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30 December 2022

TO WHOM IT MAY CONCERN,

Dear Sir/Madam

MULILO DE AAR 2 SOUTH WIND ENERGY FACILITY: PART 1 AMENDMENT OF ENVIRONMENTAL AUTHORISATION: AQUATIC BIODIVERSITY IMPACT ASSESSMENT COMMENT

Background

Mulilo De Aar 2 South (Pty) Ltd wishes to amend its existing Environmental Authorisation (EA) for the Mulilo De Aar 2 South Wind Energy Facility (WEF) near De Aar (DFFE REFERENCE NUMBER: 12/12/20/2463/1). The original EA for the project authorised 103 wind turbines generator (WTG) with a potential capacity of 155 – 258MW and associated infrastructure. Various amendments to the EA have been granted, including a name change of the holder of the EA, EA validity period extensions, EA condition amendments, as well as amendments to the project description and turbine specifications. The current authorised project includes 25 – 61 turbines and associated infrastructure.
The following amendments are now proposed:

- Change from the authorised number of turbines from "25 - 61" to "up to 26"
- Change the 22 kV internal lines to an Internal 33kV reticulation
- Change the foundation dimension to 26 WTG foundations (up to maximum 24m diameter maximum at lowest point, and up to 12m diameter at surface)
- Change the authorised hardstand dimensions to 26 WTG hardstands: Complex geometry (with approximate footprint up to 0.47 ha per WTG)
- Inclusion of the words "up to" in front of the currently authorised turbine specifications for hub height and rotor diameter to allow for smaller turbines to be installed if required due to suppliers.
- Increase the width of the internal new and upgraded roads from 4m to 6m wide
- Remove the MW designation per turbine (generation capacity per turbine)
- Update the co-ordinates of the IPP substation, Control and O&M Buildings (to align with the location in the Final Layout Plan, which is subject to a separate approval process that is underway)
- Extend the validity period of the EA for a period of 2 years, i.e. to
  1 March 2025
- Add Portion 7 of Farm Vendussie Kuil No. 165 into the EA (as a portion of a proposed road for the project crosses the property). The property was assessed as part of the original freshwater assessment study for the project.

- Include Activity 15 of GN R. 545 (Listing Notice 2) into the EA. The physical alteration of more than 20ha of the land was assessed in detail as part of the 2012 EIA process and subsequent Part 2 EA amendment process in 2015 for the project, however, this particular listed activity was erroneously omitted from the Application.

The proposed amendments are indicated to not result in an increase in the overall development footprint from the authorised WEF.

This aquatic biodiversity impact assessment comment is intended to respond to the following aspects:

- The implications of the proposed amendments, if any, in terms of the potential aquatic ecosystem impacts;
- Since the request is to extend the validity period beyond 10 years from when the original EA was issued, confirm whether or not the baseline environment has changed significantly since the original assessments
- Provide a statement as to whether or not the proposed amendments will result in an increased level or change in the nature of the impact, which was initially assessed and considered when application was made for the environmental authorisation and subsequent Part 2 EA amendment in 2015 - 2016.
- Describe the status (baseline) of the environment that was assessed during the initial assessment.
- Confirm the current status of the assessed environment
- A description and assessment of any changes to the environment that has occurred since the initial EA was issued, if any;
- Site sensitivity verification – Undertake and report on site sensitivity verification (see DFFE Screening Tool Report).
- Indicate if the impact rating as provided in the initial assessment remains valid; if the mitigation measures provided in the initial assessment are still applicable; or if there are any new mitigation measures which need to be included into the EA, should the request to extend the commencement period be granted by the Department;
- An indication if there are any new assessments and/or guidelines which are now relevant to the authorised development which were not undertaken as part of the initial assessment, must be taken into consideration and addressed in the report (or indicate if such new assessments/ guidelines were already addressed during your recent studies for the EMPr and Layout Plan finalisation process in 2022);
- A description and an assessment of the surrounding environment, in relation to new developments or changes in land use which might impact on the authorised project, the assessment must consider the following:
    - Similar developments within a 30km radius;
    - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.
    - Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar

developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
    - The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
    - A cumulative impact environmental statement on whether the proposed development must proceed.
- The study must conclude the following:
    - Has the baseline status of the receiving environment changed since the original EIA in 2012?
    - Is the initial impact rating undertaken during the initial assessment still valid?
    - Are the mitigation measures provided in the initial assessment (or subsequent updated assessments) still applicable?
    - Are there any new mitigation measures that should be added to the EA/ EMPr if the DFFE decides to approve the amendments?
    - Describe any update/new mitigations (or refer to them in the appropriate walkthrough/EMPr update report), where relevant.
    - Are the proposed amendments, including proposed extension of the validity period, acceptable (relative to your area of expertise)?

Summary of findings of Freshwater Assessment for the project, dated February 2012, and the Amended Project Description Assessment, dated July 2015

The main aquatic features within the study area are the Brak and Hondeblaf Rivers, seasonal tributaries within the Orange River System (Lower Orange WMA). The Brak River (Quaternary catchment D62B) flows in a north westerly direction along the southern boundary of the study area with a number of its tributaries crossing the site as they flow in a southerly direction. The Brak River joins the Orange River east of Prieska. The Hondeblaf River (Quaternary catchment D31B) originates on the plateau and flows in a north to north easterly direction towards Philipstown before joining the Orange River near Vanderkloof.

Both the Brak and Hondeblaf Rivers have predominantly sandy/silty substrate with outcrops of bedrock. The rivers drain shrubland vegetation in an area with a very low rainfall. As a result, the water flowing in these rivers are saline, turbid and seasonally flowing. These rivers have been moderately modified by the surrounding farming activities. The Upper Brak Rivers is considered to be of a moderate to low Ecological Importance and Sensitivity while the Upper Hondeblaf River is scored as high due to the presence of juvenile Vaal-Orange Largemouth Yellowfish Labeobarbus kimbeleyensis in the lower reaches of the river.

Most of the smaller tributaries within the study area are ephemeral and are discernible only as slightly shallow depressions with no clear associated vegetation. They tend to be in a largely natural to moderately modified ecological state. Small, shallow instream dams have been constructed within many of these drainage channels. Associated with many of the streams and the small dams are small wetland areas or pans that are in a highly modified state and are of a low ecological significance. The only significant series of pans within the study area is located at Slingershoek and have been

identified as FEPA wetlands. The layout plan for the WEF has been altered within this area to ensure that no turbines will be placed in close proximity to the pans.

Provided that the following recommended mitigation measures are implemented the significance of the impact is expected very low:

- *Construction activities should as far as possible be limited to the identified sites for the proposed wind energy facilities and the structures. A buffer of at least 30m (from centre of stream for smaller drainage lines and from top of bank for larger tributaries) should be maintained adjacent to the identified freshwater features, as well as from the edge of the pans and wetland areas, for any of the hard structures (i.e. buildings that require foundations and excluding power lines, fences, drains, storm water infrastructure, or roads) developed within the site. It is important that any of the cleared areas that are not hardened surfaces are rehabilitated after construction is completed by revegetating the areas disturbed by the construction activities with suitable indigenous plants. Invasive alien plants that currently exist within the immediate area of the construction activities should also be removed and the sites monitored for regrowth on an ongoing basis.*
- *To reduce the risk of erosion, the locality of the turbines and structures should preferably not be on any steep slopes or within the wide wash areas on the plains. Run-off over the exposed areas should be mitigated to reduce the rate and volume of run-off and prevent erosion occurring on the site and within the freshwater features and drainage lines. Contaminated runoff from the construction site(s) should be prevented from entering the rivers/streams. All materials on the construction sites should be properly stored and contained. Disposal of waste from the sites should also be properly managed. Construction workers should be given ablution facilities at the construction sites that are located at least 100m away from the river system and regularly serviced. These measures should be addressed, implemented and monitored in terms of the EMP for the construction phase*
- *The existing road infrastructure should be utilised as far as possible to minimise the overall disturbance created by the proposed project. Where new roads need to be constructed the existing road infrastructure should be rationalised and any unnecessary roads decommissioned and rehabilitated to reduce the disturbance of the area and within the stream beds. For new access roads to the turbines, these should rather be along the ridges of the hills than in the drainage/stream beds. Where access routes need to be constructed through streams/drainage lines, the disturbance of the channel should be limited. Wetland and pan areas should be avoided and any road adjacent to a wetland feature should also remain outside of the 30m buffer zone as far as possible. All crossings over drainage channels or stream beds should be such that the flow within the drainage channel is not impeded. Road infrastructure, transmission lines and cable alignments should coincide as much as possible to minimise the impact.*
- *Operational activities should as far as possible be limited to the delineated site for the proposed development and the identified infrastructure routes. Invasive alien plant growth should be monitored on an ongoing basis to ensure that these disturbed areas do not become infested with invasive alien plants.*
- *Storm water run-off infrastructure must be maintained to mitigate both the flow and water quality impacts of any storm water leaving the wind energy facilities site. Should any erosion features develop, they should be stabilised as soon as possible.*

- *Water supply, sanitation services as well as solid waste management should preferably be provided by an off-site service provider.*
- *Any disturbed areas should be rehabilitated and monitored to ensure that these areas do not become subject to erosion or invasive alien plant growth.*

A water use authorisation application may need to be submitted to the Department of Water Affairs Northern Cape Regional Office for approval of the water use aspects of the proposed activities, in particular a water use authorisation will likely be required the development activities.

Specialist review of the proposed amendments

I, Antonia Belcher that undertook the initial aquatic biodiversity assessment for the proposed project, confirm that the proposed amendments and changes to the layout for Mulilo De Aar 2 South WEF do not alter the findings of the freshwater impact assessment dated February 2012 or the amendment assessment of July 2015.

Comment on any changes to the aquatic ecosystems within the site

The proposed project is located on the eastern plateau near De Aar. Land use on the plateau is relatively undeveloped and only utilised for grazing of sheep, cattle, goats, ostriches or game such as springbok. This land use has not changed since the initial assessment, apart from the development of the Mulilo De Aar 2 North WEF that initially was considered together with this proposed project and has since been approved and developed. This project area lies to the north of the proposed project and has not altered any of the freshwater features associated with the project. It can thus be said that no change in the ecological condition (largely natural to moderately modified) or the ecological importance and sensitivity (Upper Brak River: moderate/low; Upper Hondeblaf River: high; minor streams: low) of these aquatic features has taken place since the initial assessment.

The only significant series of pans within the study area is located at Slingershoek and have been identified as FEPA wetlands. The layout plan for the WEF has been altered within this area to ensure that no turbines will be placed in close proximity to the pans.

The ecological integrity of the river and wetland habitat at the site appears to be essentially unchanged from the 2012 and 2015 assessments.

Comment on Site Sensitivity Verification

The Screening Tool has indicated that the wider area surrounding the site is mapped as being of very high Aquatic Biodiversity Combined Sensitivity. The very high sensitivity is linked to the Strategic Water Source Area for groundwater that has been identified in the wider area as well as the larger Brak River FEPA Sub-catchment. The pans within the study area at Slingershoek have been identified as FEPA wetlands.

The proposed project is unlikely to impact the Strategic Water Source Area (SWSA) and the ecological integrity of the FEPA River. It is thus felt that the very high Aquatic Biodiversity Combined Sensitivity does not apply to the wider area for proposed activities. As stated in the original freshwater

assessment, the Upper Brak River system is considered to be of a moderate to low Ecological Importance and Sensitivity, while the Upper Hondeblaf River is scored as high due to the presence of juvenile Vaal-Orange Largemouth Yellowfish *Labeobarbus kimbeleyensis* in the lower reaches of the river. The very high Aquatic Biodiversity Combined Sensitivity should thus only apply to the upper Honderblaf River and to its associated wetland areas. These aquatic features in the study area have been buffered and are avoided or the impact on these features mitigated to being of low significance.

General comment on impact significance

The proposed changes will result in a change from a maximum of up to 61 WTG to a maximum of 26 WTG being applied for. The proposed turbine foundation amendments would result in an increase of the turbine tower-base diameter from 20m to 24m. The construction hardstand pad would also need to increase. Refinements to the WEF layout have been made that take the freshwater constraints mapping (delineated features and the recommended buffers) into account. No WTG is located in close proximity to any of the delineated freshwater features. The proposed increase to the footprints is offset by the reduced number of WTG but is also of little significance in terms of aquatic ecosystem impacts, given that the locations are away from any aquatic feature.

The road widths will increase from 4m to 6m. There are approximately 15 road crossings over minor watercourses within the site. The proposed road width increase would be of low significance and is properly mitigated as recommended.

The proposed change to the internal reticulation from 22kV to 33kV will not have any potential impact on the aquatic ecosystems., nor will the request to remove the MW designation per turbine.

No significant changes to the baseline environment have occurred since the previous assessments, and the potential aquatic impacts are well understood (particularly given the recent specialist aquatic inputs for the finalisation of the EMPr and Layout Plan process for the project in 2022). The proposed extension of the validity period of the EA will not result in an increased level or change in the nature of aquatic impacts, and is acceptable.

The assessed impact ratings (Low to very low with mitigation) are thus not likely to alter as a result of any of the proposed amendments.

Comment on Cumulative Impacts

Land use in the area currently consists of cultivation and livestock farming, with most of the natural vegetation having already been significantly transformed. Current land and water use impacts on the watercourses and wetlands are thus also significant such that the aquatic features are all mostly in a largely to seriously modified ecological condition.

There are several renewable energy projects within a 30km radius of the proposed WEF. Figure 1 shows the renewable energy projects within a 30 km radius of the site. The projects primarily occur in the Brak River Catchment. Cumulative impacts on this river system, given that they are the same catchment, are possible if they are not adequately mitigated.

Most of the projects to the west of the site are solar PV projects while the projected to the east are WEF projects. The nature of the proposed WEF projects and their associated infrastructure however allows them to have minimal impact on the surface water features since the turbines can be placed far enough away from the freshwater features to not impact them. This is already the case with the approved Mulilo De Aar 2 South Wind Energy Facility.

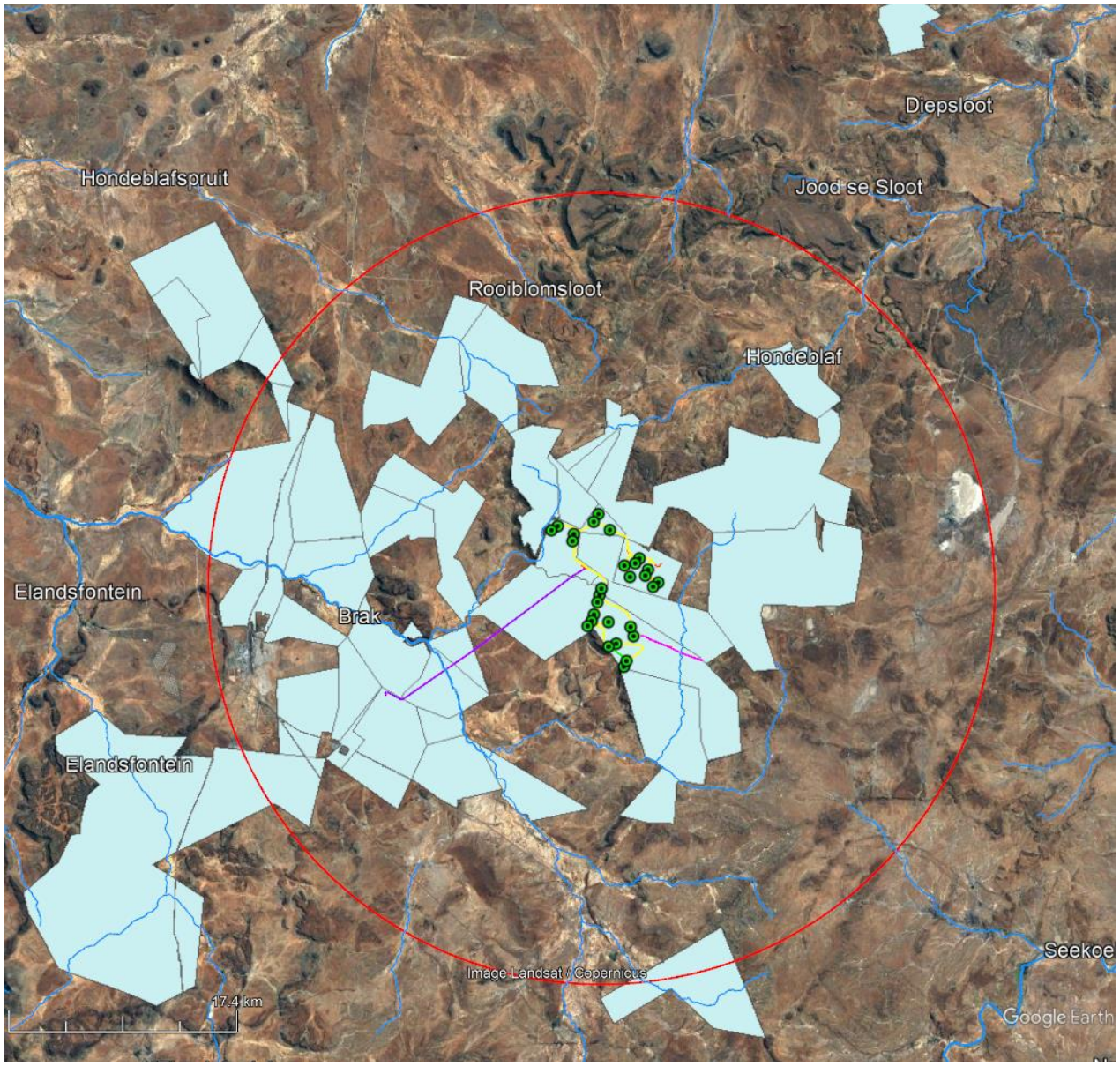

Figure 1. Google Earth image showing the renewable energy projects and river systems within 30 km of the proposed project

The largest potential impact of WEF projects is a result of the associated infrastructure, which can be mitigated such that its impact on the aquatic ecosystems will be of a low significance. For the project concerned, the road layout makes use of existing roads, where possible, which further reduces the impacts on the aquatic ecosystems and provides an opportunity to improve the current road crossings by providing better erosion protection measures and through the construction of low water crossings or properly sized box culverts instead of pipe culverts that are prone to blocking. The impact significance rating for cumulative impacts was assessed as Low (negative) prior to mitigation, and Very

Low (negative) post mitigation, in the original freshwater impact assessment (2012). The significance rating for cumulative impacts would remain unchanged with the proposed amendments. ***One could thus expect that the cumulative impact of the proposed project would not be significant provided mitigation measures are implemented.***

General comment on additional mitigation measures

The mitigation measures stated in the freshwater impact study dated January 2012 and repeated in the assessment of July 2015 (and listed in this letter) remain the same, with **no additional mitigation measures being required**.

Conclusions and Recommendations

The ecological integrity of the river and wetland habitat at the site appears to be essentially unchanged from the 2012 and 2015 assessments, i.e. the baseline status of the aquatic environment has not changed since the original assessment.

The proposed amendments do not affect the significance of any of the impacts identified in the freshwater impact assessment dated February 2012, nor the addendum letter of July 2015. Accordingly, the proposed amendments will not increase the level or change the nature of the impacts. **There are no reasons from an aquatic ecosystem perspective that the amendments should not be authorised according to the requested amendments**.

Please feel free to contact me should you have any questions regarding the above.

Kind regards

Toni Belcher
Aquatic Ecologist

APPENDIX A: DECLARATION OF INDEPENDENCE BY THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS

I, A**ntonia Belcher,** as the appointed specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- in terms of the general requirement to be independent:
    - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
    - ~~am not independent, but another specialist that meets the general requirements set out in Regulation 13 of GN No. 326 have been appointed to review my work (Note: a declaration by the review specialist must be submitted);~~
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the Applicant, the Department and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application;
- have ensured/will ensure that information containing all relevant facts in respect of the application was/will be distributed or was/will be made available to interested and affected parties and the public and that participation was/will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the Department in respect of the application; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations, 2014 (as amended).

Date: 23 November 2022

Name of company: -

Signature of the specialists: 

APPENDIX B: BACKGROUND AND QUALIFICATIONS OF SPECIALIST

Name: Antonia Belcher

Contact details: 53 Dummer St, Somerset West, 7130; Phone: 082 883 8055;
Email: toni@bluescience.co.za

Profession: Aquatic Scientist (P. Sci. Nat. 400040/10)

Fields of Expertise: Specialist in freshwater assessments, monitoring and reporting

Years in Profession: 30+ years

Toni Belcher worked for the Department of Water Affairs and Forestry for more than 17 years. During this period she worked for the Directorate Water Quality Management, the Institute for Water Quality Studies and the Western Cape Regional Office and has built up a wide skills base on water resource management and water resource quality for rivers, estuaries and the coastal marine environment. Since leaving the Department in 2007, she has been working in her private capacity and was co-owner of BlueScience (Pty) Ltd, working in the field of water resource management and has been involved in more than 500 aquatic ecosystem assessments for environmental impact assessment and water use authorisation purposes. In 2006 she was awarded a Woman in Water award for Environmental Education and was a runner up for the Woman in Water prize for Water Research.

Professional Qualifications:

1984 Matriculation Lawson Brown High School
1987 B.Sc. – Mathematics, Applied Mathematics University of Port Elizabeth
1989 B.Sc. (Hons) – Oceanography University of Port Elizabeth
1998 M.Sc. – Environmental Management (cum laude) Potchefstroom University

Key Skills: Areas of specialisation: Aquatic ecosystem assessments, Monitoring and evaluation of water resources, Water resource legislation and authorisations, River classification and Resource Quality Objectives, River Reserve determination and implementation, Water Quality Assessments, Biomonitoring, River and Wetland Rehabilitation Plans, Catchment management, River maintenance management, Water education.

Summary of Experience:

1987 – 1988	Part-time field researcher, Department of Oceanography, University of Port Elizabeth
1989 – 1990	Mathematics tutor and administrator, Master Maths, Randburg and Braamfontein Colleges, Johannesburg
1991 – 1995	Water Pollution Control Officer, Water Quality Management, Department of Water Affairs, Pretoria
1995 – 1999	Hydrologist and Assistant Director, Institute for Water Quality Studies, Department of Water Affairs and Forestry, Pretoria
1999 – 2007	Assistant and Deputy Director, Water Resource Protection, Western Cape Regional Office, Department of Water Affairs, Cape Town
2007 – 2012	Self-employed – Aquatic Specialist
2013 – 2020	Senior Aquatic Specialist and part-owner, BlueScience
2020 – present	Self-employed– Aquatic Specialist