this authorisation are implemented and to ensure compliance with the provisions of the EMP.
- 4.2 The ECO shall be appointed before commencement of any authorised activity.
- 4.3 Once appointed, the name and contact details of the ECO must be submitted to the *Director: Compliance Monitoring* of the Department.
- 4.4 The ECO shall keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.
- 4.5 A detailed incident (including spillage of bitumen, fuels, chemicals, or any other material) and complaint register must be kept on site indicating how these issues were addressed, what rehabilitation measures were taken and what preventative measures were implemented to avoid re-occurrence of incidents/complaints.
- 4.6 In addition the ECO must maintain the following on site:
- 4.6.1 A daily site diary.
 - 4.6.2 Copies of all reports submitted to the Department.
 - 4.6.3 A schedule of current site activities including the monitoring of such activities.
- 4.7 The ECO shall remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.
- 4.8 Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

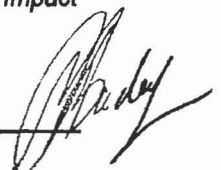


5. Recording and reporting to the Department

- 5.1 All documentation e.g. audit/monitoring/compliance reports and notifications, required to be submitted to the Department in terms of this authorisation, must be submitted to the *Director: Compliance Monitoring* at the Department.
- 5.2 The holder of the authorisation must submit an environmental audit report to this Department upon completion of the construction and rehabilitation activities.
- 5.3 The environmental audit report must:
- 5.3.1 Be conducted by an independent environmental auditor;
 - 5.3.2 Indicate the date of the audit, the name of the auditor and the outcome of the audit;
 - 5.3.3 Evaluate compliance with the requirements of the approved EMP and this environmental authorisation;
 - 5.3.4 Include measures to be implemented to attend to any non-compliances or degradation noted;
 - 5.3.5 Include copies of any approvals granted by other authorities relevant to the development for the reporting period; and
 - 5.3.6 Highlight any outstanding environmental issues that must be addressed, along with recommendations for ensuring these issues are appropriately addressed.
- 5.4 The audit report must be submitted prior to commencement of the operation phase of the project.

6. Commencement of the activity

- 6.1 The authorised activity shall not commence within twenty (20) days of the date of signature of the authorisation.
- 6.2 An appeal under section 43 of the National Environmental Management Act (NEMA), Act 107 of 1998 (as amended), does not suspend an environmental authorisation or exemption, or any provisions or conditions attached thereto, or any directive, unless the Minister, MEC or delegated organ of state directs otherwise.
- 6.3 The applicant must obtain a Water Use Licence from the Department of Water Affairs (DWA) prior to the commencement of the project should the applicant impact on any wetland or water resource. A copy of the license must be submitted to the *Director: Environmental Impact Evaluation* at the Department.



- 6.4 The applicant must submit a final layout plan for the entire wind energy facility for approval to the department, prior to commencement of construction. The layout should indicated the following:
- Turbine positions;
 - Foundation footprint;
 - Permanent laydown area footprint;
 - Construction period laydown footprint;
 - Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible);
 - Wetlands, drainage lines, rivers, stream and water crossing of roads and cables indicating the type of bridging structures that will be used;
 - Heritage sites that will be affected by the turbines and associated infrastructure;
 - Substation(s) and/or transformer(s) sites including their entire footprint;
 - Cable routes and trench dimensions (where they are not along internal roads);
 - Connection routes to the distribution/transmission network;
 - Cut and fill areas at turbine sites along roads and at substation/transformer sites indicating the expected volume of each cut and fill;
 - Borrow pits;
 - Spoil heaps (temporary for topsoil and subsoil and permanently for excess material);
 - Buildings including accommodation; and
 - All "no-go" areas.
- 6.5 The applicant must appoint a qualified botanical and fauna specialist to ground-truth every turbine footprint and their recommendation must form part of the final layout of the Wind Energy Facility and EMP to be submitted to the department for approval.

7. Notification to authorities

- 7.1 Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence. This notification period may coincide with the period contemplated in 6.1 above.



8. Operation of the activity

- 8.1 Fourteen (14) days written notice must be given to the Department that the activity operational phase will commence.
- 8.2 The applicant must compile an operational EMP for the operational phase of the activity or alternatively, if the applicant has an existing operational environmental management system, it must be amended to include the operation of the authorised activity.

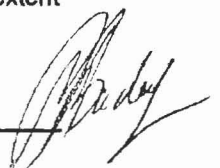
9. Site closure and decommissioning

- 9.1 Should the activity ever cease or become redundant, the applicant shall undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.

10. Specific conditions

10.1 Avifauna and bats

- 10.1.1 A bird and bat monitoring programme must be implemented to document the effect of the operation of the wind energy facility on avifauna and bats. This should commence prior to construction, and continue during operation of the wind energy facility.
- 10.1.2 The results of the pre-construction bird monitoring programme must inform the final layout and the construction schedule of the wind energy facility.
- 10.1.3 Reports regarding bird monitoring must be submitted to the relevant provincial environmental department, Birdlife South Africa, the Endangered Wildlife Trust (EWT) and this Department on a quarterly basis. The report will assist all stakeholders in identifying potential and additional mitigation measures and to establish protocols for a bird monitoring programme for wind energy development in the country.
- 10.1.4 The baseline data collected and documented during the survey must be shared with the EWT and Birdlife South Africa for a better understanding of the distribution or breeding behaviour of any of the priority species.
- 10.1.5 Habitat destruction must be kept to an absolute minimum by keeping the lay-down areas as small as possible, reducing the number and size/length of roads and reducing the final extent of the developed area.



- 10.1.6 The applicant must ensure that lighting on the turbines is kept to a minimum and is coloured (red or green) and intermittent, rather than permanent and white, to reduce confusion effects for nocturnal migrants.
- 10.1.7 The facility must be designed to discourage their use as perching or roosting substrates by birds and bats.

10.2 Vegetation, wetlands and water resources

- 10.2.1 All species of special concern (SSC) must be identified and every effort must be made to rescue them.
- 10.2.2 Vegetation clearing must be limited to the required footprint. Mitigation measures must be implemented to reduce the risk of erosion and the invasion of alien species.
- 10.2.3 Service and construction roads must be restricted to the power line servitude area or existing roads and need to be maintained in a manner as not to encroach onto any sensitive areas adjacent to the approved servitude or site.
- 10.2.4 Critical available biodiversity information must be consulted for the final placement of turbines and infrastructure.
- 10.2.5 The applicant must ensure that the continuous monitoring and removal of alien plant species is undertaken. An alien removal program must be developed and implemented.
- 10.2.6 A "Plant Rescue and Protection" plan which allows for the maximum transplant of conservation important species from areas to be transformed must be compiled by a vegetation specialist familiar with the site in consultation with the ECO. This plan must be implemented prior to commencement of the construction phase.
- 10.2.7 Before the clearing of the site, the appropriate permits must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF) for the removal of plants listed in the National Forest Act and from the relevant provincial department for the destruction of species protected in terms of the specific provincial legislation. Copies of the permits must be submitted to the Department for record keeping.
- 10.2.8 Construction activities must be restricted to demarcated areas to restrict impact on vegetation and animals.
- 10.2.9 A comprehensive habitat rehabilitation plan must be developed for the site. Restoration must be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.



- 10.2.10 All areas of disturbed soil must be reclaimed using only indigenous grass and shrubs. Reclamation activities should be undertaken as early as possible on disturbed areas.
- 10.2.11 All electrical collector lines must be buried in a manner that minimizes additional surface disturbance.
- 10.2.12 Topsoil from all excavations and construction activities must be salvaged and reapplied during reclamation.
- 10.2.13 No trapping or killing of animals is allowed in and around the construction site. The construction site must be clearly demarcated.
- 10.2.14 The applicant is required to inform the relevant provincial department and/or this Department should the removal of protected species, medicinal plants and "data deficient" plant species be required.
- 10.2.15 All hard infrastructures should be located within existing areas of low sensitivity, as far as possible.
- 10.2.16 All turbine and infrastructure must be located at least 100m from the edge of any highly sensitive areas.
- 10.2.17 No exotic plants may be used for rehabilitation purposes; only indigenous plants of the area may be utilised.
- 10.2.18 No activities will be allowed to encroach into a water resource without a water use license being in place from the Department of Water Affairs.
- 10.2.19 Appropriate erosion mitigation must be implemented to prevent any potential erosion.
- 10.2.20 Cleared alien vegetation must not be dumped on adjacent intact vegetation during clearing but should be temporarily stored in a demarcated area.
- 10.2.21 Removal of alien invasive species or other vegetation must be in accordance with the Conservation of Agricultural Resources Act (Act 43 of 1983), and follow-up procedures for the duration of the project.
- 10.2.22 The applicant must ensure that all the "No-go" areas are clearly demarcated (using fencing and appropriate signage) before construction commences.
- 10.2.23 Contractors and construction workers must be clearly informed of the no-go areas.
- 10.2.24 Siting of turbines should adhere to >500m setbacks from large water bodies, riparian vegetation and rocky crevices, if and where high bat occurrence is found after monitoring.
- 10.2.25 Where roads pass right next to major water bodies provision should be made for fauna such as toads to pass under the roads by using culverts or similar.
- 10.2.26 Bridge design must be such that it minimise impact to the riparian areas with minimal alterations to water flow and must be permeable to movement of fauna and flora.

10.2.27 During construction the footprint of the impact should be kept to a minimum. All construction activities and/or earthworks must be carried out within the limits of the authorised site. No go areas must be identified to minimise compaction of soil and potential erosion.

10.3 Roads and transportation

10.3.1 Access to the Swartkoppies section must be gained through the Smauspoort Road and not the R348. The Smauspoort Road must be surfaced as per the recommendation of the Traffic Impact Assessment Report in the EIR dated November 2010.

10.3.2 Existing road infrastructure must be used as far as possible for providing access to proposed turbine positions. Where no road infrastructure exists, new roads should be placed within existing disturbed areas or environmental conditions must be taken into account to ensure the minimum amount of damage is caused to natural habitats.

10.3.3 A transportation plan must be developed, particularly for the transport of turbine components, main assembly cranes and other large pieces of equipment. A permit must be obtained from the relevant transport department for the transportation of all components (abnormal loads) to the sites.

10.3.4 A traffic management plan must be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted.

10.3.5 Signs must be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuter, consideration should be given to limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time.

10.3.6 Roads must be designed so that changes to surface water runoff are avoided and erosion is not initiated.

10.3.7 Internal access roads must be located away from drainage bottoms and avoid wetlands, if feasible.

10.3.8 Internal access roads must be located to minimize stream crossings. All structures crossing streams must be located and constructed so that they do not decrease channel stability or increase water velocity.

10.3.9 Existing drainage must not be altered, especially in sensitive areas.

10.3.10 A designated access to the site must be created and clearly marked to ensure safe entry and exit.

10.3.11 Signage must be erected at appropriate points warning of turning traffic and the construction site.

10.3.12 Construction vehicles carrying materials to the site should avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.

10.3.13 Road borders should be regularly maintained to ensure that vegetation remains short and that they therefore serve as an effective firebreak.

10.4 Noise

10.4.1 Construction staff to be given training in actions to minimise noise impacts.

10.4.2 Noise from the turbines at the identified noise sensitive areas must be less than the 45 dB(A) limit for rural areas presented in SANS10103.

10.4.3 The applicant must ensure that the National Noise Control Regulations and SANS10103:2008 are adhered to and reasonable measures to limit noise from the work site are implemented.

10.4.4 The applicant must ensure that the construction staff working in areas where the 8-hour ambient noise levels exceed 75 dBA must wear ear protection equipment.

10.4.5 The applicant must ensure that all equipment and machinery are well maintained and equipped with silencers.

10.4.6 The applicant must provide a prior warning to the community when a noisy activity e.g. blasting is to take place.

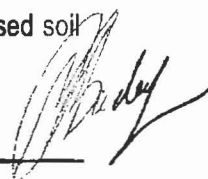
10.4.7 All construction operations should only occur during daylight hours if possible.

10.4.8 All wind turbines should be located at a setback distance of 500 m from any homestead and a day/night noise criteria level at the nearest residents of 45 dB(A) should be used to locate the turbines. The 500 m setback distance can be relaxed if local factors; such as high ground between the noise source and the receiver, indicates that a noise disturbance will not occur.

10.4.9 Positions of turbines jeopardizing compliance with accepted noise levels should be revised during the micro-siting of the units in question and predicted noise levels re-modelled by the noise specialist, in order to ensure that the predicted noise levels are less than 45 dB(A).

10.5 Visual resources

10.5.1 The applicant must reduce visual impacts during construction by minimising areas of surface disturbance, controlling erosion, using dust suppression techniques and restoring exposed soil as closely as possible to their original contour and vegetation.



- 10.5.2 A lighting engineer must be consulted to assist in the planning and placement of light fixtures in order to reduce visual impacts associated with glare and light trespass.
- 10.5.3 Signs near wind turbines should be avoided unless they serve to inform the public about wind turbines and their function.
- 10.5.4 Commercial messages and graffiti on turbines must be avoided.
- 10.5.5 The applicant must ensure that the painting of the wind turbines is in accordance with the Aviation Act, 1962, Thirteenth Amendment of the Civil Aviation Regulations, 1997.
- 10.5.6 Laydown areas and stockyards should be located in low visibility areas (e.g. valleys between ridges) and existing vegetation should be used to screen them from view where possible.
- 10.5.7 Construction activities must be restricted to daylight hours in order to negate or reduce visual impacts associated with lighting.
- 10.5.8 Night lighting of the construction sites should be minimised within the requirements of safety and efficiency.
- 10.6 Human health and safety**
- 10.6.1 A health and safety programme must be developed to protect both workers and the general public during construction, operation and decommissioning of the wind energy facility. The programme must establish a safety zone for wind turbines from residences and occupied buildings, roads, right-of-ways and other public access areas that is sufficient to prevent accidents resulting from the operation of the wind turbines.
- 10.6.2 Potentials interference with public safety communication systems (e.g. radio traffic related to emergency activities) must be avoided.
- 10.6.3 The applicant must ensure that the operation of the wind facility has minimal electromagnetic interference (EMI) (i.e. impacts to microwave, radio and television transmissions) and should comply with the relevant communication regulations.
- 10.6.4 The applicant must obtain a written permit or approval from the South Africa Civil Aviation Authority that the wind facility will not interfere with the performance of aerodrome radio Communication, Navigation and Surveillance (CNS) equipment especially the radar prior to commencement of the activity. The approval/permit must be submitted to the Director: Environmental Impact Evaluation.
- 10.6.5 The applicant must train safety representatives, managers and workers in workplace safety. The construction process must be compliant with all safety and health measures as prescribed by the relevant act.

10.6.6 Liaison with land owners/farm managers is to be done prior to construction in order to provide sufficient time for them to plan agricultural activities. If possible, construction should be scheduled to take place within the post-harvest, pre planting season, when fields are lying fallow.

10.6.7 No open fires for cooking or heating must be allowed on site.

10.7 Hazardous materials and waste management

10.7.1 Areas around fuel tanks must be bunded or contained in an appropriate manner as per the requirements of SABS 089:1999 Part 1.

10.7.2 Leakage of fuel must be avoided at all times and if spillage occurs, it must be remedied immediately.

10.7.3 Hazardous waste such as bitumen, oils, oily rags, paint tins etc. must be disposed of at an approved hazardous waste landfill site.

10.7.4 An effective monitoring system must be put in place during the construction phase of the development to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. The applicant must ensure that precautionary measures are in place to limit the possibility of oil and other toxic liquids from entering the soil or storm water system.

10.7.5 Streams, river, pans, wetlands, dams and their catchments and other environmental sensitive areas must be protected from the direct or indirect spillage of pollutants.

10.7.6 No dumping or temporary storage of any materials may take place outside designated and demarcated laydown areas, and these must all be located within areas of low environmental sensitivity.

10.7.7 Hazardous substances must not be stored where there could be accidental leakage into surface or subterranean water.

10.7.8 Hazardous and flammable substances must be stored and used in compliance to the applicable regulations and safety instructions. Furthermore, no chemicals must be stored nor may any vehicle maintenance occur within 350 m of the temporal zone of wetlands, a drainage line with or without an extensive floodplain or hillside wetlands.

10.7.9 Temporary bunds must be constructed around chemical storage to contain possible spills.

10.7.10 Spill kits must be made available on-site for the clean-up of spills.

10.7.11 An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.

Any solid waste shall be disposed of at a landfill licensed in terms of section 20(b) of the National Environment Management Waste Act, 2008 (Act No. 59 of 2008).

10.7.12 Temporary ablution facilities must be provided for staff at all times during the construction phase. The ablutions must be cleaned regularly with associated waste being disposed of at a registered/permited waste site and must be removed from the site when the construction phase is completed.

10.8 Excavation and blasting activities

10.8.1 Underground cables and internal access roads must be aligned as much as possible along existing infrastructure to limit damage to vegetation and watercourses.

10.8.2 Foundations and trenches must be backfilled with originally excavated materials as much as possible. Excess excavation materials must be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.

10.8.3 Borrow materials must be obtained only from authorized and permitted sites.

10.8.4 Anti-erosion measures such as silt fences must be installed in disturbed areas.

10.9 Air emissions

10.9.1 Dust abatement techniques must be used before and during surface clearing, excavation, or blasting activities.

10.9.2 Appropriate dust suppression techniques must be implemented on all exposed surfaces during periods of high wind. Such measures may include wet suppression, chemical stabilisation, the use of a wind fence, covering surfaces with straw chippings and re-vegetation of open areas.

10.10 Historical / cultural / paleontological resources

10.10.1 If there are any changes to the layout of the turbines, then additional survey work will be required in order to ensure that no sites are directly impacted and/or to identify the need for an excavation permit.

10.10.2 Should any graves be found, all construction activities must be suspended and an archaeologist be contacted immediately. The discovered graves must be cordoned off.



10.11 Storm water management

10.11.1 A comprehensive storm water management plan must be developed for the site to ensure compliance with applicable regulations and to prevent off-site migration of contaminated storm water or increased soil erosion. The comprehensive storm water management plan should form part of the EMP.

10.11.2 Construction must include appropriate design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.

10.12 Turbines position

10.12.1 Erection of wind turbines in areas classified as high sensitivity areas is prohibited.

10.12.2 Turbines must be positioned in such a way that they are at least 500m away from residences or farm buildings.

10.12.3 Turbines must be positioned in such a way that shadow flicker does not affect any farm buildings.

10.12.4 The applicant must ensure that the placement of turbines on ridges is avoided.

10.12.5 Wind turbines and its associated laydown areas and access roads, which could potentially impact on sensitive areas, must be shifted in order to avoid these areas of high sensitivity.

10.13 Overhead power line and substation

10.13.1 The 132kV power line corridor may only be constructed at the following co-ordinates:

Starting Points	30°43'37.37"S 23°54'32.16"E
Mid Points	30°43'25.15"S 23°55'35.62"E 30°43'25.00"S 23°57'2.23"E
End Points	30°42'25.89"S 23°58'50.23"E



- 10.13.2 A walk-through survey of the final survey power line corridor must be undertaken by a botanical specialist, an ornithologist and a heritage specialist to identify areas where mitigation may be required. The results of this 'walk-through' must be communicated to the Northern Cape Heritage Authorities.
- 10.13.3 All sections of the proposed power line passing over, or in close proximity of grasslands, rivers, wetlands, and dams, especially the section of the 132kV power line located adjacent to the proposed substation site (point 1228 on Map D100-01), must be marked with suitable bird flight diverters in order to deter large birds from colliding with the powerline. Additional areas of high sensitivity along the preferred alignment must be identified by an avifaunal specialist for the fitment of anti-collision devices according to Eskom Transmission Guidelines.
- 10.13.4 The substation site must be located at 30°43'37.37"S and 23°54'32.15"E, and the proposed control building right next to it.

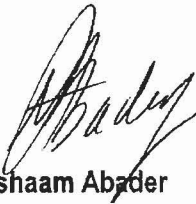
11. General

- 11.1 A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.
- 11.2 Where any of the applicant's contact details change, including the name of the responsible person where the applicant is a juristic person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
- 11.3 The holder of the authorisation must notify the Department, in writing and within 48 (forty eight) hours, if any condition of this authorisation cannot be or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.



11.4 National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Date of environmental authorisation: 15 August 2011



Mr Ishaam Abader

Deputy Director-General: Environmental Quality and Protection
Department of Environmental Affairs

Annexure 1: Reasons for Decision

1. Background

The applicant, Mulilo Renewable Energy (Pty) Ltd, applied for the following activities:

GN. R 386

Item 7: The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30m³ but less than 1000 m³ at any one location or site.

Item 12 The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004).

Item 16(a): The transformation of undeveloped, vacant or derelict land to residential mixed, retail, commercial, industrial, or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.

GN R. 387

Item 1(a): The construction of facilities or infrastructure, including associated structures or infrastructure for the generation of electricity where (i) the electricity output is 20 megawatts or more; or (ii) the elements of the facility cover a combined area in excess of 1 hectare.

Item 1(l): The construction of facilities or infrastructure, including associated structures or infrastructure for the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more.

Item 2: *Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.*

- for the proposed establishment of the Mulilo Wind Power Generating Facility and its associated infrastructure near De Aar within the Erntanjeni Local Municipality in the Northern Cape Province as described in the Environmental Impact Report (EIR) dated November 2010.

The applicant appointed DJ Environmental to undertake an environmental assessment process in accordance with the EIA Regulations, 2006.

2. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) The information contained in the EIR dated November 2010;
- b) The comments received from interested and affected parties as included in the EIR dated November 2010;
- c) Mitigation measures as proposed in the EIR dated November 2010 and the EMP;
- d) The information contained in the specialist studies contained in the EIR dated November 2010;
- e) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

3. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

- a) Details provided of the qualifications of the EAP indicate that the EAP is competent to carry out the environmental impact assessment procedures.
- b) The findings of all the specialist studies conducted and their recommended mitigation measures.
- c) The need for the proposed project stems from the need for clean and renewable energy sources to reduce the country's energy supply problems.



- d) The EIR dated November 2010 included a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity.
- e) The EIR dated November 2010 identified all legislation and guidelines that have been considered in the preparation of the EIR dated November 2010.
- f) The methodology used in assessing the potential impacts identified in the EIR dated November 2010 and the specialist studies have been adequately indicated.
- g) A sufficient public participation process was undertaken and the applicant has satisfied the minimum requirements as prescribed in the EIA Regulations, 2006 for public involvement.

4. Findings

After consideration of the information and factors listed above, the Department made the following findings -

- a) The identification and assessment of impacts are detailed in the EIR dated November 2011 and sufficient assessment of the key identified issues and impacts have been completed.
- b) The procedure followed for impact assessment is adequate for the decision-making process.
- c) The proposed mitigation of impacts identified and assessed adequately curtails the identified impacts.
- d) All legal and procedural requirements have been met.
- e) The information contained in the EIR dated November 2010 is accurate and credible.
- f) EMP measures for the pre-construction, construction and rehabilitation phases of the development were proposed and included in the EIR and will be implemented to manage the identified environmental impacts during the construction process.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The application is accordingly granted.



**environmental affairs**

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315-Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2582

NEAS Reference: DEAT/EIA/6159/2009

Reference: 12/12/20/1651

Enquiries: Mr Percy Ngidi

Telephone: (012) 310 3182 Fax: (012) 320 7539 E-mail: pngidi@environment.gov.za

Mr J Coetzee
Longyuan Mulilo DeAar Wind Power (Pty) Ltd
P.O. Box-50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Fax no: 021 385-1729

PER FACSIMILE / MAIL

Dear Mr Coetzee

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 15 AUGUST 2011 FOR THE PROPOSED ESTABLISHMENT OF A WIND POWER GENERATING FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

With reference to the abovementioned application, please be advised that the Department in terms of powers vested in regulation 42 of the Environmental Impact Assessment Regulations, 2010, has decided to amend the environmental authorisation as follows:

Mulilo Renewable Energy (Pty) Ltd

Must be substituted with the following Special Purpose Vehicles (SPV) name:

Longyuan Mulilo DeAar Wind Power (Pty) Ltd

This amendment must be read in conjunction with the Environmental Authorisation dated 15 August 2011.

In terms of regulation 10(2) of the Environmental Impact Assessment Regulations, 2010 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 12 (twelve) days of the date of the EA, of the Department's decision in respect of your application as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 7 of the Regulations, which prescribes the appeal procedure to be followed. This procedure is summarised in the attached document. Kindly include a copy of this document with the letter of notification to interested and affected parties.

Should the applicant or any other party wish to appeal any aspect of the decision a notice of intention to appeal must be lodged by all prospective appellants with the Minister, within 20 days of the date of the EA, by means of one of the following methods:

By facsimile: 012 320 7561;
 By post: Private Bag X447,
 Pretoria, 0001; or
 By hand: 2nd Floor, Fedsure Building, North Tower,
 cnr. Van der Wall and Pratorius Streets,
 Pretoria.

If the applicant wishes to lodge an appeal, it must also serve a copy of the notice of Intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection, should you intend to submit an appeal.

Please include the Department (*Attention: Director: Environmental Impact Evaluation*) in the list of interested and affected parties, notified through your notification letter to interested and affected parties, for record purposes.

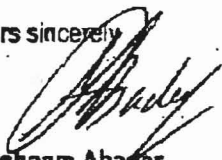
Appeals must be submitted in writing to:
 Mr T Zwane, Senior Legal Administration Officer (Appeals) of this Department at the above mentioned addresses or fax number. Mr Zwane can also be contacted at:

Tel: 012-310-3929

Email: tzwane@environment.gov.za

The authorised activities shall not commence within twenty (20) days of the date of signature of the authorisation. Further, please note that the Minister may, on receipt of appeals against the authorisation or conditions thereof suspend the authorisation pending the outcome of the appeals procedure.

Yours sincerely



Mr Ishaam Abader
 Deputy Director-General: Environmental Quality and Protection
 Department of Environmental Affairs

Date: 24/10/2011

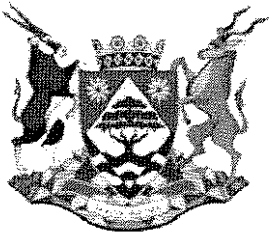
CC:	Mr. Junaid Moosaiee	DJ Environmental	Fax: 021 851-0933
	Mr T Zwane	Appeals Authority (DEA)	Fax: 012-320-7561

APPEALS PROCEDURE IN TERMS OF CHAPTER 7 OF THE NEMA EIA REGULATIONS, 2010 (THE REGULATIONS) AS PER GN R. 543 OF 2010 TO BE FOLLOWED BY THE APPLICANT AND INTERESTED AND AFFECTED PARTIES UPON RECEIPT OF NOTIFICATION OF AN ENVIRONMENTAL AUTHORISATION (EA)

APPLICANT	INTERESTED AND AFFECTED PARTIES (IAPs)
1. Receive EA from the relevant Competent Authority (the Department of Environmental Affairs (DEA))	1. Receive EA from Applicant/Consultant
2. Within 12 days of date of the EA, notify all IAPs of the EA and draw their attention to their right to appeal against the EA in terms of Chapter 7 of the Regulations.	2. N/A
3. If you want to appeal against the EA, submit a notice of intention to appeal within 20 days of the date of the EA, with the Minister of Water and Environmental Affairs (the Minister).	3. If you want to appeal against the EA, submit a notice of intention to appeal within 20 days of the date of the EA, with the Minister of Water and Environmental Affairs (the Minister).
4. After having submitted your notice of intention to appeal to the Minister, provide each registered IAP with a copy of the notice of intention to appeal within 10 days of lodging the notice	4. After having submitted your notice of intention to appeal to the Minister, provide the applicant with a copy of the notice of intention to appeal within 10 days of lodging the notice
5. The Applicant must also serve on each IAP: <ul style="list-style-type: none"> a notice indicating where and for what period the appeal submission will be available for inspection. 	5. Appellant must also serve on the Applicant within 10 days of lodging the notice, <ul style="list-style-type: none"> a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.
6. The appeal must be submitted in writing to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.	6. The appeal must be submitted to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.
7. Any IAP who received a notice of intention to appeal may submit a responding statement to that appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.	7. An Applicant who received notice of intention to may submit a responding statement to the appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.

NOTES:

1. An appeal against a decision must be lodged with:-
 - a) the Minister of Water and Environmental Affairs if the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
 - b) the Minister of Justice and Constitutional Development if the applicant is the Department of Water Affairs and the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
2. An appeal lodged with:-
 - a) the Minister of Water and Environmental Affairs must be submitted to the Department of Environmental Affairs;
 - b) the Minister of Justice and Constitutional Development must be submitted to the Department of Environmental Affairs;
3. An appeal must be:-
 - a) submitted in writing;
 - b) accompanied by:
 - a statement setting out the grounds of appeal;
 - supporting documentation which is referred to in the appeal; and
 - a statement that the appellant has complied with regulation 62 (2) or (3) together with copies of the notices referred to in regulation 62.



the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Private Bag X61.02, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Equiries :
Dipatlisisilo : Mr. Thulani Mthombeni
Navrae :
Imibuzo
Reference
Tshupelo : NC/BA/05/PIX/EMT/DEA2/2014
Verwysing (Amendment)
Isalathiso

Date : 25TH July 2014
Letha :
Datum :
Umhla :

Longyuan Mulilo De Aar Wind Power (Pty) Ltd

Constantin Hatzilambros
P.O. Box 50
Cape Town International Airport
7525

021 – 935 0505
constantin@mulilo.com

Dear Sir/Madam

THE GRANTING OF THE ENVIRONMENTAL AUTHORISATION FOR GN.R544: ACTIVITY 11, 18: BASIC ASSESSMENT FOR ADDITIONAL ACTIVITIES AT AN AUTHORISED DE AAR1 WIND ENERGY FACILITY (100MW) SMOUSPOORT FARM (REMAINING EXTENT OF FARM 130) AND ZWARTEKOPJES FARM (REMAINING EXTENT OF PORTION 2 OF FARM 131), DE AAR, EMTHANJENI LOCAL MUNICIPALITY, PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

By virtue of the powers conferred to me by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Regulations, 2010, **THE DEPARTMENT HEREBY GRANTS THE ENVIRONMENTAL AUTHORISATION FOR GN.R544: ACTIVITY 11, 18: BASIC ASSESSMENT FOR ADDITIONAL ACTIVITIES AT AN AUTHORISED DE AAR1 WIND ENERGY FACILITY (100MW) SMOUSPOORT FARM (REMAINING EXTENT OF FARM 130) AND ZWARTEKOPJES FARM (REMAINING EXTENT OF PORTION 2 OF FARM 131), DE AAR, EMTHANJENI LOCAL MUNICIPALITY, PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.** A detailed description of the activity is given in the **Amendment Application Forms dated July 2014** subject to the conditions listed in the environmental authorisation and reasons for the decision are attached herewith. In terms of regulation 10(2) of the Environmental Impact Assessment Regulations, 2010, you are instructed to notify all registered interested and affected parties, in writing and within twelve (12) calendar days of receiving of this letter, of the Department's decision in respect of your application as well as the provisions regarding the making of appeals that are provided for in the regulations.


Permit 18/2014(Amendment)

Your attention is drawn to Chapter 7 of the Regulations which regulates appeal procedures. Should you / any person affected by this decision wish to appeal any aspect of the decision, you or a person affected by this decision must, *inter alia*, lodge a notice of intention to appeal, as prescribed in regulation 62 of Environmental Impact Assessment Regulations, 2010, with the Member of the Executive Council, Ministry of Environment and Nature Conservation within 20 days of receiving this letter, by means of one of the following methods:

By facsimile: (053) 832 1026;
By post: Private Bag x 6102, Kimberley, 8300 or
By hand: T-Floor, Metlife Towers, Kimberley, 8300.

Should you decide to appeal, you must serve a copy of your notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection.

Yours faithfully



Mr. B Fisher – Acting Director

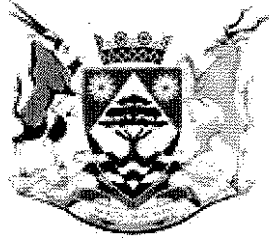
Environmental Quality Management

Department of Environment and Nature Conservation

DATE OF DECISIONS:

31 July 2014

Cc: Mr. Francois Greese
Aurecon South Africa (Pty) Ltd
Francis.greese@aurecongroup.com



ENVIRONMENTAL AUTHORISATION

in terms of National Environmental Management Act, 1998 (Act No. 107 of 1998) and the
Environmental Impact Assessment Regulations, 2010

Authorisation Register Number:	PERMIT 18/2014
Reference Number:	NC/BA/05/PIX/EMT/DEA2/2014
Last Amended:	24 July 2014 (First Amendment)
Holder of Authorisation:	LONGYUAN MULILO DE AAR WIND POWER (PTY) LTD
Location of activity:	SMOUSPOORT FARM (REMAINING EXTENT OF FARM 130) AND ZWARTEKOPJES FARM (REMAINING EXTENT OF PORTION 2 OF FARM 131), DE AAR.

DEFINITIONS

Activity means an activity identified in Government Notice No. R. 544 and No. R. 545 of 2010 as a listed activity.

Applicant means a person who has submitted an application.

Application means an application for an environmental authorization in terms of chapter 3 of the Environmental Impact Assessment Regulations of 2010.

Basic assessment report means a report contemplated in regulation 22.

Environmental Impact Report means a report contemplated in regulation 31 of the Environmental Impact Assessment Regulations of 2010.

EAP means an environmental assessment practitioner as defined in section 1 of the Act.

Interested and affected party means an interested and affected party contemplated in section 24(4) (d) of the Act, and which in terms of that section includes:

- ◆ Any person, group of persons or organisation interested in or affected by an activity, and
- ◆ Any organ of state that may have jurisdiction over any aspect of the activity.

Public participation process means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

The Act means the National Environmental Management Act, 1998 (Act No. 107 of 1998).

DECISION

The Department is satisfied, on the basis of information available to it and subject to compliance with conditions of this environmental authorisation, that the applicant should be authorised to undertake the activity specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

ACTIVITIES AUTHORISED

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010 the Department hereby authorises –

LONGYUAN MULILO DE AAR WIND POWER (PTY) LTD

with the following contact details –

Constantin Hatzilambros
P.O Box 50
Cape Town International Airport
7525

Tel: (021) 934 5288
Fax: (021) 935 0505
E-mail: constantin@mulilo.com

to undertake the following activities (hereafter referred to as "the activity")

The construction of buildings exceeding 50 square metres in size or infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from a watercourse.

Activity No. 11 and activity No. 18 of GN. R.544 of 18 June 2010:

11. "The construction of:

(x) buildings exceeding 50 square metres in size;

(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line."

18. "The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: (i) a watercourse."

At Smouspoort Farm (Remaining extent of Farm 130) and Zwartekopjes Farm, (Remaining extent of portion 2 of Farm 131), De Aar, which falls within the jurisdiction of Emthanjeni Local Municipality, of Pixley ka Seme District Municipality, with the following co-ordinates (Longitude (E) 23° 49' 57", Latitude (S) 30° 44' 57") hereafter referred to as "the property".

The granting of this Environmental Authorisation is subject to the conditions set out below.

CONDITIONS

Scope of authorisation:

1. Authorisation of the activity is subject to the conditions contained in this authorisation, which conditions form part of the environmental authorisation and are binding on the holder of the authorisation.

2. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.
3. The activity(s) which is authorised may only be carried out at the property indicated above.
4. Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.
5. This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

General conditions:

6. A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.
7. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
8. The holder of the authorisation must notify the Department, in writing and within 24 (TWENTY FOUR) hours, if condition 16 (sixteen) of this authorisation cannot be or is not adhered to. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 (SEVEN)

days if a condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.

9. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.
10. This authorization is subject to the approval by the relevant local authorities i.e. in terms of any relevant legislation administered by those local authorities.
11. The activity may not commence without the necessary permits/licenses/approvals and/or service agreements, where it is relevant, from or with the relevant regulatory authorities whether national, provincial or local (these include but are not limited to National Department of Water Affairs, Department of Environmental Affairs, National Department of Agriculture, Forestry and Fisheries, Department of Cooperative Governance and Human Settlement, Department of Mineral Resources, Department of Energy, Department of Roads & Public Works, Department of Transport, Department Arts & Culture, Department of Sports and Recreation, South African Heritage Resources Agency, South African Civil Aviation Authority).
12. The activity, including site preparation, may not commence before the thirty (30) day appeal period expires or until such time as the Department has considered any appeals that have been lodged.
 - a. One week's written notice must be given to the Administration clerk (Impact Management Unit) before commencement with the activity.
 - b. Such notice shall make clear reference to the site location details and the reference number given above.
 - c. The said notice must also include proof of compliance with the following conditions described herein:
Conditions: 11 and 23.
13. The applicable conditions of this authorization must form part of all contractors' and sub-contractors' conditions of contract. A performance-based requirement with

regard to environmental impact management must be included in all contracts related to any aspect of this authorization.

14. The applicant must carry out regular environmental audits to establish compliance with the conditions of this authorization and contracts.
15. Any complaints regarding the said development must be brought to the attention of the Department within 24 hours after receiving the complaint. A complaints register must be kept up to date for inspection by the Department.
16. Records relating to the compliance/non-compliance with the conditions of the authorization and contracts must be kept in good order. Such records must be made available to the Department within 7 (seven) days of receipt of a written request by the Department for such records.
17. Officials in the employ of the Department shall be given access to the property as described above (see detailed description of the activity) for the purposes of assessing and/or monitoring compliance with the conditions contained in this Environmental Authorization. Where the activity is located on a third party's property the applicant shall be responsible to arrange access for departmental officials.
18. This Department may add to, change and/or amend any of the conditions in this authorization if, in the opinion of the Department, the addition, change of amendment is environmentally justified. In event that such impacts exceed its significance as predicted in the independent consultant's environmental scoping report and supporting documentation, the authorization may be withdrawn after proper procedures were followed.
19. In the event of any dispute concerning the significance of a particular impact, the opinion of this department in respect of its significance will prevail.
20. This Department and any national department, provincial department, local authorities or committees appointed in terms of the conditions of this Environmental Authorization or any other public authority or organization shall not be held responsible for any damage or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of approval as set out in this document or any other subsequent document emanating from these conditions of approval.

21. The applicant shall be responsible for all costs necessary to comply with the above conditions unless otherwise specified.

22. The applicant must apply the principle of best practicable environmental option for all technologies used/ implemented during construction.

Appeal of authorisation:

23. The holder of the authorisation must notify every registered interested and affected party, in writing and within 12 (twelve) calendar days, of receiving notice of the Department's decision to authorise the activity.

24. The notification referred to condition 23 must –

- specify the date on which the authorisation was issued;
- inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the regulations; and
- Advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.

25. If the applicant should appeal against this Environmental Authorisation, he/she must inform all interested and affected persons that such an appeal is being lodged with the MEC and if requested, the applicant/appellant must provide those persons with reasonable access to a full copy of the appeal within a reasonable time before expiry of the thirty day appeal period.

Monitoring:

26. The applicant must appoint a suitably experienced Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in this authorisation are implemented.

27. The ECO shall be appointed before commencement of any land clearing or construction activities.

28. The ECO shall keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.

29. The ECO shall remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.
30. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

Recording and Reporting to the Department:

31. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
32. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 days if a condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by the reason for non-compliance.
33. Records relating to the compliance/non-compliance with the conditions of the authorisation and contracts must be kept in good order. Such records must be made available to the Department within 7 days of receipt of a written request by the Department for such records.
34. Any complaints regarding the said development must be brought to the attention of the Department within 24 hours after receiving the complaint. A complaints register must be kept up to date for inspection by the Department.

Commissioning of the activity:

35. Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.
36. The authorised activity shall not commence within thirty (30) days of the date of signature of the authorisation.

37. Should you be notified by the minister of a suspension of the authorisation pending appeal procedures, you shall not commence with the activity unless authorised by the minister in writing.

Operation of the activity:

38. Fourteen (14) days written notice must be given to the Department that the activity operational phase will commence.

39. Construction activities must be restricted within the normal working hours, and measures to control level of noise must comply with the National Noise Control Regulations and SANS10103:2008.

40. The level of dust in the construction site during the construction phase must be kept as low as possible at all the times and comply with the dust regulations promulgated under the Air Quality Act, 2004 (Act 39 of 2004).

41. The construction of access roads must not cause changes to surface water runoff and proper measures to prevent soil erosion must be implemented.

42. All the waste material which will be generated during the construction phase must be collected and transported by a roadworthy vehicle to a licenced waste disposal facility.

43. All forms of pollution must be prevented, or where it cannot, should be minimized or remedied.

44. The appropriate toilets must be supplied for the entire construction period and must be serviced on regular basis.

45. In the event of oil spillages and contamination of soil by hazardous substances that contaminated area must be cleaned up immediately by removing the contaminated soil and disposing it off into the designated hazardous skip bin for correct disposal.

46. The clearing of vegetation must be restricted within the development footprint.

47. The protected trees such as shepherd's tree (*Boscia albitrunca*) which occurs in the application site must not be affected by the proposed development; alternatively the permit for removal of the protected trees must be applied and granted by the

Department of Agriculture Forestry and Fisheries, prior to the commencement of the proposed activity.

48. The spreading of alien vegetation must be avoided where possible. In the event of occurrence of invasive alien vegetation, the removal must be in accordance with the Conservation of Agricultural Resources Act (Act 43 of 1983).
49. The Environmental Management Plan must be amended, if it has already been amended, it must be properly implemented as per the Environmental Authorization by Department of Environmental Affairs.
50. All the mitigation measures outlined in the Environmental Management Plan must be adhered to.

DURATION AND PERIOD OF VALIDITY

This activity(s) must commence within a period of three (3) years from the date of issue. If commencement does not occur within that period and the intention is to extend the validity period of the authorisation, an application for amendment to extend the validity period must be launched at least six months before the validity period lapses. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.

APPEAL

In terms of Chapter 7 of Environmental Impact Assessment Regulations, 2010, if the applicant or a person affected by this Decision wishes to appeal this decision, a notice of intention to appeal must be lodged within Twenty (20) days after date of the decision, and an appeal must **be lodged within thirty (30) days after lapsing of 20 days contemplated in regulation 60 (1)** of lodging of the notice to appeal to:

The Member of the Executive Council
Ministry of Environment & Nature Conservation
Private Bag X6102
Kimberley
8300
Fax: (053) 832 1026

Appeals must comply with the provisions of Chapter 7 of Environmental Impact Assessment Regulations, 2010 Government Notice No. R. 543 of 18 June 2010.



MR. B. FISHER
ACTING DIRECTOR: ENVIRONMENTAL QUALITY MANAGEMENT
DEPARTMENT OF ENVIRONMENT & NATURE CONSERVATION

DATE OF ENVIRONMENTAL AUTHORISATION: 31 July 2014

ANNEXURE 1: REASONS FOR DECISION

1. Background

The applicant, Longyuan Mulilo De Aar Wind Power (Pty) Ltd, applied for authorization to carry on the following activities –

The construction of buildings exceeding 50 square metres in size or infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from a watercourse, in De Aar, Emthanjeni Local Municipality, Pixley Ka Seme District Municipality, Northern Cape Province.

Activity No. 11 and activity No. 18 of GN. R.544 of 18 June 2010:

11. "The construction of:

(x) buildings exceeding 50 square metres in size;

or

(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line."

18. "The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: (i) a watercourse."

The applicant appointed Aurecon South Africa (Pty) Ltd to undertake an Environmental Assessment Process. The Basic Assessment was followed.

2. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) The information contained in the Environmental Impact Assessment Report.
- b) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and
- c) The findings of the site visit undertaken by the case officer and the Environmental Assessment Practitioner on 19 March 2014.

3. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

- a) The Basic Assessment Report submitted by the applicant met the minimum of the NEMA EIA Regulations.
- b) The legal and procedural requirements have been complied with.
- c) The information contained in the Basic Assessment Report and Appendices is to the satisfaction of this Department.
- d) Findings of the site visit conducted by the case officer and Environmental Assessment Practitioner.

4. Findings

After consideration of the information and factors listed above, the Department made the following findings –

- a) The application process was satisfactory in terms of the Regulation 36 of the EIA 2010 regulations.
- b) The Public Participation Process met the minimum requirements as per regulation 54.
- c) The legal and procedural requirements have been complied with and the information contained in the Basic Assessment Report.
- d) Appendices contained in the Basic Assessment Report are up to the satisfaction of this Department.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The Environmental Authorization is accordingly granted.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 374 Steve Biko Street · Arcadia · PRETORIA
Tel (+ 27 86) 111 2468 · Fax (+ 2712) 322 2682

DEA Reference: 12/12/20/1651

Enquiries: Mr Muhammad Essop

Telephone: (012) 399 9406 **Fax:** (012) 320 7539 **E-mail:** MEssop@environment.gov.za

Ms Karen Versfeld
Longyuan Mulilo De Aar Wind Power (Pty) Ltd
PO Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Fax number: (021) 935 0505
Telephone number: (021) 934 5278

PER FACSIMILE / MAIL

Dear Ms Versfeld

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION (12/12/20/1651) ISSUED ON 15 AUGUST 2011 FOR THE PROPOSED ESTABLISHMENT OF A WIND POWER GENERATING FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

The Environmental Authorisation (EA) issued for the above application by this Department on 15 August 2011 and your application for amendment to the EA received by this Department on 26 March 2014 and 29 July 2014 refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Regulation 42 of the Environmental Impact Assessment Regulations, 2010, has decided to amend the EA dated 15 August 2011 as follows:

Amendment 1: addition of the property descriptions into the EA:

The following is added on page 3 of the EA dated 15 August 2011:

Farm	Erf	Title Ref	Size	Zoning
Smouspoort, Remaining Extent, Britstown RD 130	RE 130	T4827/1975	9 039.2677	Agriculture
Zwartekopjes, Remaining Extent of Portion 2, Britstown RD 131	RE 2/131	T3960/1983	2 727.3264	Agriculture

Amendment 2: Amendment to the location of the substation:

Condition 10.13.4:

From:

"the substation site must be located at 30°43'37.37"S and 23°54'32.15"E, and the proposed control building right next to it"

To:

"the substation site and control building must be located within a 200m radius of central point 30°43'18.84"S and 23°55'00.57"E".

Amendment 3: Amendment to condition 10.3.1:

From:

"Access to the Swartkoppies section must be gained through the Smauspoort Road and not the R348. The Smauspoort Road must be surfaced as per the recommendation of the Traffic Impact Assessment Report in the EIR dated November 2010".

To:

"Access to the Swartkoppies section must be gained through the Smauspoort Road and not the R348. The Smauspoort Road must be maintained in accordance to the requirements of the Northern Cape Department of Roads and Public Works. In addition a road maintenance plan must be submitted to the Northern Cape Department of Roads and Public Works for approval and to be included into the EMPr".

Amendment 4: Amendment to condition 6.5:

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Regulation 42 of the Environmental Impact Assessment Regulations, 2010, has decided **not to amend Condition 6.5** of the EA dated 15 August 2011.

The original specialist responsible for the specialist study in the EIAr must undertake the ground-truthing exercise and provide input in the EMPr to conclude the assessment. The motivation provided in the application form is inadequate to make an informed decision whether the ECO can take over this responsibility. The final EMPr has also not been submitted for approval therefore this Department cannot determine if the mitigation measures will be acceptable to manage potential impacts.

Furthermore, this Department requires that a shapefile of the approved development layout/footprint be submitted to this Department within two (2) months from the date of this letter. The shapefile must be created using the Hartebeesthoek 94 Datum and the data should be in Decimal Degree Format using the WGS 84 Spheroid. The shapefile must include at a minimum the following extensions i.e. .shp; .shx; .dbf; .prj; and, .xml (Metadata file). If specific symbology was assigned to the file, then the .avl and/or the .lyr file must also be included. Data must be mapped at a scale of 1:10 000 (please specify if an alternative scale was used). The metadata must include a description of the base data used for digitizing. The shapefile must be submitted in a zip file using the EIA application reference number as the title.

The shape file must be submitted to:

Postal Address:

Department of Environmental Affairs
Private Bag X447
Pretoria
0001



Physical address:

Department of Environmental Affairs
Environment House
473 Steve Biko Road
Arcadia
Pretoria
0186

For Attention: Mr Muhammad Essop
Integrated Environmental Authorisations
Strategic Infrastructure Developments
Telephone Number: (012) 399 9406
Email Address: MEssop@environment.gov.za

This proposed amendment letter must be read in conjunction with the EA dated 15 August 2011 as amended.

In terms of Regulation 10(2) of the Environmental Impact Assessment Regulations, 2010 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 12 (twelve) days of the date of the Department's decision in respect of the amendment made as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 7 of the Regulations, which prescribes the appeal procedure to be followed. This procedure is summarised in the attached document. Kindly include a copy of this document with the letter of notification to interested and affected parties.

Should the applicant or any other party wish to appeal any aspect of the amendment decision a notice of intention to appeal must be lodged by all prospective appellants with the Minister, within 20 days of the date of this decision, by means of one of the following methods:

By post: Private Bag X447,
Pretoria, 0001; or
By hand: Environment House
473 Steve Biko Road
Arcadia
Pretoria.

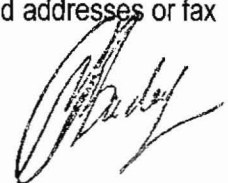
If the applicant wishes to lodge an appeal, it must also serve a copy of the notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection, should you intend to submit an appeal.

Please include the Department (*Attention: Director: Integrated Environmental Authorisations*) in the list of interested and affected parties, notified through your notification letter to interested and affected parties, for record purposes.

Appeals must be submitted in writing to:

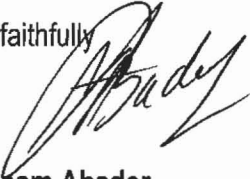
Mr Z Hassam, Director: Appeals and Legal Review, of this Department at the above mentioned addresses or fax number. Mr Hassam can also be contacted at:

Tel: (012) 399 9356
Email: AppealsDirectorate@environment.gov.za



Please note that the Minister may, on receipt of appeals against the decision suspend the authorisation pending the outcome of the appeals procedure.

Yours faithfully



Mr Ishaam Abader

**Deputy Director-General: Legal, Authorisations, Compliance and Enforcement
Department of Environmental Affairs**

Date:

5/08/2014

APPEALS PROCEDURE IN TERMS OF CHAPTER 7 OF THE NEMA EIA REGULATIONS, 2010 (THE REGULATIONS) AS PER GN R.543 OF 2010 TO BE FOLLOWED BY THE APPLICANT AND INTERESTED AND AFFECTED PARTIES UPON RECEIPT OF NOTIFICATION OF A DECISION

APPLICANT	INTERESTED AND AFFECTED PARTIES (IAPs)
1. Receive decision from the relevant Competent Authority (the Department of Environmental Affairs [DEA]).	1. Receive decision from Applicant/Consultant.
2. Within 12 days of date of the decision notify all IAPs of the decision and draw their attention to their right to appeal against the decision in terms of Chapter 7 of the Regulations.	2. N/A.
3. If you want to appeal against the decision, submit a notice of intention to appeal within 20 days of the date of the decision with the Minister of Water and Environmental Affairs (the Minister).	3. If you want to appeal against the decision, submit a notice of intention to appeal within 20 days of the date of the decision with the Minister of Water and Environmental Affairs (the Minister).
4. After having submitted your notice of intention to appeal to the Minister, provide each registered IAP with a copy of the notice of intention to appeal within 10 days of lodging the notice.	4. After having submitted your notice of intention to appeal to the Minister, provide the applicant with a copy of the notice of intention to appeal within 10 days of lodging the notice.
5. The Applicant must also serve on each IAP: <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection. 	5. Appellant must also serve on the Applicant within 10 days of lodging the notice, <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.
6. The appeal must be submitted in writing to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.	6. The appeal must be submitted to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.
7. Any IAP who received a notice of intention to appeal may submit a responding statement to that appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.	7. An Applicant who received notice of intention to may submit a responding statement to the appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.

NOTES:

1. An appeal against a decision must be lodged with:-

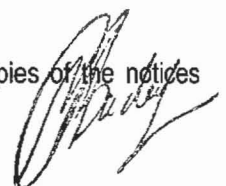
- a) the Minister of Water and Environmental Affairs if the decision was issued by the Director-General of the Department of Environmental Affairs (or another official) acting in his/her capacity as the delegated Competent Authority;
- b) the Minister of Justice and Constitutional Development if the applicant is the Department of Water Affairs and the decision was issued by the Director-General of the Department of Environmental Affairs (or another official) acting in his/her capacity as the delegated Competent Authority;

2. An appeal lodged with:-

- a) the Minister of Water and Environmental Affairs must be submitted to the Department of Environmental Affairs;
- b) the Minister of Justice and Constitutional Development must be submitted to the Department of Environmental Affairs;

3. An appeal must be:-

- a) submitted in writing;
- b) accompanied by:
 - a statement setting out the grounds of appeal;
 - supporting documentation which is referred to in the appeal; and
 - a statement that the appellant has complied with regulation 62 (2) or (3) together with copies of the notices referred to in regulation 62.





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2682

DEA Reference: 12/12/20/1651/A2

Enquiries: Muhammad Essop

Telephone: (012) 395 1734 **Fax:** (012) 320 7539 **E-mail:** MEssop@environment.gov.za

Mr J Coetzee
Longyuan Mulilo De Aar Wind Power (Pty) Ltd
PO Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Fax number: (021) 935 0505
Telephone number: (021) 934 5278

PER FACSIMILE / MAIL

Dear Mr Coetzee

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 15 AUGUST 2011 FOR THE PROPOSED ESTABLISHMENT OF A WIND POWER GENERATING FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

The Environmental Authorisation (EA) issued for the above application by this Department on 15 August 2011 as amended and your application for amendment to the EA received by this Department on 20 June 2014 refers.

Based on a review of the reason for requesting an amendment to the above Environmental Authorisation, this Department, in terms of Regulation 42 of the Environmental Impact Assessment Regulations, 2010, has decided to amend the EA dated 15 August 2011 as follows:

Amendment to extend the validity period:

The validity period of the Environmental Authorisation is hereby extended for a period of 02 (two) years from the date of signature of this amendment decision. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for Environmental Authorisation must be made in order for the activity to be undertaken.

This correspondence is only for the extension of the validity period as stated herein. All conditions set out in the original Environmental Authorisation dated 15 August 2011 remain unchanged and must be adhered to.

This proposed amendment letter must be read in conjunction with the Environmental Authorisation dated 15 August 2011 as amended.

In terms of Regulation 10(2) of the Environmental Impact Assessment Regulations, 2010 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 12 (twelve) days of the date of the Department's decision in respect of the amendment made as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 7 of the Regulations, which prescribes the appeal procedure to be followed. This procedure is summarised in the attached document. Kindly include a copy of this document with the letter of notification to interested and affected parties.

Should the applicant or any other party wish to appeal any aspect of the amendment decision a notice of intention to appeal must be lodged by all prospective appellants with the Minister, within 20 days of the date of this decision, by means of one of the following methods:

By post: Private Bag X447,
Pretoria, 0001; or
By hand: Environment House
473 Steve Biko Road
Arcadia
Pretoria.

Please note that the Department is relocating between 11 and 31 July 2014. Any correspondence submitted as of 24 July 2014 may be submitted to the new physical address of Environment House, Cnr of Steve Biko and Soutpansberg Road, Pretoria.

If the applicant wishes to lodge an appeal, it must also serve a copy of the notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection, should you intend to submit an appeal.

Please include the Department (*Attention: Director: Integrated Environmental Authorisations*) in the list of interested and affected parties, notified through your notification letter to interested and affected parties, for record purposes.

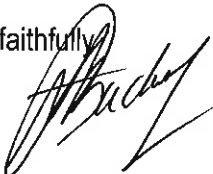
Appeals must be submitted in writing to:

Mr Z Hassam, Director: Appeals and Legal Review, of this Department at the above mentioned addresses or fax number. Mr Hassam can also be contacted at:

Tel: (012) 399 9356
Email: AppealsDirectorate@environment.gov.za

Please note that the Minister may, on receipt of appeals against the decision suspend the authorisation pending the outcome of the appeals procedure.

Yours faithfully



Mr Ishaam Abader
Deputy Director-General: Legal, Authorisations, Compliance and Enforcement
Department of Environmental Affairs

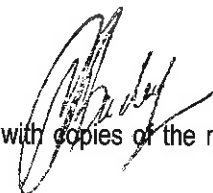
Date: 5/08/2014

APPEALS PROCEDURE IN TERMS OF CHAPTER 7 OF THE NEMA EIA REGULATIONS, 2010 (THE REGULATIONS) AS PER GN R.543 OF 2010 TO BE FOLLOWED BY THE APPLICANT AND INTERESTED AND AFFECTED PARTIES UPON RECEIPT OF NOTIFICATION OF A DECISION

APPLICANT	INTERESTED AND AFFECTED PARTIES (IAPs)
1. Receive decision from the relevant Competent Authority (the Department of Environmental Affairs [DEA]).	1. Receive decision from Applicant/Consultant.
2. Within 12 days of date of the decision notify all IAPs of the decision and draw their attention to their right to appeal against the decision in terms of Chapter 7 of the Regulations.	2. N/A.
3. If you want to appeal against the decision, submit a notice of intention to appeal within 20 days of the date of the decision with the Minister of Water and Environmental Affairs (the Minister).	3. If you want to appeal against the decision, submit a notice of intention to appeal within 20 days of the date of the decision with the Minister of Water and Environmental Affairs (the Minister).
4. After having submitted your notice of intention to appeal to the Minister, provide each registered IAP with a copy of the notice of intention to appeal within 10 days of lodging the notice.	4. After having submitted your notice of intention to appeal to the Minister, provide the applicant with a copy of the notice of intention to appeal within 10 days of lodging the notice.
5. The Applicant must also serve on each IAP: <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection. 	5. Appellant must also serve on the Applicant within 10 days of lodging the notice, <ul style="list-style-type: none"> • a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.
6. The appeal must be submitted in writing to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.	6. The appeal must be submitted to the Minister within 30 days after the lapsing of the period of 20 days provided for the lodging of the notice of intention to appeal.
7. Any IAP who received a notice of intention to appeal may submit a responding statement to that appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.	7. An Applicant who received notice of intention to may submit a responding statement to the appeal to the Minister within 30 days from the date that the appeal submission was lodged with the Minister.

NOTES:

1. **An appeal against a decision must be lodged with:-**
 - a) the Minister of Water and Environmental Affairs if the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
 - b) the Minister of Justice and Constitutional Development if the applicant is the Department of Water Affairs and the decision was issued by the Director- General of the Department of Environmental Affairs (or another official) acting in his/ her capacity as the delegated Competent Authority;
2. **An appeal lodged with:-**
 - a) the Minister of Water and Environmental Affairs must be submitted to the Department of Environmental Affairs;
 - b) the Minister of Justice and Constitutional Development must be submitted to the Department of Environmental Affairs;
3. **An appeal must be:-**
 - a) submitted in writing;
 - b) accompanied by:
 - a statement setting out the grounds of appeal;
 - supporting documentation which is referred to in the appeal; and
 - a statement that the appellant has complied with regulation 62 (2) or (3) together with copies of the notices referred to in regulation 62.





environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 473 Steve Biko, Arcadia · PRETORIA
Tel (+ 27 12) 399 9372

DEA Reference: 12/12/20/1651/AM4

Enquiries: Ms Dikeledi Mokotong

Telephone: (012) 399 8801 **E-mail:** dmokotong@environment.gov.za

Mr John Hamilton Callum
Longyuan Mulilo De Aar Wind Power (Pty) Ltd
PO Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Telephone Number: (021) 934 5278
Email Address: johnny@mulilo.com

PER EMAIL / MAIL

Dear Mr Callum

AMENDMENT OF THE ENVIRONMENTAL AUTHORISATION ISSUED ON 15 AUGUST 2011 FOR THE ESTABLISHMENT OF A WIND POWER GENERATING FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

The Environmental Authorisation (EA) issued for the above application by this Department on 15 August 2011 and your application for amendment of the EA received by this Department on 25 November 2015 refer.

Based on a review of the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment Regulations, 2014, has decided to amend the EA dated 15 August 2011 as follows:

Amendment 1: Removal of Condition 10.5.7 of the EA

Condition 10.5.7 on Page 15 of the EA is hereby removed.

Amendment 2: Amendment to Condition 10.7.8 of the EA

Condition 10.7.8 on Page 16 of the EA:

From:

"Hazardous and flammable substances must be stored and used in compliance to the applicable regulations and safety instructions. Furthermore, no chemicals must be stored nor may any vehicle maintenance occur within 350m of temporal zone of wetlands, a drainage line with or without an extensive floodplain or hillside wetlands."



To:

"Hazardous and flammable substances must be stored and used in compliance to the applicable regulations and safety instructions. Furthermore, no chemicals must be stored nor may any vehicle maintenance occur within 20m of temporal zone of wetlands, a drainage line with or without an extensive floodplain or hillside wetlands."

Amendment 3: Amendment to the contact details of the holder of the EA

From:

"Longyuan Mulilo De Aar Wind Power (Pty) Ltd"

Represented by: Mr Johannes Coetzee
PO Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

Telephone Number: (021) 934 5268
Fax Number: (021) 935 0505
Cell phone Number: (082) 990 2473
Email Address: Johannes@mulilo.com

To:

"Longyuan Mulilo De Aar Wind Power (Pty) Ltd"

Represented by: Mr John Hamilton Callum
PO Box 50
CAPE TOWN INTERNATIONAL AIRPORT
7525

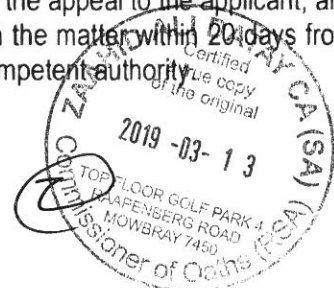
Telephone Number: (021) 934 5278
Fax Number: (021) 935 0505
Email Address: johnny@mulilo.com

This proposed amendment letter must be read in conjunction with the EA dated 15 August 2011 as amended.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014 (the Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 14 (fourteen) days of the date of the Department's decision in respect of the amendment made as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 2 of Government Notice No. R. 993, which prescribes the appeal procedure to be followed. Kindly include a copy of this document with the letter of notification to interested and affected parties.

An appellant must submit an appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the applicant by the competent authority.



UPS

By post: Private Bag X447,
Pretoria,
0001; or
By hand: Environment House
473 Steve Biko,
Arcadia, Pretoria,

Appeals must be submitted in writing to:

Mr Z Hassam, Director: Appeals and Legal Review, of this Department at the above mentioned addresses. Mr Hassam can also be contacted at:

Tel: (012) 399 9356
Email: Appealsdirector@environment.gov.za

Please note that in terms of section 43(7) of the National Environmental Management Act, 1998, an appeal under section 43 of that Act will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

For guidance on appeals submitted to the Minister in terms of NEMA and the SEMAs, please find a copy of the guideline on the administration of appeals on the Department's website: (https://www.environment.gov.za/documents/forms#legal_authorisations).

Yours faithfully


Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Date: 3/18/2015

cc: Ms Louise Corbett	Email: louise.corbett@gmail.com
-----------------------	---------------------------------





the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, MetLife Towers, T-Floor, Tel 053 807 7300, Fax 053 807 7328

Equiries :
Dipatlisilo : Mr. Isaac Gwija
Navrae :
Imibuzo :

Reference :
Tshupelo : NC/BA/05/PIX/EMT/DEA2/2014
Verwysing : (Amendment2)
Isalathiso :

Date :
Letlha :
Datum : 16th February 2016
Umhla :

Longyuan Mulilo De Aar Wind Power (Pty) Ltd

Constantin Hatzilambros
P.O. Box 50
Cape Town International Airport
7525

021 – 935 0505
constantin@mulilo.com

Dear Sir/Madam

THE GRANTING OF THE AMENDMENT FOR THE ENVIRONMENTAL AUTHORISATION FOR GN.R544: ACTIVITY 11(x) & (xi), 18 (i): THE LONGYUAN MULILO DE AAR WIND POWER (PTY) LTD WIND ENERGY FACILITY WOULD CONSIST OF 67 TURBIES AND GENERATE 100.5MW OF ENERGY, THE PROJECT INCLUDE ASSOCIATED INFRASTRUCTURE INCLUDING ROADS, SUBSTATION, TRANSMISSION LINES, ETC, SMOUSPOORT BOERDERY PTY LTD (REMAINDER OF FARM 130) AND ZWARTEKOPJES 2, BRITSTOWN (PORTION 2 OF THE FARM 131) NEAR DE AAR, EMTHANJENI LOCAL MUNICIPALITY, PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

By virtue of the powers conferred to me by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Regulations, 2010, THE DEPARTMENT HEREBY GRANTS OF THE AMENDMENT FOR THE ENVIRONMENTAL AUTHORISATION FOR GN.R544: ACTIVITY 11(x) & (xi), 18 (i): THE LONGYUAN MULILO DE AAR WIND POWER (PTY) LTD WIND ENERGY FACILITY WOULD CONSIST OF 67 TURBIES AND GENERATE 100.5MW OF ENERGY, THE PROJECT INCLUDE ASSOCIATED INFRASTRUCTURE INCLUDING ROADS, SUBSTATION, TRANSMISSION LINES, ETC, SMOUSPOORT BOERDERY PTY LTD (REMAINDER OF FARM 130) AND ZWARTEKOPJES 2, BRITSTOWN (PORTION 2 OF THE FARM 131) NEAR DE AAR, EMTHANJENI LOCAL MUNICIPALITY, PIXLEY KA SEME DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE. A detailed description of the activity is given in the **Amendment Application Forms** dated **November 2015** subject to the conditions listed in the environmental authorisation and reasons for the decision are attached herewith. In terms of regulation 10(2) of the Environmental Impact Assessment Regulations, 2010, you are instructed to notify all registered interested and affected parties, in writing and within twelve (12) calendar days of receiving of this letter, of the Department's decision in respect of your application as well as the provisions regarding the making of appeals that are provided for in the regulations.

Permit 18/2014(Amendment2)

Your attention is drawn to Chapter 7 of the Regulations which regulates appeal procedures. Should you / any person affected by this decision wish to appeal any aspect of the decision, you or a person affected by this decision must, *inter alia*, lodge a notice of intention to appeal, as prescribed in regulation 62 of Environmental Impact Assessment Regulations, 2010, with the Member of the Executive Council, Ministry of Environment and Nature Conservation within 20 days of receiving this letter, by means of one of the following methods:

By facsimile: (053) 832 1026;
By post: Private Bag x 6102, Kimberley, 8300 or
By hand: T-Floor, Metlife Towers, Kimberley, 8300.

Should you decide to appeal, you must serve a copy of your notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection.

Yours faithfully



Mr. B Fisher – Director

Environmental Quality Management

Department of Environment and Nature Conservation

DATE OF DECISIONS:

25 February 2016

Cc: Mr. Francois Greese
Aurecon South Africa (Pty) Ltd
Francis.greese@aurecongroup.com



ENVIRONMENTAL AUTHORISATION
in terms of National Environmental Management Act, 1998 (Act No. 107 of
1998) and the Environmental Impact Assessment Regulations, 2010

**Authorisation Register
Number:**

PERMIT 18/2014

Reference Number:

NC/BA/05/PIX/EMT/DEA2/2014

Last Amended:

07 JANUARY 2016 (Second Amendment)

Holder of Authorisation:

**LONGYUAN MULILO DE AAR WIND POWER
(PTY) LTD**

Location of activity:

**SMOUSPOORT FARM (REMAINING EXTENT OF
FARM 130) AND ZWARTEKOPJES FARM
(REMAINING EXTENT OF PORTION 2 OF FARM
131), DE AAR.**

DEFINITIONS

Activity means an activity identified in Government Notice No. R. 543,544 and No. R. 545 of 2010 as a listed activity.

Applicant means a person who has submitted an application.

Application means an application for an environmental authorization in terms of chapter 3 of the Environmental Impact Assessment Regulations of 2010.

Basic assessment report means a report contemplated in regulation 22.

Environmental Impact Report means a report contemplated in regulation 31 of the Environmental Impact Assessment Regulations of 2010.

EAP means an environmental assessment practitioner as defined in section 1 of the Act.

Interested and affected party means a interested and affected party contemplated in section 24(4) (d) of the Act, and which in terms of that section includes:

- ◆ Any person, group of persons or organisation interested in or affected by an activity, and
- ◆ Any organ of state that may have jurisdiction over any aspect of the activity.

Public participation process means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

The Act means the National Environmental Management Act, 1998 (Act No. 107 of 1998).

DECISION

The Department is satisfied, on the basis of information available to it and subject to compliance with conditions of this environmental authorisation, that the applicant should be authorised to undertake the activity specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

ACTIVITIES AUTHORISED

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010 the Department hereby authorises –

LONGYUAN MULILO DE AAR WIND POWER (PTY) LTD

with the following contact details –

Constantin Hatzilambros
P.O Box 50
Cape Town International Airport
7525

Tel : 021 934 5288
Fax: 021 935 0505
E-mail: constantin@mulilo.com

to undertake the following activities (hereafter referred to as "the activity")

Activity No. 11 (x) &(xi) of GN. R.544 of 18 June 2010

The construction of:

- (x) buildings exceeding 50 square meters in size;
- (xi) infrastructure or structures covering 50 square meters or more

where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such construction will occur behind the development setback line.

Activity No. 18 (i) of GN. R.544 of 18 June 2010

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from:

(i) a watercourse;

excluding where such infilling, depositing, dredging, excavation, removal or moving;

(a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or

(b) occurs behind the development setback line.

At Smouspoort Farm (Remaining extent of Farm 130) and Zwarttekopjes Farm, (Remaining extent of portion 2 of Farm 131), De Aar, which falls within the jurisdiction of Emthanjeni Local Municipality, of Pixley ka Seme District Municipality, with the following co-ordinates (Longitude (E) 23° 49' 57", Latitude (S) 30° 44' 57")

hereafter referred to as "the property".

The granting of this Environmental Authorisation is subject to the conditions set out below.

CONDITIONS

Scope of authorisation:

1. Authorisation of the activity is subject to the conditions contained in this authorisation, which conditions form part of the environmental authorisation and are binding on the holder of the authorisation.

2. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.
3. The activity(s) which is authorised must only be carried out at the property indicated above.
4. Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.
5. This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

General conditions:

6. A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.
7. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
8. The holder of the authorisation must notify the Department, in writing and within 24 (TWENTY FOUR) hours, if condition 16 of this authorisation cannot be or is not adhered to. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 (SEVEN) days if a condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.

9. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.
10. This authorization is subject to the approval by the relevant local authorities i.e. in terms of any relevant legislation administered by those local authorities.
11. The activity may not commence without the necessary permits/licenses/approvals and/or service agreements, where it is relevant, from or with the relevant regulatory authorities whether national, provincial or local (these include but are not limited to National Department of Environmental Affairs, National Department of Agriculture, Forestry and Fisheries, Department of Housing & Local Government, Department of Water and Sanitation, Department of Mineral Resources, Department of Transport, Department of Roads & Public Works, Department Arts, Sports & Culture, South African Heritage Resources Agency, South African Civil Aviation Authority).
12. The activity, including site preparation, may not commence before the thirty (30) day appeal period expires or until such time as the Department has considered any appeals that have been lodged.
 - a. One week's written notice must be given to the Administration clerk (Impact Management Unit) before commencement with the activity.
 - b. Such notice shall make clear reference to the site location details and the reference number given above.
 - c. The said notice must also include proof of compliance with the following conditions described herein:
 - i. Conditions: 11 and 23.
13. The applicable conditions of this authorization must form part of all contractors' and sub-contractors' conditions of contract. A performance-based requirement with regard to environmental impact management must be included in all contracts related to any aspect of this authorization.

14. The applicant must carry out regular environmental audits to establish compliance with the conditions of this authorization and contracts.
15. Any complaints regarding the said development must be brought to the attention of the Department within 24 (twenty four) hours after receiving the complaint. A complaints register must be kept up to date for inspection by the Department
16. Records relating to the compliance/non-compliance with the conditions of the authorization and contracts must be kept in good order. Such records must be made available to the Department within 7 (seven) days of receipt of a written request by the Department for such records.
17. Officials in the employ of the Department shall be given access to the property as described above (see detailed description of the activity) for the purposes of assessing and/or monitoring compliance with the conditions contained in this Environmental Authorization. Where the activity is located on a third party's property the applicant shall be responsible to arrange access for departmental officials
18. This Department may add to, change and/or amend any of the conditions in this authorization if, in the opinion of the Department, the addition, change of amendment is environmentally justified. In event that such impacts exceed its significance as predicted in the independent consultant's environmental scoping report and supporting documentation, the authorization may be withdrawn after proper procedures were followed.
19. In the event of any dispute concerning the significance of a particular impact, the opinion of this department in respect of its significance will prevail.
20. This Department and any national department, provincial department, local authorities or committees appointed in terms of the conditions of this application or any other public authority or organization shall not be held responsible for any damage or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of approval as set out in this document or any other subsequent document emanating from these conditions of approval.

21. The applicant shall be responsible for all costs necessary to comply with the above conditions unless otherwise specified.
22. The applicant must apply the principle of best practicable environmental option for all technologies used/ implemented during construction.

Appeal of authorisation:

23. The holder of the authorisation must notify every registered interested and affected party, in writing and within 7 (SEVEN) calendar days, of receiving notice of the Department's decision to authorise the activity.
24. The notification referred in 23 must –
 - specify the date on which the authorisation was issued;
 - inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the regulations; and
 - advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.
25. If the applicant should appeal against this Environmental Authorisation, he/she must inform all interested and affected persons that such an appeal is being lodged with the MEC and if requested, the applicant/appellant must provide those persons with reasonable access to a full copy of the appeal within a reasonable time before expiry of the thirty day appeal period.

Monitoring:

26. The applicant must appoint a suitably experienced Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in this authorisation are implemented.
27. The ECO shall be appointed before commencement of any land clearing or construction activities.
28. The ECO shall keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.

29. The ECO shall remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.
30. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

Recording and Reporting to the Department:

31. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
32. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 days if a condition of this authorisation is accompanied by the reason for non-compliance.
33. Records relating to the compliance/ non-compliance with the conditions of the authorisation and contracts must be kept in good order. Such records must be made available to the Department within 7 days of receipt of a written request by the Department for such records.
34. Any complaints regarding the said development must be brought to the attention of the Department within 24 hours after receiving the complaint. A complaints register must be kept up to date for inspection by the Department.

Commissioning of the activity:

35. Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.
36. The authorised activity shall not commence within thirty (30) days of the date of signature of the authorisation.

37. Should you be notified by the minister of a suspension of the authorisation pending appeal procedures, you shall not commence with the activity unless authorised by the minister in writing.

Operation of the activity:

38. Fourteen (14) days written notice must be given to the Department that the activity operational phase will commence.
39. The level of noise from construction activities must comply with the National Noise Control Regulations and SANS10103:2008.
40. The level of dust in the construction site during the construction phase must be kept as low as possible at all the times and comply with the dust regulations promulgated under the Air Quality Act, 2004 (Act 39 of 2004).
41. The construction of access roads must not cause changes to surface water runoff and proper measures to prevent soil erosion must be implemented.
42. All the waste material which will be generated during the construction phase must be collected and transported by a roadworthy vehicle to a licensed waste disposal facility.
43. All forms of pollution must be prevented, or where it cannot, should be minimized or remedied.
44. The appropriate toilets must be supplied for the entire construction period and must be serviced on regular basis.
45. In the event of oil spillages and contamination of soil by hazardous substances that contaminated area must be cleared up immediately by removing the contaminated soil and disposing it off into the designated hazardous skip bin for correct disposal.
46. The clearing of vegetation must be restricted within the development footprint
47. The protected trees such as shepherd's tree (*Boscia albitrunca*) which occurs in the application site must not be affected by the proposed development; alternatively the permit for removal of the protected trees must be applied

and granted by the Department of Agriculture Forestry and Fisheries, prior to the proposed commencement of the proposed activity.

48. The spreading of alien vegetation must be avoided where possible. In the event of occurrence of invasive alien vegetation, the removal must be in accordance with the Conservation of Agricultural Resources Act (Act 43 of 1983).
49. The Environmental Management Plan must be amended, if it has already been amended, it must be properly implemented as per the Environmental Authorisation by the Department of Environmental Affairs.
50. All the mitigation measures outlined in the Environmental Management Plan must be adhered to.

DURATION AND PERIOD OF VALIDITY

This activity(s) must commence within a period of three (3) years from the date of issue. If commencement does not occur within that period and the intention is to extend the validity period of the authorisation, an application for amendment to extend the validity period must be launched at least six months before the validity period lapses. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorization must be made in order for the activity to be undertaken.

APPEAL

In terms of Chapter 7 of Environmental Impact Assessment Regulations, 2010, if the applicant or a person affected by this Decision wishes to appeal this decision, a notice of intention to appeal must be lodged within Twenty (20) days after date of the decision, and an appeal must **be lodged within thirty (30) days after lapsing of 20 days contemplated in regulation 60 (1)** of lodging of the notice to appeal to:

The Member of the Executive Council
Ministry of Environment & Nature Conservation
Private Bag X6102
Kimberley
8300
Fax: (053) 832 1026

Appeals must comply with the provisions of Chapter 7 of Environmental Impact Assessment Regulations, 2010 Government Notice No. R. 543 of 18 June 2010.



MR B. FISHER
DIRECTOR: ENVIRONMENTAL QUALITY MANAGEMENT
DEPARTMENT OF ENVIRONMENT & NATURE CONSERVATION

DATE OF ENVIRONMENTAL AUTHORISATION: 25th February 2016

ANNEXURE 1: REASONS FOR DECISION

1. Background

The applicant, **Longyuan Mulilo De Aar Wind Power (Pty) Ltd**, applied for authorization to carry on the following activities –

Activity No. 11 (x) &(xi) of GN. R.544 of 18 June 2010

The construction of:

(x) buildings exceeding 50 square meters in size;

(xi) infrastructure or structures covering 50 square meters or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such construction will occur behind the development setback line.

Activity No. 18 (i) of GN. R.544 of 18 June 2010

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from:

(ii) a watercourse;

excluding where such infilling, depositing, dredging, excavation, removal or moving;

(a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or

(b) occurs behind the development setback line.

The applicant appointed Aurecon South Africa (Pty)Ltd to undertake an environmental impact assessment process. Basic Assessment process was followed.

2. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) The information contained in the Environmental Impact Assessment Report
- b) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and
- c) The findings of the site visit undertaken by the case officer and the Environmental Assessment Practitioner on 19 March 2014.

3. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

- a) The Basic Assessment Report submitted by the applicant met the minimum requirements of the NEMA EIA Regulations.
- b) The legal and procedural requirements have been complied with.
- c) The information contained in the Basic Assessment Report and Appendices is to the satisfaction of the Department.
- d) Findings of the site visit conducted by the case officer and Environmental Assessment Practitioner.

4. Findings

After consideration of the information and factors listed above, the Department made the following findings –

- a) The application process was satisfactory in terms of the Regulation 36 of the EIA 2010 regulations.
- b) Public Participation Process met minimum requirements as per regulation 54.
- c) The legal and procedural requirements have been complied with and the information contained in the Basic Assessment Report
- d) Appendices contained in the Basic Assessment Report are up to the satisfaction of the Department.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The application is accordingly granted.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Environment House · 473 Steve Biko, Arcadia · PRETORIA

DEA Reference: 12/12/20/1651/AM5

Enquiries: Ms Shirley Chauke

Tel: 012 399 9216 E-mail: Schauke@environment.gov.za

Mr John Hamilton Cullum
Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd
PO Box 548
CAPE TOWN
7450

Tel: 021 685 3240

Email: johnny@mulilo.com

MAIL / E-MAIL

Dear Mr Cullum

AMENDMENT OF ENVIRONMENTAL AUTHORISATION ISSUED 15 AUGUST 2011 FOR THE LONGYUAN MULILO DE AAR MAANHAARBERG WIND ENERGY FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE.

The Environmental Authorisation (EA) issued for the above application by this Department on 15 August 2011, the EA amendment application received by the Department on 06 September 2019 refer.

Based on a review and the reason for requesting an amendment to the above EA, this Department, in terms of Chapter 5 of the Environmental Impact Assessment (EIA) Regulations, 2014, as amended, has decided to amend the EA dated 15 August 2011, as amended, as follows:

Amendment 1: Updating contact details of the holder of the EA from:

Longyuan Mulilo De Aar Wind Power (Pty) Ltd
Represented by: Mr John Hamilton Cullum
PO Box 50
Cape Town International Airport
7525

Tel: (021) 934 5278

Fax Number: (021) 935 0505

Email: johnny@mulilo.com

Is hereby amended to:

Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd
Represented by: Mr John Hamilton Cullum
PO Box 548
Howard Place
Cape Town
7450

M.S

Tel: (021) 685 3240
Fax Number: (086) 635 6809
Email: johnny@mulilo.com / bertus@mulilo.com

Amendment 2: The removal of Condition 10.5.4 from the EA which reads as follows:

"10.5.4. Commercial messages and graffiti on turbines must be avoided"

Reasons for the abovementioned amendment are as follows:

The contact person for the holder of the EA, Mr John Hamilton Cullum has moved office premises and therefore wishes to update the contact details of the representative of the holder of the EA. In addition, the name of the holder of the EA needs to be updated to include the letters '(RF)', as per the company registration documentation, i.e. Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd.

The visual specialist indicated that the site is far from receptors and that the logos on the nacelles and/or towers would not be clearly seen, due to the towers and nacelles being higher and therefore detail is less visible. The visual specialist indicated that the amendment to remove *Condition 10.5.4* from the EA and therefore provide logos on either or both tower and nacelle would not negatively impact on the visual impact of the infrastructure. The heritage specialist is also of the opinion that logos are not a heritage issue (in terms of landscape characteristics) and that the impact of logos on the landscape character is therefore within generally acceptable limits and the inclusion of logos would not impact of heritage resources. The visual impact of the logos on the landscape will be negligible and the approved amended will not result in an increased level of visual impact. The Civil Aviation Authority also confirmed via email dated 08 March 2017 that the inclusion of logos/branding on the nacelles will not be a problem according to the Civil Aviation Act (1962).

This letter must be read in conjunction with the EA dated 15 August 2011, as amended.

In terms of the Promotion of Administrative Justice Act, 2000 (Act No 3 of 2000), you are entitled to the right to fair, lawful and reasonable administrative action; and to written reasons for administrative action that affects you negatively. Further your attention is drawn to the provisions of the Protection of Personal Information Act, 2013 (Act no. 4 of 2013) which stipulates that the Department should conduct itself in a responsible manner when collecting, processing, storing and sharing an individual or another entity's personal information by holding the Department accountable should the Department abuses or compromises your personal information in any way.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014, as amended (the EIA Regulations), you are instructed to notify all registered interested and affected parties, in writing and within 14 (fourteen) days of the date of the EA, of the Department's as well as the provisions regarding the submission of appeals that are contained in the Regulations.

Your attention is drawn to Chapter 2 of National Environmental Management Act, 1998 (Act No. 107 of 1998) National Appeal Regulations published under Government Notice R993 in Government Gazette No. 38303 dated 08 December 2014 (National Appeal Regulations, 2014), which prescribe the appeal procedure to be followed. Kindly include a copy of this document (National Appeal Regulations, 2014) with the letter of notification to interested and affected parties in this matter.

Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any

organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

The Director: Appeals and Legal Review of this Department at the below mentioned addresses.

By email: appealsdirector@environment.gov.za;

By hand: Environment House

473 Steve Biko,

Arcadia,

Pretoria,

0083; or

By post: Private Bag X447,

Pretoria,

0001;

Please note that in terms of Section 43(7) of the National Environmental Management Act, Act No. 107 of 1998, as amended, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appealsdirector@environment.gov.za.

Yours faithfully



Mr Sabelo Malaza

Chief Director: Integrated Environmental Authorisations

Department of Environmental Affairs

Date: 08/10/2019

cc	Nicole Holland	Holland & Associates Environmental Consultants	Email: nicole@hollandandassociates.net
----	----------------	--	---

Appendix 4
Operational Phase EMP (OEMP)

OPERATION PHASE: ENVIRONMENTAL MANAGEMENT PROGRAMME

1. OBJECTIVE

The overall goal for the Operational Environmental Management Programme (OEMP) is to ensure that the operation of the wind energy facility (WEF) does not have unforeseen negative impacts on the environment and to ensure that all impacts are monitored and the necessary corrective action is taken timeously. In order to achieve this goal, it is necessary to operate the WEF in a way that:

- Ensures that operational activities are properly managed in respect of environmental aspects and impacts. Such potential impacts include those identified through the EIA process for the project, including potential impacts on: botany; freshwater resources; avifauna; bats; noise; heritage resources (including archaeology); socio-economics; visual and traffic.
- Enables the WEF operational activities to be undertaken without significant disruption to other land uses in the area, in particular with regards to noise impacts, farming practices, traffic and road use, and effects on local residents.
- Minimises impacts on birds and other fauna found onsite.
- Monitors and evaluates the impacts of the WEF on birds and bats in order to mitigate appropriately.
- Established an environmental baseline for WEF sites in De Aar with regard to priority bird species using the site.

2. FINANCING OF THE OEMP

The budget for the implementation of the OEMP shall come out of Longyuan Mulilo De Aar Wind Power (RF) (PTY) Ltd's operational budget. Longyuan Mulilo De Aar Wind Power (RF) (PTY) Ltd must review the OEMP and allocate the requisite funds to facilitate compliance. Since many of the items addressed in the OEMP relate to required preventative maintenance, operator legal compliance, and responsible environmental management, this cost should not represent significant additional expenditure.

3. COMPLIANCE MONITORING

Prior to the commissioning of the WEF, a suitably qualified Environmental Manager (EM) should be appointed by Longyuan Mulilo De Aar Wind Power. The role of the EM during this phase would be to address the on-going operation of the WEF and to ensure that the issues that have been identified in the OEMP are properly addressed on a continued basis and in a manner that limits any environmental impact.

The primary roles and responsibilities of the EM will be:

- To represent Longyuan Mulilo De Aar Wind Power (RF) (PTY) Ltd in the implementation of the OEMP on site;
- To inspect the site on a monthly basis and advise on areas of environmental management, or compliance with the OEMP, requiring attention;
- To inspect the site more regularly during the first three months of operation, during which more frequent monitoring may be required for the establishment of certain programmes or aspects of environmental management;
- Maintain photographic record of site inspections undertaken as well as any incidents that occur and subsequent corrective action;

- Be responsible for ensuring that the Avifaunal Post-Construction Monitoring Programme (Appendix 7) and Operational Phase Bat Monitoring Programmes (Appendix 8) required in terms of the EMPr is carried out (with the requisite specialist input as required);
- To liaise with various specialists and local authorities as and when required, regarding issues relating to environmental management;
- To report on compliance with the OEMP specifications to Longyuan Mulilo De Aar Wind Power (RF) (PTY) Ltd;
- To facilitate environmental audits and ensure that they are undertaken, as required;
- To keep a comprehensive record of environmental management, and any issues of non-compliance for audit purposes. Such monitoring records shall be kept in an Environmental Management File on site; and
- To undertake any other tasks outlines in this document, on behalf of Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd.

4. OEMP FRAMEWORK

The OEMP is presented in tabular format illustrating the activity, aspect, impact, mitigation measure, performance indicators, resources, schedule and verification. These criteria are listed and defined below:

- **Activity:** component/ activity of the project for which the impact has been identified;
- **Aspect:** the aspect of the above activity which will be impacted;
- **Impact:** the environmental impact identified and to be mitigated;
- **Mitigation measure (impact management action):** measures identified for implementation in terms of environmental management to reduce, rectify or contain the identified environmental impact – mitigation is divided into the following:
 - **Objective:** desired outcome of mitigation measure,
 - **Mechanism:** method of achieving the objective;
- **Performance indicators:** outcomes that will indicate achievement of objective/s;
- **Responsibility:** party or parties identified for implementation of mitigation measure/s;
- **Resources:** available resources to aid implementation of mitigation;
- **Schedule:** timeframe in which identified impact and mitigation measure is anticipated to occur; frequency of monitoring required; and/or time periods within with the impact management actions must be implemented; and
- **Verification:** party or parties identified as responsible for review and assessment of final outcome.

Table 1: Operational Management Programme Framework

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
All Activities	Environmental management documentation and procedures.	<p>No framework within which to locate the management of the operational phase.</p> <p>No procedures against which to assess environmental performance during the operational phase and thus no measure of compliance.</p>	<p>Objective: To ensure that the operation of the WEF does not result in avoidable impacts on the environment and that any impacts that do occur are anticipated and managed.</p> <p>Mechanism:</p> <ol style="list-style-type: none"> 1) Appoint a suitably qualified Environmental Manager (EM) to monitor compliance (either independent or in-house). 2) Audit the compliance with the requirements of the environmental specification contained within the OEMP. 3) <u>Appoint an independent Environmental Professional to undertake bi-annual audits for the first three years of operation and once every five years thereafter. Each audit is to be based on site visits by the auditor as well as a review of any records of environmental management to be kept by the EM. The audit must also determine whether the OEMP is adequately dealing with the range of environmental impacts on the site, i.e. whether the plan is still appropriate, or whether it needs to be extended. The Audit Report produced shall comply with the requirements of Regulation 34 of GN R982, as amended, and shall meet the content requirements laid out in Appendix 7 of GN R982, as</u> 	<p>Environmental impacts effectively monitored and managed during the operational phase.</p> <p>Comprehensive record of compliance and remedial actions available to the authorities.</p>	O&M Contractor	EMP	<p>Twice in the first three years and then once every five years</p> <p><u>Independent audits to be undertaken bi-annually for the first three years of operation and once every five years thereafter.</u></p>	<p>EM</p> <p>DEA</p> <p><u>DENC</u></p>

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p><u>amended. The audit report is to include recommendations of changes required to the OEMP document and/or any Appendices to the EMP that have relevance to the Operational Phase, management practices etc to improve environmental management of the site. The results of this audit must be submitted to DEA and DENC.</u></p>					
All Activities	Protection of the surrounding environment (aquatic and terrestrial)	Impacts of the operation and maintenance of the WEF on the surrounding environment (including local flora, fauna, bats, avifauna and watercourses around the proposed development.	<p>Objective: To maintain minimised footprints of disturbance of vegetation / habitats on-site. To ensure and encourage plant regrowth in areas of post-construction rehabilitation.</p> <p>Mechanisms:</p> <ol style="list-style-type: none"> 1) Vehicle movements will be restricted to designated roadways. 2) Existing roads will be maintained to ensure limited erosion and impact on areas adjacent to roadways. 3) Implementation of the Revegetation and Rehabilitation Plan (Appendix 10). 4) Implementation of the Alien Vegetation Removal Programme (Appendix 11). 5) <u>Rescued plants must be monitored for at least 3 years post relocation and survival success must be reported annually by November to DENC Permits (M Smit) and RDS (E Swart). These correspondences must include the permit reference number.</u> 6) <u>Only locally indigenous species may be used for rehabilitation. Monitoring reporting to be provided annually (by</u> 	<p>No further disturbance to vegetation.</p> <p>Continued improvement in rehabilitation efforts.</p>	O&M Contractor	<p>EMP</p> <p>Revegetation and Rehabilitation Plan</p> <p>Alien Vegetation Removal Programme</p> <p>Storm Water Management Plan</p> <p>Open Space Management Plan</p> <p><u>DENC Flora Permit</u></p> <p><u>General Authorisation issued for Section 21 (c & i) water use activities</u></p>	<p>Regular inspection of plant regrowth, performance of rehabilitation efforts and weed infestation</p> <p><u>Rescued plants must be monitored annually (November) for 3 years post-construction.</u></p> <p><u>Rehabilitation monitoring must occur annually for 5 years post rehabilitation.</u></p> <p><u>Annual habitat assessment for three years of rehabilitated stream crossings</u></p>	<p>EM</p> <p>DEA</p> <p><u>DENC</u></p> <p><u>DWS</u></p>

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>November) to the DENC Permits for at least 5 years post rehabilitation activities.</p> <p>7) Ongoing implementation of the Storm Water Management Plan (Appendix 14) to ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion.</p> <p>8) Ensure ongoing implementation of the Open Space Management Plan (Appendix 15).</p> <p>9) <u>Commission the habitat assessment study at all stream crossings to ensure that the rehabilitation is stable, failing which, remedial action must be taken to rectify any impacts.</u></p> <p>10) <u>The quantity of groundwater abstracted must be metered and the total recorded as at the last day of each month.</u></p> <p>11) <u>Upon completion of the water use, the water user must undertake a habitat assessment study annually for 3 years to ensure that the rehabilitation is stable, failing which remedial action must be taken to rectify any impacts.</u></p>					
All activities	Protection of avifauna	<p>Disturbance to or loss of birds as a result of collision with the turbine blades.</p> <p>Disturbance to or loss of birds as a result of collision with the overhead</p>	<p>Objective: To reduce the impact of the operating WEF on priority bird species.</p> <p>Mechanisms:</p> <ul style="list-style-type: none"> Implementation of the Avifaunal Post-Construction Monitoring Programme (Appendix 7). Bird flappers to be fitted to overhead power lines, where required (as 	<p>No additional disturbance to avifauna populations on the WEF site.</p> <p>No additional disturbance to avifauna populations along</p>	<p>Bird specialist</p> <p>O&M Contractor</p>	<p>EMP</p> <p>Avifaunal Post-Construction Monitoring Programme</p> <p><u>Proposed Strategy for</u></p>	<p>In accordance with the Avifaunal Post-Construction Monitoring Programme (Appendix 7).</p> <p><u>Monthly inspections by</u></p>	<p>EM</p> <p>O&M Contractor</p> <p>DEA</p>

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
		<p>power line.</p> <p>Electrocution as a result of the power line.</p>	<p>identified by a suitably qualified ornithologist)</p> <ul style="list-style-type: none"> • <u>All strain poles must be fitted with a non-earthed T-perch on the pole (as per Appendix 18). The perch cross-arm must be at least 1.3 m wide able to carry a combined weight of 9.5kg. The orientation of the cross-arm must be perpendicular to the dominant wind direction (see Appendix 1 of Appendix 18). The fitting of all perches must be concluded within three months, starting as soon as possible.</u> • <u>All carcasses discovered must be reported to the avifaunal specialist for follow-up. The following must be recorded when a carcass is discovered:</u> <ul style="list-style-type: none"> ○ <u>The pole number;</u> ○ <u>The pole top must be photographed from several angles;</u> ○ <u>The carcass must be photographed both back and front;</u> ○ <u>The distance of the carcass from the pole must be measured;</u> ○ <u>Injuries must be noted;</u> ○ <u>If the carcass is fresh, it must be placed in a bag and stored in the on-site freezer at the substation.</u> ○ <u>Note if mitigation measures have been installed on the nearby poles</u> • <u>All recorded network trips must be followed up with a line inspection to investigate if the trip was due to a bird electrocution. If a carcass is</u> 	<p>the length of the power line route. If the monthly rate of electrocutions is reduced by 80% within 6 months after the fitting of the perches or insulation of the strain poles, no further steps need to be taken, but the monthly inspections and follow up of trips must continue indefinitely.</p> <p>Continued improvement of avifauna protection efforts.</p>		<p><u>the mitigation of raptor unfriendly poles on the 33kV network at De Aar 1 and De Aar 2 North (Appendix 18)</u></p>	<p><u>O&M contractor of the 33 kV network as per "Proposed Strategy for the mitigation of raptor unfriendly poles on the 33kV network at De Aar 1 and De Aar 2 North (Appendix 18)</u></p> <p><u>Assessment every six months by the avifaunal specialist</u></p>	

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p><u>found, the procedure outlined in the previous bullet must be followed.</u></p> <ul style="list-style-type: none"> • <u>If the monthly rate of electrocutions is not reduced by at least 80% after the introduction of a perch, Step 3 (Insulation of structures) of Appendix 18 must be implemented.</u> • <u>If the monthly rate of electrocutions is not reduced by at least 80% 6 months after insulation of all strain poles, further mitigation measures must be investigated and implemented.</u> • Further specific requirements as follows: <p>Lesser Kestrel</p> <ul style="list-style-type: none"> • Adaptive management must be implemented for the influx of Lesser Kestrel linked to locust invasions and species' presence during the summer season at the WEF area. Temporary shut-down of turbines at certain times in a day (i.e. two hours after dawn or two hours prior to sunset) may be required during periods of high bird traffic. • Counts must be conducted during the summer season at the De Aar roosting sites and any additional roosting sites in the vicinity of the WEF. <p>Verreaux's Eagle</p> <ul style="list-style-type: none"> • <u>Continue with the Argos / GPS satellite tracking Continue with the satellite tracking of the Verreaux's Eagle until the objectives of the</u> 					

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p><u>avifauna monitoring programme have been achieved.</u></p> <ul style="list-style-type: none"> • If need be, implement adaptive management for the Verreaux's Eagle based on the satellite tracking monitoring results. • If results of the initial monitoring at nest VE3 indicate any potential risky turbines, further monitoring should be implemented (if need be) at these turbines. Based on the results of this monitoring, adaptive management should be implemented to effectively reduce any risk to the fledging eagle. • Monitor the breeding activity of eagles in the area by assessing the number of pairs and breeding success (productivity and fledgling rates), including (if feasible) the identification of individual adult birds. <p>Blue crane</p> <ul style="list-style-type: none"> • Results indicate that the species does not occur regularly on the plateaus where the turbines are located, but rather on the surrounding plains below the plateaus. No specific mitigation is required at this stage, but ongoing monitoring should be performed to record any potential changes in this pattern of occurrence. <p>Waterbirds and large terrestrial species</p> <ul style="list-style-type: none"> • Waterbodies on the plateau are less frequented by waterbrds than those in the surrounding plains. This could 					

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>be due to a variety of factors such as size, availability of water, shelter and access. No specific mitigation measures are required at this stage as far as the turbines are concerned.</p> <p>General recommendations</p> <ul style="list-style-type: none"> • Prior to electrification of the wind farm, an on-site “walk-through” should be conducted by the ornithological consultant to identify the sections of power line between the turbines which require marking with Bird Flight Diverters as an anti-collision measure. • During the operational phase, regular surveys of the intra-turbine power lines will be conducted as part of the post-construction monitoring programme to assess if there are collision mortalities and any additional spans identified as high risk should be marked with Bird Flight Diverters. • In addition to that, the 132kV grid connection should also be inspected at least once every quarter to establish if there is any significant collision mortality. • The fitting of Bird Flight Diverters on the 33kV power line which crosses the narrow kloof between Smouspoort and Swartkoppeies is recommended. • Exterior lighting at night should be reduced to a minimum. Where possible, the following mitigation measures must be implemented: 					

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<ul style="list-style-type: none"> ○ Use long-wavelength (red or orange) or energy saving lights. ○ Use minimum lumen or wattage in fixtures. ○ Use directional fittings, down-lights and shielded fixtures. ○ Install sealed light fittings so that insects cannot reach the light source. ○ Control lighting with timers so that non-essential lights do not stay on all night. ○ Screen interior lighting with blinds, curtains, etc, to prevent exterior light pollution. ○ Limit mounting heights of lighting fixtures, or use footlights or bollard-level lights. ○ Warning lights should be flashing, not constant, to avoid attraction of animals. ○ Use motion-detectors on security lighting. ○ Keep maintenance periods as short as possible. 					
All activities	Protection of bats and fauna	Disturbance to or loss of fauna, including bats, and/or habitat. Direct mortalities.	<p>Objective: To minimise impacts on fauna, including bats.</p> <p>Mechanisms:</p> <p>1) Vehicle movements to be restricted to designated roadways.</p> <p>2) Adherence to reduced vehicle speeds by all vehicles moving on site.</p>	No additional disturbance to fauna populations on the WEF site. Continued improvement of fauna protection efforts.	Bat specialist O&M Contractor <u>EM</u>	EMP Operational Phase Bat Management Plan	In accordance with the Bat Operational Phase Management Plan (Appendix 8).	EM O&M Contractor DEA

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>3) Implement the Bat Operational Phase Management Plan (Appendix 8).</p> <p>Additional requirements in respect of bats:</p> <ul style="list-style-type: none"> i. Operational phase monitoring is essential to determine the actual impacts on bats and therefore the required mitigation measures and thresholds. However such an approach requires an exceptionally flexible Adaptive Management Plan to be implemented during operation. Such an Adaptive Management Plan must allow for changes to be implemented within a maximum timeframe of 3 weeks. ii. The Wind Farm must agree to follow the mitigation measures that may result from the operational monitoring and Adaptive Management Plan. iii. In accordance with the Adaptive Management Plan, appropriate mitigation measures, such as curtailment at specific environmental conditions and/or the use of acoustic bat deterrents, will have to be implemented in the case of high bat mortality. The operational monitoring study design must allow for determining the exact environmental conditions as well as the turbines that require appropriate mitigation measures. iv. Emerging technologies such as acoustic bat deterrents can be experimented with during operation, and can replace curtailment if proven 	<p>No additional disturbance to fauna populations on the WEF site.</p> <p>Continued improvement of fauna protection efforts.</p>	<p>Bat specialist</p> <p>O&M Contractor</p> <p><u>EM</u></p>	<p>EMP</p> <p>Operational Phase Bat Management Plan</p>	<p>In accordance with the Bat Operational Phase Management Plan (Appendix 8).</p>	<p>EM</p> <p>O&M Contractor</p> <p>DEA</p>

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>to be equally or more effective than curtailment.</p> <p>v. Operational monitoring will have to be designed and carried out according to the Best Practice Guidelines on Operational Monitoring that is available at the start of the facilities operation. That includes all relevant factors such as which turbines are surveyed, amount of site visits, etc.</p> <p>vi. Operational monitoring must commence once the first turbine in turning, regardless of grid connections being completed or not. However, mitigation measures that alters turbine operations can only be implemented once all testing phases on a turbine is completed.</p> <p>vii. Lighting at the turbines must be fitted with passive motion sensors and static lighting prohibited, as this will create feeding zones that will increase the probability of mortalities. Such passive motion sensors must be maintained and any faulty sensors resulting in a light to remain illuminated, must be shut down until it is repaired/replaced.</p> <p>viii. The storm water drainage plan must avoid creations of artificial ponds or wetlands in turbine zones, as these will increase insect activity and therefore bat activity in the area. This can result in turbines that were previously assessed as having a low risk to be treated as financially and biologically costly high risk turbines.</p>					

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
All activities	Protection of fauna	Disturbance to or loss of fauna and/or habitat. Direct mortalities.	<p>Objective: To minimise impacts on fauna.</p> <p>Mechanisms:</p> <ol style="list-style-type: none"> 1) Vehicle movements to be restricted to designated roadways. 2) Adherence to reduced vehicle speeds by all vehicles moving on site. 3) The EM, in addition to selected permanent staff, to attend snake handling training. Once the training is completed, the EM must apply for a fauna relocation permit from DENC. 4) The EM shall ensure that no hunting, trapping, shooting, poisoning or otherwise disturbance of any fauna takes place. 5) The feeding of wild animals is prohibited. 6) The use of pesticides is prohibited unless approved by the EM and O&M Contractor. 7) No domestic pets are permitted on site. 	<p>No additional disturbance to fauna populations on the WEF site.</p> <p>Continued improvement of fauna protection efforts.</p>	<p>EM</p> <p>O&M Contractor</p>	<p>EMP</p> <p>Operational</p>		<p>EM</p> <p>O&M Contractor</p>
All activities	Appropriate handling and management of hazardous substances and waste	Litter or contamination of the site or water through poor waste management practices.	<p>Objective: To minimise the production of waste. To ensure appropriate waste disposal. To avoid environmental harm from waste disposal.</p> <p>Mechanisms:</p> <ol style="list-style-type: none"> 1) Hazardous substances must be stored in sealed containers within a clearly demarcated area. Such containment bunds shall be impermeable, and shall have a minimum volume of 110% of the volume of substances being stored. 	<p>No complaints received regarding waste on site or indiscriminate dumping.</p> <p>Internal site audits identifying that waste segregation, recycling and re-use is taking place.</p>	O&M Contractor	EMP	Waste collection must be monitored on a regular basis.	<p>EM</p> <p>O&M Contractor</p>

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled substances to be removed. Bunded areas shall have overhead cover to prevent rain from entering the bunded area.</p> <p>2) All structures and/or components replaced during maintenance activities must be appropriately disposed of at an appropriately licenced waste disposal site or sold to a recycling merchant for recycling.</p> <p>3) Care must be taken to ensure that spillage of oils and other hazardous substances are limited during maintenance. Handling of these materials should take place within an appropriately sealed and bunded area. Should any accidental spillage take place, it will be cleared up according to specified standards for bioremediation.</p> <p>4) Used oils and chemicals will be appropriately disposed at a licensed facility.</p> <p>5) General waste will be recycled where possible or disposed of at an appropriately licensed landfill.</p> <p>6) Hazardous waste (including hydrocarbons) and general waste will be stored and disposed of separately.</p> <p>7) Disposal of waste will be in accordance with relevant legislative requirements, including the use of licensed contractors.</p>	<p>No contamination of soil or water.</p>				

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (impact management action))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
	Visual aesthetics	Impact of the proposed development on the surrounding visual aesthetics of the area	<p>Objective: To ensure that impacts on the visual aesthetics are minimised during the operational phase.</p> <p>Mechanism:</p> <ol style="list-style-type: none"> 1) During operation, the maintenance of the turbines, the internal roads, the power line servitude and other ancillary structures and infrastructure will ensure that the facility does not degrade, thus aggravating visual impact. <p>Turbines should not display brand names.</p>	Condition of the project infrastructure and roads.	O&M Contractor	EMP	As required based on annual inspections of the project	EM DEA
All Activities	Environmental management of the operational phase	Positive impacts on socio-economic environment during operation	<p>Objective: To ensure that the operation of the wind energy facility maximises positive impacts on the socio-economic environment.</p> <p>Mechanism:</p> <ol style="list-style-type: none"> 1) Train local people for operation and maintenance of facility. 2) Employ local labour for the operational phase, where possible, and particularly for day to day operations and maintenance. 	Consult annual skills and training records, employment records and proof of staff residency in the area prior to employment	O&M Contractor	EMP	During Operational Phase (full lifetime) when the need arises to employ people.	EM O&M Contractor
Activities within the buffer zones of the Eskom powerlines	Protection of Eskom infrastructure	Impact of the proposed development on the Eskom powerlines	<p>Objective: To ensure that the operation of the WEF does not result in avoidable impacts on the Eskom powerlines.</p> <p>Mechanism:</p> <ol style="list-style-type: none"> 1) Liaise with Eskom to come to an agreement regarding suitable risk mitigation measures to be put into place for operational management. 2) No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the 	Compliance with Eskom's guidelines	O&M Contractor	EMP	During Operational Phase (full lifetime)	EM O&M Contractor Eskom

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and mechanism (<u>impact management action</u>))	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			<p>vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the Contractor must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager Note: Where and electrical outage is required, at least fourteen work days are required to arrange it.</p> <p>3) Unobstructed access shall be granted to Eskom to access their servitudes.</p> <p>4) Equipment shall be regarded electrically live and therefore dangerous at all times. Safety and best practice standards with regards to all safety hazards related to electrical plant shall be employed for the projects.</p>					

5. OEMP Review

It is recommended that the effectiveness of the OEMP be reviewed on an annual basis, and possibly bi-annually in the first year of operation.

Any proposed changes are to take account of the requirements and processes of Regulation 37 of GN R982 (if applicable), prior to the implementation of such changes. Amendments or additions made to the document (with the approval of the relevant authorities if required) are to be included as annexure's, distributed to all relevant parties, and should be considered OEMP specifications to which all relevant parties are bound.

Results of environmental audits (see section below) are to inform Longyuan Mulilo De Aar Wind Power (RF) (PTY) Ltd of changes required to the OEMP documentation.

6. OEMP AUDIT

Audits of the OEMP implementation in the development should be undertaken on a regular basis. Internal audits (by the EM) should be done on a bi-annual basis with an external audit conducted by an independent consultant undertaken as specified below.

An independent environmental professional is to be employed annually for the first three years of operation, and once every three years thereafter, to perform a formal audit on the management plan, and it's implementation by the relevant parties.

Each audit is to be based on site visits by the auditor as well as a review of any records of environmental management to be kept by the EM. The audit must also determine whether the OEMP is adequately dealing with the range of environmental impacts on the site, i.e. whether the plan is still appropriate, or whether it needs to be extended. The Audit Report produced shall comply with the requirements of Regulation 34 of GN R982, as amended, and shall meet the content requirements laid out in Appendix 7 of GN R982, as amended.

The audit report is to include recommendations of changes required to the OEMP document and/or any Appendixes to the EMP that have relevance to the Operational Phase, management practices etc. to improve environmental management of the site. The results of this audit must be submitted to DEA and DENC.

Appendix 5
Decommissioning Phase EMP (DEMP)

DECOMMISSIONING PHASE: ENVIRONMENTAL MANAGEMENT PROGRAMME

It is important to note that this Decommissioning Phase Environmental Management Programme (DEMP_r) Framework has been drafted prior to the construction of the wind energy facility (WEF) and should therefore be regarded as a living document which will be changed over time in response to project evolution. However, it is important that the underlying principles and objectives on which the document is based are retained. This is in keeping with current environmental and associated legislation, that all environmental management procedures and actions should be reviewed and refined on an on-going basis.

The turbine infrastructure which will be utilized for the Longyuan Mulilo De Aar Maanhaarberg WEF is expected to have a lifespan of approximately 20 years. Equipment associated with the facility would only be decommissioned once it has reached the end of its economic life. It is most likely that decommissioning activities of the infrastructure would compromise the disassembly and replacement of the turbines with more appropriate technology / infrastructure at that time as all the infrastructure, such as roads, transmission, substations and foundations, are already established, and the energy source is a renewable one (i.e. wind). All redundant equipment that was replaced would be removed from site and sold off.

The following activities have been considered to form part of the decommissioning phase:

1. Site preparation activities will include confirming the integrity of the access to the site to accommodate the required equipment and lifting cranes, preparation of the site (e.g. lay down areas, construction platform) and the mobilization of construction equipment.
2. A large crane will be brought on site where it will be used to disassemble the turbine and tower sections. These components will be re-used, recycled and disposed of in accordance with regulatory requirements. All parts of the turbines would be considered re-usable or recyclable, except for the blades.

If the facility is decommissioned then the site will be fully rehabilitated in accordance with the requirements in terms of relevant legislation, such as the National Environmental Management Act (act 107 of 1998), as amended. The concrete bases of the turbines, transformers and transmission lines could be removed, but it may be better to leave them under the ground, as this causes fewer disturbances. If so, they would be covered with soil, stone or other indigenous material, and the site returned as closely as practicable to its original state. The turbine itself will be removed, as described above. All roads will be left on site, as it would assist the farmer in accessing his land.

A rehabilitation cost has been budgeted for decommission of the plant.

Appendix 6
Road Maintenance Plan



Mulilo

Renewable Project Development (Pty) Ltd

303c Execujet Business Centre

Tower Road

Cape Town International Airport, 7525

3 October 2014

•
5th Floor.
Imperial Terraces
Carl Cronje Drive
Tyger Waterfront
Bellville
7530

Postnet Suite 127
Private Bag x 7
Tyger Valley
7536

Tel: (021) 914 6211
Fax: (021) 914 7403

e-mail:
mail@itse.co.za

homepage:
www.itse.co.za

Reg. No.
2001/027205/07

VAT No.
4460198965

•

Offices:
Pretoria
Cape Town

Our Ref: ITS 2735.5

Attention: **Karen Versfeld**

Dear Karen

Road Maintenance Plan: Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility, Northern Cape: Smauspoort Road (DR2450)

We refer to a letter from the Northern Cape Provincial Government Department of Roads and Public Works dated 11 June 2014 with reference L2.1.3-DR2450, specifically the request for a road maintenance plan mentioned in paragraph 2.

It is expected that the construction traffic associated with the implementation of the Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility will have an impact on the Smauspoort Road surface condition during the construction period. After the construction period the expected traffic associated with the operational phase of the development will be low and the impact on Smauspoort Road during the operational phase will be insignificant.

Smauspoort Road is a public road and the Roads Authority remains responsible for general routine maintenance along the road. The road maintenance elements discussed in this plan is in addition to the routine maintenance carried out by the Roads Authority and only applies to the section of the Smauspoort Road impacted by the construction traffic associated with the De Aar 1 Wind Energy Facility.

The frequency of maintenance required will vary as the number of construction vehicles will vary during the different stages of construction. Construction activity will have a higher impact than the normal road activity and the road should be inspected on a weekly basis for structural damage.

No material investigation was done on this road to determine the existing conditions and determine the expected influence from construction activity. It is thus not possible to propose a full road maintenance plan for the construction period. This report is thus general and proposes broad maintenance principles rather than specifics.

Road Maintenance Plan

Grading

- General Monitoring of the road surface shall be done on a daily basis to identify any corrugations or general maintenance issues during the construction phase.
- To determine a proper grading plan during construction an investigation needs to be undertaken on the existing road wearing course before construction commences, taking into account topography, in-situ road conditions, rainfall, time and period of construction and construction activity program.

Dust suppressant

- If a grey water source is available the road should be watered regularly to reduce dust pollution and gravel loss.
- The ideal frequency would be once a day, but De Aar is a water scarce area and the frequency depends on the availability of a suitable water source.
- Diluted emulsions would probably be a more practical dust suppressant. Appropriate emulsions should be considered during material investigation before construction commences.

Drainage

- Abnormal load vehicles and trucks delivering heavy equipment can cause damage to storm water structures. These structures should be inspected on a weekly basis and repaired immediately to reduce road safety hazards.

Signage

- Warning signs along the road can be damaged by the trucks delivering equipment, specifically where movements are restricted at accesses. These signs should be repaired/replace as soon as possible.

Resurfacing

- Once the Wind Energy Facility construction is completed the Smauspoort Road shall be inspected with a representative from the Roads Authority. Areas shall be identified where a full ripping, grading, re-gravelling and compaction of the road is required. This work shall be done to the satisfaction of the Roads Authority.
- With regular maintenance during the construction period resurfacing should not be required, but this will be confirmed by the Roads Authority once construction is completed.

General

- Material for the purpose of re-graveling of Smauspoort Road should analysed and must be approved by the Roads Authority prior to any maintenance along Smauspoort Road.
- An approved source shall be used for any material used on the road.

We trust that the information provided in this letter is adequate. Please contact us should you need any additional information.

Regards,

A handwritten signature in black ink, appearing to be 'PA' with a flourish extending to the right.

Pieter Arangie
For ITS Engineers

Appendix 7
Avifaunal Post-Construction Monitoring
Programme

PROPOSED AVIFAUNAL POST-CONSTRUCTION MONITORING FOR LONGYUAN MULILO DE AAR 1 MAANHAARBERG WIND ENERGY FACILITY

MAIN POINTS

- Post-construction monitoring is necessary to a) confirm what the actual impacts of the WEF are, b) determine if additional mitigation is required at the WEF and c) to improve future assessments.
- Post-construction monitoring does not negate the need to first avoid, minimise and mitigate negative impacts during the project development stage.
- Post-construction monitoring can be divided into three categories: a) Habitat classification, b) quantifying bird numbers and movements (replicating baseline monitoring), and c) quantifying bird mortalities.
- Quantifying bird mortalities (collision monitoring) has three components: a) estimation of searcher efficiency and scavenger removal rates, b) mortality searches, and c) estimation of collision rates.
- The proposal contained in this document is based on the prescribed protocol in the Birdlife SA/Endangered Wildlife Trust Best Practice Guidelines for assessing and monitoring the impact of wind energy facilities on birds in southern Africa (Second revision, 2014)

1 Aim of post-construction monitoring

Avifaunal impact assessments rely on a number of assumptions. The baseline monitoring performed at the wind energy facility (WEF) represents a compromise between practicality (time and cost) and statistical rigor. Relying on imperfect data and research findings from different regions (and often different species) means that there will always be a degree of uncertainty and risk associated with assessments.

Post-construction monitoring is therefore critical to:

- i. confirm what the actual impacts of the WEF are,
- ii. determine if additional mitigation is required (adaptive management), and
- iii. improve future assessments.

Post-construction monitoring will aim to answer the following questions:

- i. How has the habitat available to birds in and around the WEF changed?
- ii. How has the number of birds and species composition changed?
- iii. How has the movements of priority species changed?
- iv. How has the WEF affected nearby priority species' breeding success?
- v. How many birds collide with the turbines and associated infrastructure? And are there any patterns to this?
- vi. Is additional mitigation necessary?

The proposed post-construction monitoring can be divided into three categories: a) Habitat classification, b) quantifying bird numbers and movements (replicating baseline monitoring) and c) quantifying bird mortalities.

2 Timing

Post-construction monitoring will be started as soon as possible after the first turbines become operational to ensure that the immediate effects of the facility on resident and passing birds are recorded, before they have time to adjust or habituate to the development. However, it should be born in mind that it is also important to obtain an understanding of the impacts of the facility as they would be over the lifespan of the facility. Over time the habitat within the WEF may change, birds may become habituated to, or learn to avoid the facility. It is therefore necessary to monitor over a longer period than just an initial one year.

3 Duration

The monitoring should run over a period of at least three years. If significant impacts are observed and additional mitigation is required, the matter will be taken up with the developer to discuss the extension of the monitoring beyond the three-year mark. In such instances the scope of monitoring could be reduced to focus only on the impacts of concern.

4 Habitat classification

Any observed changes in bird numbers and movements at a WEF may be linked to changes in the available habitat. The avian habitats available will be assessed at least once a year (at the same time every year), using the same methods during pre-construction.

5 Bird numbers and movements

In order to determine if there are any impacts relating to displacement and/or disturbance, all methods used to estimate bird numbers and movements during baseline monitoring will be applied in exactly the same way to post-construction work in order to ensure the comparability of these two data sets. This includes sample counts of small terrestrial species, counts of large terrestrial species and raptors, focal site surveys and vantage point surveys.

6 Collisions

The collision monitoring will have three components:

- a) experimental assessment of search efficiency and scavenging rates of bird carcasses on the site;
- b) regular searches in the immediate vicinity of the wind farm for collision casualties;
- c) estimation of collision rates.

6.1 Searcher efficiency and scavenger removal

The value of surveying the area for collision victims only holds if some measure of the accuracy of the survey method is developed. The probability of a carcass being detected and the rate of removal/decay of the carcass must be accounted for when estimating collision rates and when designing the monitoring protocol.

6.1.1 Searcher efficiency

In order estimate the probability of a field team member detecting a carcass, a sample of suitable bird carcasses (of similar size and colour to a variety of the priority species – e.g. Egyptian Goose *Alopochen aegyptiaca*, domestic fowl and pigeons) will be obtained and distributed randomly around the site. Alternatively dummies of similar look and size to the birds at risk of collision might also be used. The number and co-ordinates of the carcasses/dummies will be recorded. The proportion of the carcasses located in surveys will indicate the relative efficiency of the field teams. These trials will be done during the scheduled carcass searches, without the knowledge of the field teams (if need be, trail carcasses will be marked so as to distinguish them from collision victims). This procedure will be repeated opportunistically (as and when suitable bird carcasses become available).

6.1.2 Scavenger removal

In order to determine the rates at which carcasses are scavenged, or decay to the point that they are no longer obvious to the field workers, fresh carcasses of similar size and colour to a variety of the priority species will be placed randomly around the site and the location of each carcass recorded. The total number of carcasses set out will be determined at a later stage, but not so plentiful as to saturate the food-supply for the local scavengers. These sites will be checked every second day for a period of 15 days to record any changes in the presence, location and condition of each carcass. This will provide an indication of scavenge rate (average persistence time) that will inform the extent to which estimates of collision frequency should be adjusted to account for scavenge rate. Scavenger numbers and activity in the area may vary seasonally so, therefore, scavenge and decomposition rates will be measured at least twice over a monitoring year, once in winter and once in summer. It is anticipated that the scavenger removal exercise will be done twice a year.

6.2 Collision victim surveys

6.2.1 Area to be searched

Search plot size will be determined by the wind turbine technology and the maximum size of the potential collision victims at the site, based on the results of the pre-construction monitoring. Searches will either be symmetrical using a square plot, or a circular plot, depending on what is practical. The transects will be parallel and spaced equally apart yielding a standardised search width on either side of the transect line. In tandem with surveys of the wind farm for collision casualties, all guyed masts and sample sections of any new lengths of power line associated with the development will also be regularly surveyed for collision and/or electrocution victims.

6.2.2 Turbines to be searched and frequency of searches

A sample of no less than 50% of turbines will be searched, once a week, or all turbines will be searched twice a month, depending on what is practical, and bearing in mind the requirements of the bat search protocol, which will be combined with the bird searches (see 6.2.3 below). This should be seen as a compromise between thoroughness and what is practically achievable.

6.2.3 Aligning search protocols

There is no reason that the field work would need to be done separately for both birds and bats, but the involvement of experts from both fields would be required to oversee the work and interpret the results. A challenge in this regard is different monitoring protocols. Bats are normally small and the carcasses may not persist as long as those of birds. As a result bat fatality monitoring requires more frequent surveys.

6.2.4 Recording and reporting mortalities

All suspected collision incidents will be comprehensively documented, detailing the following variables:

- Observer name
- Project name
- Date
- Time
- Species
- Number adults/juveniles
- GPS location/s
- Condition of remains
- Nearest turbine number
- Distance to nearest turbine
- Compass bearing to nearest turbine
- Habitat type/mix of habitats
- Plot on map
- Photograph of the collision site as it was located

6.2.5 Carcass management

All physical evidence will be collected, bagged and carefully labelled, and refrigerated or frozen to await further examination and to confirm the cause of death. Handling of carcasses will be limited, particularly if these are to be used in scavenger removal trails. The provincial conservation authority will be consulted to confirm, if any permits are required to keep and transport carcasses.

If any injured birds are recovered, each will be contained in a suitably-sized cardboard box. The local conservation authority will be notified and requested to transport casualties to the nearest reputable veterinary clinic or wild animal/bird rehabilitation centre. In such cases, the immediate

area of the recovery will be searched for evidence of impact with the turbine blades, and any such evidence will be fully documented (as above), including outcome and possible post-mortem.

6.2.6 *Ad hoc recording of collisions*

Maintenance and wind farm staff will be trained on the topic of bird interactions with wind farms and will be required to report bird mortalities through a formalised reporting system. This will be in addition to post-construction monitoring and will not replace formal fatality searches. Operational staff will be instructed to record the fatality in the prescribed manner and to remove the carcass for storage. Instead the position of the carcass will be recorded with GPS and a photographic record taken for later identification.

6.2.7 *Estimation of collision rates*

Observed mortality rates need to be adjusted to account for searcher efficiency, scavenger removal and the probability that carcasses were located outside the search area. There have been many different formulas proposed to estimate mortality rates. The available methodologies will be investigated and an appropriate method will be applied.

7 **Reporting**

A post-construction monitoring report will be completed at the end of each year of post-construction monitoring. As a minimum, the report will attempt to answer the following questions:

- i. How has the habitat available to birds in and around the WEF changed?
- ii. How has the number birds and species composition changed?
- iii. How has the movements of priority species changed?
- iv. How has the WEF affected priority species' breeding success?
- v. What are the likely drivers of any changes observed?
- vi. How many, and which species of birds collided with the turbines, and are there any patterns to this?
- vii. What is the significance of any impacts observed?
- viii. Is additional monitoring and mitigation necessary?

The post-construction monitoring report will include a comparison of the predicted and observed impacts, as this may provide useful insights for future impact assessments. If additional mitigation was implemented on the basis of previous years post-construction monitoring, the report will include an assessment of the effectiveness of these measures. The need for further post-construction monitoring and the scope of any further work will also be reviewed.

Appendix 8
Operational Phase Bat Monitoring
Programme

Methodology proposal for a 24 month operational phase (post – construction) bat impact/mortality monitoring assessment

- For the Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility (WEF), Northern Cape

1. Introduction

Operational phase monitoring and research programs across North America and Europe have identified bats to be vulnerable to mortality due to wind turbines. Bats are particularly vulnerable to non-natural causes of mortality as they are long-lived animals with low reproductive fecundity. Additionally, there is relatively little scientific knowledge about bat populations and migration routes. It is recommended that a minimum of two year operational monitoring be undertaken as soon as turbines are functional, with auditing continuing throughout the lifespan of the WEF.

The primary objectives of the operational phase monitoring programme are to:

- Determine the bat fatality rates for the WEF
- Determine the fatality rates for species of concern
- Determine the fatality rates for migratory and resident bat species
- Study the relation of bat fatalities within all habitats, geology and vegetation types found in turbine areas
- Compare the bat fatality rates with those from wind farms in similar habitat types where possible
- Determine the relationship between bat activity and bat fatality
- Understand the relationship between bat fatality and weather conditions
- Study the temporal distribution of bat fatalities across the night and seasons
- Determine whether mitigation measures are necessary to reduce bat fatality rates, and if necessary recommend detailed mitigation measures

2. Methodology

Operational monitoring methodology is divided into two components, namely acoustic monitoring and carcass searches. **On conclusion of the first year an adapted methodology will be outlined for the second year of monitoring.**

2.1 Acoustic monitoring

Acoustics detectors and ultrasonic microphones will be used to monitor bat activity. They will be installed on the meteorological mast and/or a sub-sample of turbine nacelles to monitor activity in the rotor-swept path of high risk and select turbines.

2.2 Carcass searches

Carcass searches will be undertaken to determine bat fatality rates. This component of the methodology will be combined with that of the carcass searches for the bird monitoring programme.

Locals will be trained in proper search techniques to carry out the carcass searches and to record and collect all carcasses located. Searches will begin as early in the morning as possible to reduce carcass removal by scavengers. The order in which turbines are searched will ideally be randomly selected for each day to reduce carcass removal by predators from specific turbines before they can be searched.

All necessary information will be recorded when a carcass is found. The carcass will then be bagged and labelled and kept refrigerated for species identification and to determine the cause of death by the specialist, which will visit the site three times for the first year (to be adapted as needed for the second year). Fatality monitoring will be carried out over all seasons of the year.

The necessary searcher efficiency and scavenger removal trials will be carried out at least once per season to calculate field bias and error estimation.

3. Wind turbine mitigation

Data collected throughout the monitoring programme will be used to inform and direct mitigation if the WEF or specific turbines is found to be causing significant bat mortality. If

mitigations are implemented, monitoring the effectiveness of the applied techniques will be necessary to evaluate and refine the success and economic efficiency of the mitigation.

4. Deliverables

- Two monitoring reports will be submitted annually for the first year, on conclusion of the first year an adapted reporting and methodology schedule will be outlined for the second year of monitoring. Reports will include descriptions of the field protocols and sampling methods. Raw data will be included in the reports as appendices, and methods for data analysis shall be transparent.
- A contingency plan will be compiled which informs immediate actions to be taken in the case of a significant mortality event, or if mitigation measures fail. A contingency plan will consist of additional mitigation measures to be implemented in the event that significant negative impacts are observed from a single mortality survey.
- An adaptive management approach to the operational monitoring programme.

The study will be lead, overseen and all reports reviewed and signed off by Werner Marais and Monika Moir.

All efforts and compromises possible will be made to keep costs to a minimum without affecting the scientific robustness of the assessment or ability to reach the objectives of the assessment. The methodology of this assessment will comply with all current developments pertaining to the draft South African Good Practice Guidelines for Post-Construction Monitoring for Bats at Wind Energy Facilities, which will be a mandatory requirement for all specialists.