

PART B: ENVIRONMENTAL THEMES**1. AGRICULTURE****1(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON AGRICULTURAL RESOURCES****1. SCOPE**

This Protocol provides the criteria for the assessment and reporting of impacts on agricultural resources for activities requiring environmental authorisation. The assessment requirements of this Protocol are associated with a level of environmental sensitivity identified by the national web based environmental screening tool for agricultural resources, which is based on the land capability evaluation values as provided by the Department of Agriculture, Forestry and Fisheries¹. If any part of the proposed development falls within an area of “very high” sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: <https://screening.environment.gov.za/screeningtool>

2. DEVELOPMENT LIMITS**a. Renewable energy generation facilities generating electricity of 20 megawatts or more**

For facilities generating renewable energy of 20 megawatts (MW) or more on land zoned for agriculture, development limits apply and are provided in the Table 1 below.

Criteria (land capability evaluation value and category of crop boundary)	Allowable development footprint in hectares per MW of installed generation capacity (with sensitivity ratings from the national web based environmental screening tool shown in brackets)	
	Within field crop boundaries	Outside field crop boundaries
Land capability evaluation value 11 – 15; Irrigation, horticulture/viticulture, shadenet; high value agricultural areas with a priority rating A and/or B	0 (Very High Sensitivity)	0 (Very High Sensitivity)
Land capability evaluation value 8 – 10; all cultivated areas including sugarcane; high value agricultural areas with a priority rating C and/or D	0.20 (High Sensitivity)	0.35 (Medium Sensitivity)
Land capability evaluation value 6 - 7;	0.25 (High Sensitivity)	2.50 (Low Sensitivity)
Land capability evaluation value 1 - 5;	0.30 (High Sensitivity)	2.50 (Low Sensitivity)

¹ Refer to the land capability metadata sheet available on the national web based environmental screening tool.

The development limits are based on the pre-assessment work undertaken through the Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa, 2015, for the effective and efficient roll-out of large scale wind and solar development in South Africa. The pre-assessment was undertaken in specific areas referred to as the Renewable Energy Development Zones (REDZs) as published under Government Notice No. 114, Gazette No. 41445 on 16 February 2018 and extrapolated to cover the entire country. The sensitivities were refined through further public consultation and stakeholder interaction and have been captured in the national web based environmental screening tool.

Allowable development limits refer to the area of a particular land capability that can be directly impacted (i.e. taken up by the physical footprint) by a renewable energy development. Footprint in this context is the area that is directly occupied by all infrastructure, including roads, hard standing areas, buildings, substations, etc. that is associated with the renewable energy generation facility during its operational phase, and that result in the exclusion of that land from potential cultivation or grazing. It excludes all areas that were already occupied by roads and other infrastructure prior to the establishment of the renewable energy facility, but includes the surface area required for expanding existing infrastructure (e.g. widening existing roads). It excludes the corridor underneath overhead power lines, but includes the pylon footprints. It therefore represents the total land that is actually excluded from agricultural use as a result of the renewable energy facility.

The Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa, 2015 can be accessed at:

https://redzs.csir.co.za/?page_id=611 and <https://egis.environment.gov.za/redz>.

3. REQUIREMENTS FOR THE INITIAL SITE SENSITIVITY VERIFICATION

Requirements for the assessment and reporting of impacts on agricultural resources for all activities requiring environmental authorisation are set out in Table 2 below, and correlate to the sensitivity ratings contained in the national web based environmental screening tool. Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification.

1.1 The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

1.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

- (a) a desk top analysis, using satellite imagery; and
- (b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

1.3 The outcome of the Initial Site Sensitivity Verification must be recorded in the form of a report that-

- (a) confirms or disputes the current use of the land and environmental sensitivity as identified by the national web based environmental screening tool;
- (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
- (c) is submitted together with the relevant reports prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

4. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 2: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON AGRICULTURAL RESOURCES FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION	
<p>VERY HIGH SENSITIVITY RATING - Land capability evaluation values 11 – 15; all irrigated land; horticulture and viticulture; demarcated high value agricultural areas with a priority rating of A and/or B.</p> <p>These areas are potentially unsuitable for development owing to:</p> <ul style="list-style-type: none"> - high agricultural value and preservation importance - high production capability - high capital investment made - unique agricultural land attributes. 	<p>1 General Information</p> <p>1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol on a site identified by the national web based environmental screening tool as being of “very high” or “high” sensitivity for agricultural resources must submit an Agricultural Agro-Ecosystems Assessment, unless the:</p> <p>1.1.1 application is for a linear activity for which impacts to the agricultural resource are temporary and the land in the opinion of the soil scientist/agricultural specialist based on the mitigation and remedial measures, can be returned to the current land capability within two years of the completion of construction phase; or</p> <p>1.1.2 impact on agricultural resources is from an electricity pylon which is self-supporting; or</p> <p>1.1.3 information gathered from the Initial Site Sensitivity Verification contemplated in section 3 of this Protocol or the specialist assessment differs from the designation of “very high” or “high” agricultural sensitivity from the national web based environmental screening tool and it is found to be of a “medium” or “low” sensitivity.</p> <p>1.2 Should either paragraphs 1.1.1, 1.1.2 or 1.1.3 apply, an Agricultural Compliance Statement is to be provided. In the case of paragraph 1.1.3, an environmental assessment practitioner or a registered soil scientist/agricultural specialist, as appropriate, must append to the Agricultural Compliance Statement a motivation and evidence (e.g. photographs) of the different agricultural resource sensitivity.</p>
<p>HIGH SENSITIVITY RATING - Land capability evaluation values 8 - 10 including all cultivated areas² including sugar cane areas and demarcated high value agricultural areas with a priority rating of C and/or D.</p> <p>High sensitivity areas are still preservation worthy since they include land with an agricultural production potential and suitability for specific crops.</p>	<p>2 The Agricultural Agro-Ecosystems Assessment</p> <p>2.1 The assessment must be undertaken by a soil scientist/agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP), on the site being submitted as the preferred development site.</p> <p>2.2 The assessment must be undertaken based on a site inspection as well as an investigation of the current production figures, where the land is under cultivation or has been within the past 5 years, and must identify:</p> <p>2.2.1 the extent of the impact of the proposed development on the agricultural resources;</p>

² The Field Crop boundary and Land Capability dataset has been provided by DAFF. For details of the datasets, click on the options button to the right of the Field Crop Boundary layer and Land Capability layer respectively, in the Agricultural Theme to view the metadata.

- 2.2.2 whether or not the proposed development will have an unacceptable negative impact on the agricultural production capability of the site, and in the event where it does, whether such a negative impact is outweighed by the positive impact of the proposed development on agricultural resources.
- 2.3 Description of the status quo, including the following aspects which must be considered as a minimum in the baseline description of the agro-ecosystem:
- 2.3.1 The soil form/s, soil depth (effective and total soil depth), top and sub-soil clay percentage, terrain unit and slope;
- 2.3.2 Where applicable, the vegetation composition, available water sources as well as agro-climatic information;
- 2.3.3 The current productivity of the land based on production figures for all agricultural activities undertaken on the land for the past 3 years, expressed as an annual figure and broken down into production units;
- 2.3.4 The current employment figures (both permanent and casual) for the land for the past 3 years, expressed as an annual figure;
- 2.3.5 Existing impacts on the site, located on a map (e.g. erosion, alien vegetation, non-agricultural infrastructure, waste, etc.).
- 2.4 Assessment of impacts, including the following aspects which must be considered as a minimum in the predicted impact of the proposed development on the agro-ecosystem:
- 2.4.1 Change in productivity for all agricultural activities based on the figures of the past 3 years, expressed as an annual figure and broken down into production units;
- 2.4.2 Change in employment figures (both permanent and casual) expressed as an annual figure;
- 2.4.3 Any alternative development footprints within the preferred development site which would be of "medium" or "low" sensitivity for agricultural resources as identified by the national web based environmental screening tool and verified through the Initial Site Sensitivity Verification.
- 3 The findings of the **Agricultural Agro-Ecosystem Assessment** must be written up in an **Agricultural Agro-Ecosystem Report**.
- 3.1 This report must contain the findings of the Agro-Ecosystem Assessment and the following information:
- 3.1.1 Details and relevant experience as well as the SACNASP registration number of the soil scientist/agricultural specialist/s preparing the assessment including a curriculum vitae;
- 3.1.2 A signed statement of independence by the specialist;
- 3.1.3 The duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;
- 3.1.4 A description of the methodology used to undertake the on-site assessment inclusive of the equipment and models used, as relevant;
- 3.1.5 A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the national web based environmental screening tool;
- 3.1.6 An indication of the potential losses in production and employment from the change of the agricultural land use as a result of the proposed development;

- 3.1.7 An indication of possible long term benefits that will be generated by the project in relation to the benefits of the agricultural activities on the affected land;
- 3.1.8 Additional environmental impacts expected from the proposed development based on the current status quo of the land including erosion, alien vegetation, waste, etc.;
- 3.1.9 Information on the current agricultural activities being undertaken on adjacent land parcels;
- 3.1.10 A motivation must be provided if there were development footprints identified as per paragraph 2.4.3 above that were identified as having a "low" biodiversity sensitivity and that were not considered appropriate;
- 3.1.11 Confirmation from the soil scientist/agricultural specialist that all reasonable measures have been considered in the micro-siting of the development to minimise fragmentation and disturbance of agricultural activities;
- 3.1.12 A substantiated statement from the soil scientist/agricultural specialist with regards to agricultural resources on the acceptability or not of the development and a recommendation on the approval or not of the development;
- 3.1.13 Any conditions to which the statement is subjected;
- 3.1.14 Where identified, proposed impact management outcomes or any monitoring requirements for inclusion in the EMP; and
- 3.1.15 A description of the assumptions made and any uncertainties or gaps in knowledge or data.
- 3.2 In addition, where the activity is related to the generation of renewable energy of 20 MW or more, the report must contain:
- 3.2.1 Calculations of the total development footprint area for each land parcel as well as the total footprint area of the development (including supporting infrastructure);
- 3.2.2 Confirmation whether the development footprint is in line with the development limits set in the Table 1 above, including where applicable any deviation from the set development limits and motivation to support the deviation, including;
- Where relevant, reasons why the proposed development footprint is required to exceed the limit;
 - Where relevant, reasons why this exceedance will be in the national interest;
 - Where relevant, reasons why there are no alternative options available including evidence in terms of alternatives assessed.
- 3.3 A map showing the renewable energy applications within a 50 km radius of the proposed development with valid Environmental Authorisations.
- 4 The findings of the **Agricultural Agro-Ecosystems Assessment** must be incorporated into the Basic Assessment Report, or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which are to be contained in the EMP. A signed copy of the full Agricultural Agro-Ecosystems Assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

<p>MEDIUM SENSITIVITY RATING - Land capability evaluation values 6 – 7.</p> <p>Medium sensitivity areas are likely to be very marginal arable land.</p>	<p>1. General Information</p> <p>1.1. An applicant intending to undertake an activity identified in the Scope of this Protocol proposed on a site identified by the national web based environmental screening tool as being of “medium” or “low” sensitivity for agricultural resources or where the activity is related to the generation of renewable energy of 20 MW or more and the development footprint complies with the development limits identified in the Table 1 above, must submit an Agricultural Compliance Statement, unless:</p> <p>1.1.1. The information gathered from the Initial Site Sensitivity Verification contemplated in section 3 of this Protocol differs from that identified as having a “medium” or “low” agricultural sensitivity by the national web based environmental screening tool and it is found to be of a “very high” or “high” sensitivity; or</p> <p>1.1.2. Where the activity is related to the generation of renewable energy of 20 MW or more, the development footprint deviates from any of the allowable development limits contained in Table 1 above.</p> <p>1.2. Should paragraphs 1.1.1 or 1.1.2 apply, an Agricultural Agro-Ecosystems Assessment is to be undertaken and a report prepared in accordance with the requirements of an Agro-Ecosystems Assessment.</p> <p>2. Agricultural Compliance Statement</p> <p>The Agricultural Compliance Statement must be prepared by a soil scientist/agricultural specialist registered with the SACNASP, on the site being submitted as the preferred development site and must indicate whether or not the proposed development will have an unacceptable negative impact on the agricultural production capability of the site.</p> <p>3. The Agricultural Compliance Statement must contain, as a minimum, the following information:</p> <p>3.1. Details and relevant expertise as well as the SACNASP registration number of the soil scientist/agricultural specialist preparing the statement including a curriculum vitae;</p> <p>3.2. A signed statement of independence by the specialist;</p> <p>3.3. A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the national web based environmental screening tool;</p> <p>3.4. Calculations of the total development footprint area for each land parcel as well as the total footprint area of the development (including supporting infrastructure);</p> <p>3.5. Confirmation that the development footprint is in line with the development limits set in Table 1 above.</p> <p>3.6. Confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimise fragmentation and disturbance of agricultural activities;</p> <p>3.7. A substantiated statement from the soil scientist/agricultural specialist on the acceptability of the development and a recommendation on the approval or not of the development;</p>
<p>LOW SENSITIVITY RATING - Land capability evaluation values 1 – 5.</p> <p>Low sensitivity areas are likely to be non-arable land, and is therefore land onto which most development should be steered.</p>	

	<ol style="list-style-type: none">3.8. Any conditions to which the statement is subjected;3.9. Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMP; and3.10. A description of the assumptions made and any uncertainties or gaps in knowledge or data. <ol style="list-style-type: none">4. The signed Agricultural Compliance Statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
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