

SITE SENSITIVITY VERIFICATION REPORT FOR THE ABERDEEN WIND FACILITY 1

Aberdeen Wind Facility 1 (Pty) Ltd, a Special Purpose Vehicle (SPV), proposes the development of a commercial wind energy facility and associated infrastructure, on a site located approximately 20km west of the town of Aberdeen in the Eastern Cape Province. The site is located within the Dr Beyers Naude Local Municipality in the greater Sarah Baartman District Municipality. The entire extent of the site falls within the Beaufort West Renewable Energy Development Zone (REDZ)¹. The facility is known as Aberdeen Wind Facility

The project is planned as part of a larger cluster of renewable energy projects, which includes two adjacent wind energy facilities with a capacity up to 240MW each (Aberdeen Wind Facility 2 and Aberdeen Wind Facility 3). The proposed wind energy facility is set to inject up to 240MW into the national grid. The wind energy facility will connect to the grid via a grid connection solution consisting of an Eskom switching substation and a power line, which will be subject to a separate application of Environmental Authorisation.

A project site consisting of four affected properties (refer to **Figure 1**), has been identified as the preferred area for the development of the turbines and the associated infrastructure of the Aberdeen Wind Facility 1. The project site consists of four (4) affected properties:

- » Farm Koppieskraal 157
- » Remainder of the Farm Doorn Poort 93
- » Portion 1 of Farm Doorn Poort 93
- » Farm Kraanvogel Kuil 155

A main access road up to 2.5km in length and up to 10m in width will provide access to the facility, and ultimately to all three planned wind farm sites (that is, a shared access route). The access to the facility/ies will be via an existing (unnamed) gravel road off the R61 between Beaufort West and Aberdeen. The gravel road is well established (~10m wide excluding road reserve), however it's likely portions of this road will require upgrading to accommodate the movement of heavy vehicles. This road traverses Portion 4 of Farm Sambokdoorns 92.

The project site has an extent of ~19 800ha, which is considered sufficient in extent (allowing sufficient space to avoid any major environmental sensitivities) and suitable from a technical perspective for the development of up to 41 wind turbines with a contracted capacity of up to 240MW. A development area² of approximately 9180 ha has been identified within the project site and assessed as part of the BA process. The much smaller development footprint³ will be sited within the development area, with an estimated disturbance area of up to 109.5ha of the development area

¹ The REDZ are zones identified by the Department of Environment, Forestry and Fisheries (DEFF) as geographical areas of strategic importance for the development of large-scale solar PV and wind energy development activities and which have been earmarked for the development of renewable energy facilities within South Africa as per GNR114 of February 2018.

² The development area is that identified area where the 240MW wind farm is planned to be located. This area has been selected as a practicable option for the facility, considering technical preference and constraints. The development area is ~9180ha in extent.

³ The development footprint is the defined area (located within the development area) where the wind farm and other associated infrastructure for the facility is planned to be constructed. This is the actual footprint of the facility, and the area which would be disturbed.

SENSITIVITY VERIFICATION METHODOLOGY:

The site sensitivity verification report was compiled by the EAP and is based on specialist desktop information and field work undertaken as part of the BA process. This report forms part of the Basic Assessment (BA) process being undertaken for the proposed Aberdeen Wind Energy Facility and associated infrastructure.

SITE SENSITIVITY VERIFICATION:

The table below and reference to specialist assessments serve to:

- » Verify land use and sensitivities identified in the screening report; and
- » Confirm / contest the need for the various specialist inputs called for in terms of the screening tool report.

Environmental Theme/Specialist Assessment	Sensitivity Rating and Specialist Input Identified in Terms of the DFFE Screening Tool	Verification of Site-Specific Sensitivity and Motivation of the Need for Specialist Investigation
Agricultural Impact Assessment	<p>Screening tool: High Sensitivity</p> <p>Required an agricultural impact assessment (in accordance with the protocol prescribed in GNR 320).</p> <p>Verified Sensitivity by Specialist: Low</p>	<p>The project site can be classified as having areas with Low, Medium and High Sensitivity. Most of the infrastructure components are located well within areas with Low Sensitivity, with only the eastern part having a small areas which falls in a Medium sensitivity area. High sensitivity areas are found at the far south-eastern boundary of the development area. Through the consistent implementation of the recommended mitigation measures, most of the impacts can be reduced to low significance. It is the specialist's opinion that this project be considered favourably, permitting that the mitigation measures are followed to prevent soil erosion and soil pollution and to minimize impacts on the veld quality of the farm portion that will be affected.</p> <p>A Soils and Agricultural Potential Impact Assessment is included as Appendix L of the Basic Assessment Report.</p>
Landscape/Visual Impact Assessment Flicker and Shadow Assessment	<p>Screening tool: Very High Sensitivity</p> <p>(General Assessment Protocols)</p> <p>Verified Sensitivity by Specialist: High</p>	<p>Based on the Site Sensitivity Verification assessment, it was found that the sensitivity of the visual environment for the proposed development is confirmed to be high due to:</p> <ul style="list-style-type: none"> » The avoidance of placement of turbines on any steep slopes, mountain tops or ridges » Location of a homestead within the 1.2km shadow flicker buffer » Low occurrence of homesteads within 5km » Low VAC of the receiving environment » The placement of the development within the Beaufort REDZ » Scenic R61 arterial road located more than 1km but within 2.5km » Limited existing built infrastructure within the study area

		<p>Overall, the significance of the visual impacts associated with the proposed Aberdeen Wind Facility 1 is expected to be high as a result of the generally undeveloped character of the landscape. The facility would be visible within an area that contains certain sensitive visual receptors who could consider visual exposure to this type of infrastructure to be intrusive. Such visual receptors include people travelling along the national, arterial, and secondary roads, as well as residents of rural homesteads and tourists passing through or holidaying in the region.</p> <p>A Visual Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included in this BA Report as Appendix I.</p>
<p>Archaeological and Cultural Heritage Impact Assessment</p>	<p>Screening tool: High Sensitivity</p> <p>Verified Sensitivity by Specialist: Very High</p>	<p>According to the DFFE Screening Tool analysis, the development area has High levels of sensitivity for impacts to archaeological and cultural heritage resources. The results of this assessment in terms of site sensitivity are summarised below:</p> <ul style="list-style-type: none"> » The cultural value of the pristine Karoo Landscape is very high (Very High) » Some significant archaeological resources were identified within the development area (High) » No highly significant palaeontological resources were identified within the development area, however the geology underlying the development area is very sensitive for impacts to significant fossils (Very High) <p>As per the findings of this assessment, and its supporting documentation, the outcome of the sensitivity verification confirms the results of the DFFE Screening Tool for Palaeontology and disputes the results of the screening tool for archaeology and cultural heritage - this should be considered to be Very High.</p> <p>A Heritage Impact Assessment (which covers both archaeological and cultural aspects of the development area and development footprint) has been undertaken for the Aberdeen Wind Facility 1 and is included in this Basic Assessment Report as Appendix H. The HIA complies with the requirements of the NHRA.</p>
<p>Paleontology Impact Assessment</p>	<p>Screening tool: Very High Sensitivity</p> <p>Verified Sensitivity by Specialist: Low</p>	<p>Given the rarity of significant vertebrate and other fossil finds, the overall palaeosensitivity of the Aberdeen WEF Cluster project area is assessed as LOW. The provisional Medium to Very High Palaeosensitivity mapped here by the DFFE Screening Tool is accordingly contested. The potential for occasional fossil vertebrate sites of Very High palaeosensitivity cannot be entirely excluded, however. The distribution of such sites is largely unpredictable, and they are best mitigated through a Chance Fossil Finds protocol.</p> <p>The impact significance of the proposed Aberdeen Wind Energy Facility Cluster is assessed as LOW since fossils of</p>

		<p>significant scientific and conservation value are so rare here. None of the recorded fossil sites lies directly within the provisional project footprint. The project is not fatally flawed and there are no objections on palaeontological heritage grounds to its authorization. This assessment applies equally to all infrastructure components and layout options currently under consideration.</p> <p>A Heritage Impact Assessment (which covers the paleontological aspects of the development area and development footprint) has been undertaken for the Aberdeen Wind Facility 1 and is included in this Basic Assessment Report as Appendix H. The HIA complies with the requirements of the NHRA.</p>
<p>Terrestrial Biodiversity Impact Assessment</p>	<p>Screening tool: Very high Sensitivity</p> <p>Required a terrestrial biodiversity impact assessment (Terrestrial Biodiversity Assessment Protocols)</p> <p>Verified Sensitivity by Specialist: Very high</p>	<p>The overall combined Terrestrial Biodiversity theme indicates that the site consists entirely of Very High sensitivity areas due to the presence of ESAs and FEPA Sub catchments. Since these are anthropogenic conservation planning-based features, it is not really possible to verify these features in the field, apart from an assessment of their condition and characteristics. Based on the presence of these features within the site, a full terrestrial biodiversity assessment is required.</p> <p>It is the Specialists opinion that there are no impacts associated with the development of the Aberdeen Wind Facility 1 on terrestrial biodiversity that cannot be mitigated to an acceptable level. As such, should all the proposed mitigation be implemented, the Aberdeen Wind Facility 1 development is deemed acceptable from a terrestrial ecological impact perspective.</p> <p>A Biodiversity Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included as Appendix D of the Basic Assessment Report.</p>
<p>Aquatic Biodiversity Impact Assessment</p>	<p>Screening tool: Very high Sensitivity</p> <p>Required an Aquatic Biodiversity impact assessment (in accordance with the protocol prescribed in GNR 320, Aquatic Biodiversity Assessment Protocols).</p> <p>Verified Sensitivity by Specialist: Low</p>	<p>The study area is dominated by two types of natural aquatic features and a small number of artificial barriers associated with catchments and rivers, characterised as follows:</p> <ul style="list-style-type: none"> » Ephemeral main water course - alluvial systems with or without riparian vegetation. These range from narrow channels to broad flood plain areas. Of importance are the channel areas with riparian vegetation as these remain functional, i.e., contain flows on a more regular basis, while the sandy alluvial areas, are only active during peak flood events with no permanent aquatic habitat or riparian systems. » Minor watercourses » Dams and weirs / berms with no wetland or aquatic features. <p>No wetlands were found within the study area, only riverine features such as alluvial floodplains and riparian thickets</p>

			<p>dominated by <i>Vachellia karroo</i>, <i>Searsia lancea</i>, <i>Euclea undulata</i> and <i>Gymnosporia buxifolia</i>.</p> <p>According to the DFFE screening tool the aquatic systems have a high sensitivity rating.</p> <p>It is, however, the specialist's opinion that the significance of the impacts assessed for the aquatic systems after mitigation would be Low. Thus, based on the findings of this study no objection to the authorisation of any of the proposed activities.</p> <p>An Aquatic Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included as Appendix E of the Basic Assessment Report.</p>
Avian Assessment	Impact	<p>Screening tool: Low Sensitivity</p> <p>Required an Avian Impact Assessment (in accordance with the protocol prescribed in GNR 320, Avian Biodiversity Assessment Protocols).</p> <p>Verified Sensitivity: Very High</p>	<p>The DFFE Screening tool classifies the site as having High Sensitivity. This is based on the potential presence of the following Red Data (RD) species:</p> <ul style="list-style-type: none"> » Ludwig's bustard » Southern black korhaan » Martial eagle » Black harrier <p>Of the above list of potentially present species, all but the Martial Eagle were observed during the monitoring campaign. However, given the number of other RD species identified and high passage rates through the area, the Specialist would classify the site as having Very High sensitivity.</p> <p>According to available information consulted during this study and based on the optimised layout for the Aberdeen Wind Facility 1, and the avoidance of the high-risk areas. It is the Specialists opinion, that there are no fatal flaws from an avifaunal sensitivity perspective, which should prevent the Aberdeen Wind Facility 1 from receiving Environmental Authorisation (EA).</p> <p>An Avifauna Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included as Appendix F of the Basic Assessment Report. The assessment has been undertaken in accordance with the requirements of the BirdLife SA Best Practice Guidelines for wind Developments.</p>
Civil Assessment	Aviation	<p>Screening tool: Low Sensitivity</p> <p>Verified Sensitivity: Low</p>	<p>The South African Civil Aviation Authority (SACAA) and Air Traffic Navigation Services (ATNS) will be consulted throughout the Basic Assessment process to obtain input and details of any requirements for further studies.</p> <p>The project site is not located within close proximity of any aerodromes, landing strips or infrastructure. The low sensitivity rating is supported, and no study is required in this regard.</p>

Defence Assessment	<p>Screening tool: Low Sensitivity</p> <p>Verified Sensitivity: Low</p>	<p>The project site is not located within close proximity of any military base or infrastructure. The South African National Defense Force will be consulted throughout the Basic Assessment process.</p>	
RFI Assessment	<p>Screening tool: High Sensitivity</p> <p>Verified Sensitivity: Low</p>	<p>The Aberdeen Wind Facility 1 is located outside of an Astronomy Advantage Area and within 1km of a telecommunication facility as classified as having high sensitivity for telecommunication.</p> <p>Communication with Openserve indicated that the proposed Aberdeen Wind Facility 1 will not have an impact on their infrastructure. Therefore, a low sensitivity rating is supported, and no study is required in this regard.</p>	
Social Assessment	Impact	<p>The screening report does not indicate a rating for this theme.</p>	<p>A Social Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included in the Basic Assessment Report as Appendix K.</p>
Noise Assessment	Impact	<p>Screening tool: Very High Sensitivity</p> <p>Verified Sensitivity: Medium to Low</p>	<p>The DFFE Screening tool classifies the site as having Very High Sensitivity.</p> <p>During the Noise Impact Assessment, residential areas, and potential noise-sensitive developments/receptors/communities (NSR) were identified using aerial images as well as a physical site visit, with only one location identified that is used on a temporary basis for residential purposes. According to the specialist the significance of the noise impact is of medium to low sensitivity.</p> <p>It is the Specialists opinion that if mitigation measures provided in the noise assessment are implemented the potential medium significance noise impact will be eliminated and recommends that the proposed Aberdeen Wind Facility 1 (and associated infrastructure) be authorized.</p> <p>A Noise Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included in the Basic Assessment Report as Appendix J.</p>
Bats Impact Assessment	<p>Screening tool: High to Medium Sensitivity</p> <p>Verified Sensitivity: Medium to Low</p>	<p>The DFFE Screening Tool identified the site as being comprised of areas of high and medium sensitivity.</p> <p>According to the specialist without mitigation, the proposed Aberdeen Wind Facility 1 is expected to have a Medium significant potential impact on bat roosts, and bat foraging habitat, a High significant potential impact in terms of turbine bat fatalities, and a Medium significant potential impact on bat ecosystem services.</p> <p>With diligent, effective mitigation as recommended by the specialist, the WEF's potential impact on bat roosts, and bat foraging habitat could be reduced to Low, the potential impact in terms of bat turbine fatalities could be reduced to</p>	

		<p>Medium, and the potential impact on bat ecosystem services could be reduced to Low.</p> <p>The Specialist does not object to approval of the Aberdeen Wind Facility 1, provided that the bat impact mitigation measures are diligently implemented during the relevant project phases.</p> <p>A Bat Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included in the Basic Assessment Report as Appendix I.</p>
Traffic Assessment	Impact	<p>The screening report does not indicate a rating for this theme.</p> <p>A Traffic Impact Assessment has been undertaken for the Aberdeen Wind Facility 1 and is included in the Basic Assessment Report as Appendix M.</p>
Plant Assessment	Species	<p>Screening tool: Medium Sensitivity</p> <p>Necessitating a plant species assessment (General Assessment Protocols).</p> <p>Verified Sensitivity by Specialist: High</p> <p>The DFFE Screening Tool indicates that there are several potential botanical sensitivities from the Aberdeen Wind Facility 1 study area, with the result that the majority of the site is mapped as High Sensitivity for the Plant Species Theme. Of these species Sensitive species 1212 is confirmed present within the site, while none of the other three plant SCC were observed within the site. As a result, the site is considered high sensitivity for Sensitive Species 1212 and as a result, a full Plant Species Assessment is required for this species. The other plant SCC are considered absent, with the result that an assessment for these species is not considered to be required.</p>
Animal Species		<p>Screening tool: High Sensitivity</p> <p>Necessitating an animal species assessment (in accordance with Animal Species Assessment Protocols prescribed in GN 43855)</p> <p>Verified Sensitivity by Specialist: Low</p> <p>The DFFE Screening Tool identified the entire site as having a medium and high animal sensitivity theme due to the presence of several bird species of concern. A medium sensitivity was assigned due to the possible presence of the Karoo Dwarf Tortoise, <i>Chersobius boulengeri</i>.</p> <p>The presence of the Karoo Dwarf Tortoise was not confirmed at the site. However, given the scarcity and low activity levels of this species, this does not in itself indicate that it is not present. However, the site inspection suggests that it is highly unlikely that this species is present on the site as the low gravel hills present do not contain much rock shelter for this species. In some areas it may occur within plains habitats. However, as this species was not observed, it is considered unlikely that the Karoo Dwarf Tortoise is present. As such, the site is considered low sensitivity for this species.</p> <p>In terms of other fauna of concern that may be present on the site, but which are not listed under the DFFE Screening Tool, several different species occur in the wider area and would potentially be present on the site including Mountain Reedbuck <i>Redunca fulvorufula</i> (EN) and Black-footed Cat <i>Felis nigripes</i> (VU). However, the site inspection suggests that</p>

none of these species are present within the site with the result that it is considered to be low sensitivity for these species.

Based on the outcomes of the Basic Assessment Process and the outcomes of the Site Sensitivity Verification, the following studies were identified as being required:

- » Terrestrial Ecology Impact Assessment
- » Aquatic Ecology Impact Assessment
- » Avifauna Impact Assessment
- » Soils and Agricultural Potential Impact Assessment
- » Heritage Impact Assessment
- » Visual Impact Assessment
- » Social Impact Assessment
- » Bats Impact Assessment
- » Noise Impact Assessment
- » Traffic Impact Assessment

The specialist studies undertaken for this project are required to comply with either the above Protocols or, alternatively, with the requirements of Appendix 6 of the NEMA EIA Regulations of 2014 (as amended 2017 & 2021).