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Ukuqala Solar PV facility - EA Amendment Application for Extension of Validity of Environmental Authorisation: Agricultural Specialist Statement

The validity period of the Environmental Authorisations need to be extended for two authorised solar PV facilities on Portion D and Portion E (and now called the Ukuqala Solar PV facility) on the Vetlaagte farm (Remaining Extent of the Farm Vetlaagte No 4).

The purpose of the agricultural component in the environmental assessment process is to preserve the agricultural production potential, particularly of scarce arable land, by ensuring that development does not exclude existing or potential agricultural production from such land or impact it to the extent that its future production potential is reduced. This project, however, poses almost zero threat to agricultural production potential because of the very limited agricultural production potential of the site.

The Agricultural Impact Assessment completed in 2012 rated the significance of the agricultural impact as very low. This was because the site was found to have a low agricultural production potential due to the arid climate as well as restrictive soil characteristics.

It is hereby confirmed that the current status of the site remains exactly as it was in the original assessment. Agricultural production potential is a function of climate, terrain and soils and cannot change significantly in the time period since the original assessment, or even in a much longer time period.

Cumulative Impact

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment.

The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being

assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.

The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential. The defining question for assessing the cumulative agricultural impact is this:

What loss of future agricultural production potential is acceptable in the area, and will the loss associated with the proposed development, when considered in the context of all past, present or reasonably foreseeable future impacts, cause that level in the area to be exceeded?

Department of Forestry, Fisheries and the Environment (DFFE) requires compliance with a specified methodology for the assessment of cumulative impacts. This is positive in that it ensures engagement with the important issue of cumulative impacts. However, the required compliance has some limitations and can, in the opinion of the author, result in an over-focus on methodological compliance, while missing the more important task of effectively answering the above defining question.

The cumulative impact assessment has considered all renewable energy projects within a 30 km radius. These are listed in Table 1.

All of these projects have the same agricultural impacts in an almost identical agricultural environment, and therefore the same mitigation measures apply to all.

In quantifying the cumulative impact, the area of land taken out of agricultural use as a result of all the projects listed in Table 1 (total generation capacity of 1703 MW) will amount to a total of approximately 4258 hectares. This is calculated using the industry standards of 2.5 and 0.3 hectares per megawatt for solar and wind energy generation respectively, as per the Department of Environmental Affairs (DEA) Phase 1 Wind and Solar Strategic Environmental Assessment (SEA) (2015). As a proportion of the total area within a 30 km radius (approximately 282,700 ha), this amounts to only 1.51% of the surface area. This is within an acceptable limit in terms of loss of low potential agricultural land which is only suitable for grazing, of which there is no scarcity in the country. This is particularly so when considered within the context of the following point.

Table 1. Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area.

DEA Reference	Technology	Megawatts
12/12/20/1673	Solar PV	9.7
12/12/20/2025	Solar CSP	100
12/12/20/2025/1	Solar CSP	0
12/12/20/2025/2	Solar PV	75
12/12/20/2025/2/A	Solar PV	48.3
12/12/20/2048/1	Solar PV	75
12/12/20/2048/2	Solar PV	75
12/12/20/2048/3	Solar PV	75
12/12/20/2048/4	Solar PV	75
12/12/20/2177	Solar PV	0
12/12/20/2250	Solar PV	0
12/12/20/2250/1	Solar PV	0
12/12/20/2250/2	Solar PV	0
12/12/20/2250/3	Solar PV	75
12/12/20/2250/4	Solar PV	75
12/12/20/2250/5	Solar PV	75
12/12/20/2498/AM3	Solar PV	19.9
12/12/20/2500	Solar PV	150
12/12/20/2500/AM3	Solar PV	0
14/12/16/3/3/2/382/1	Solar PV	75
14/12/16/3/3/2/382/2	Solar PV	75
14/12/16/3/3/2/382/3	Solar PV	75
14/12/16/3/3/2/382/4	Solar PV	75
14/12/16/3/3/2/382/5	Solar PV	75
14/12/16/3/3/2/382/5/AM3	Solar PV	0
14/12/16/3/3/2/382/6	Solar PV	75

14/12/16/3/3/2/382/7	Solar PV	75
14/12/16/3/3/2/403	Solar PV	150

In order for South Africa to develop the renewable energy generation that it urgently needs, agriculturally zoned land will need to be used for renewable energy generation. It is far more preferable to incur a cumulative loss of agricultural land in a region such as the one being assessed, which has no crop production potential, and low grazing capacity, than to lose agricultural land that has a higher potential, and that is much scarcer, to renewable energy development elsewhere in the country. The limits of acceptable agricultural land loss are far higher in this region than in regions with higher agricultural potential.

It should also be noted that there are few land uses, other than renewable energy, that are competing for agricultural land use in this area. The cumulative impact from developments, other than renewable energy, is therefore likely to be very low.

Due to all of the considerations discussed above, the cumulative impact of loss of future agricultural production potential will not have an unacceptable negative impact on the agricultural production capability of the area. The proposed development is therefore acceptable in terms of cumulative impact, and it is therefore recommended that it is approved.

Conclusions

This specialist statement concludes the following:

1. The baseline status of the environment in terms of agricultural impact has not changed since the initial EIA was done in 2012.
2. The initial impact rating undertaken during the initial assessment is still valid.
3. The mitigation measures provided in the initial assessment are still applicable.
4. There are no new mitigation measures that should be added to the Environmental Authorisation if the DFFE decides to extend the commencement period as per the application.
5. The Layout as approved in 2012 is still applicable.

Final recommendation: The environment in terms of agricultural impact has not changed significantly since 2012; therefore, there is no objection to the extension of the validity of the Environmental Authorisation.

A handwritten signature in black ink, appearing to read 'J. Lanz', with a long horizontal stroke extending to the left.

Johann Lanz (Pr. Sci. Nat.)