

Review:  
Proposed Kloofsig Solar PV Energy Facility  
Visual Impact Assessment

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Review prepared by  
Bernard Oberholzer, Landscape Architect / Environmental Planner  
PO Box 471 Stanford, 7210 Western Cape

For  
SRK Consulting (Pty) Ltd

On behalf of  
Kloofsig Solar (Pty) Ltd

## **1 Introduction**

The review of the proposed Kloofsig Solar PV Energy Facility (SEF) was requested by SRK Consulting, who are the environmental assessment practitioners for the project. The review arose out of the Visual Impact Assessment (VIA) having been done in-house by SRK, necessitating a second opinion. The purpose of this review therefore is to comment on the accuracy and credibility of the three separate VIA reports related to the three phases of the proposed Kloofsig SEF. The review covers each of the three phases under separate headings within this document.

An Executive Summary of the Final Scoping Report (SRK, Sept. 2016) was made available to the Reviewer, providing a useful overall context for the VIA, including the motivation for the SEF project.

## **2 Scope of the Visual Review**

Criteria against which visual impact assessments can be reviewed are indicated in Oberholzer (2005) and include the following: The VIA

- is appropriate to the nature and scale of the proposed development;
- provides a full description of the environment and the project;
- states assumptions, uncertainties and limitations;
- considers the project within its wider context;
- provides a clear methodology using accepted conventions for visual assessment;
- includes both quantitative and qualitative criteria;
- cumulative visual impacts have been considered;
- an evaluation of alternatives has been made;
- an explanation of significance ratings, related to bench-marks, is given;
- long term sustainable development objectives are included;
- recommendations for visual mitigation are sensible and practical;
- recommendations for monitoring programmes have been outlined;
- the best practicable environmental option has been considered;
- all the visual issues raised in the scoping have been addressed;
- includes a clear summary of mitigation measures, including essential and optional measures;
- graphics, including maps and visual simulations, are clear; and
- all sources of information and references are given.

The Environmental Impact Assessment Regulations of 2014, describe the legal requirements relating to specialist studies, which are similar to those listed above, as outlined in Appendix 1 of the Kloofsig VIA.

The reviewer did not visit the site, as he is generally familiar with the area, having been involved in the study of the National Electricity Grid Infrastructure SEA for the CSIR (2015), as well as a number of similar solar energy proposals in the De Aar and Kimberley areas. In addition, the photographic coverage contained in the VIA by SRK provided a reasonably good impression of the Kloofsig site and its surroundings.

### **3 Site Location and Context**

The proposed Kloofsig SEF is located on the Kalkpoort Farm, about 10km to the northwest of Petrusville in the Northern Cape, and about 10km from the Rolfontein Nature Reserve, which incorporates the PK Le Roux Dam.

The Kloofsig SEF site does not currently fall within the 'Focus Areas' which were identified to facilitate the roll-out of wind and solar energy, and for which Strategic Environmental Assessment (SEA) studies were carried out by the CSIR (2014). The application for SEFs outside these Focus Areas is however not precluded.

The Kloofsig site falls within the National Electricity Grid Infrastructure's 'Central Corridor', which also formed part of a SEA study by the CSIR (2015). The SEA determined that the visual sensitivity levels for the general Kloofsig area range from medium to low, the medium rating being a result of the numerous game farms in the area. This was based on a regional-scale visual assessment and therefore subject to local-scale conditions.

### **4 Visual Impact Assessment (VIA)**

The Environmental Impact Assessment Regulations of 2014, Appendix 8, refers to specialist reports, which are required *inter alia* to include the following:

- The sensitivity of the site (visual sensitivity in this case);
- Identification of areas to be avoided, including buffers;
- Assumptions, uncertainties and gaps in knowledge;
- Mitigation measures and monitoring for inclusion in the EMPr;
- An opinion as to whether the activity should be authorized; and
- Conditions for inclusion in the environmental authorization.

## **Kloofsig 1:**

The approach, assumptions and methodology are adequately covered in the VIA Report. A fairly detailed description and footprint of the proposed Kloofsig SEF is included, but unfortunately there are no digital 3D models or montages to give an impression of what the solar facility and related infrastructure would look like. The reason given for this is that the actual design of the PV arrays has yet to be determined. In the reviewer's opinion it is unlikely that the detailed design of the PV arrays would have a bearing on the overall visual impact significance.

The description of the study area and existing character of the landscape is covered in Paragraph's 2.1 and 3.1, and is supported by a photographic survey from a range of viewpoints surrounding the site. It was not clear from Paragraph 2.1 in the VIA Report if the listed communities/villages are actual settlements, or individual farmsteads, and this is being clarified in an update to the VIA. The same applies to Paragraph 4.6, which referred to surrounding 'villages'.

Paragraph 4.6 lists sensitive viewers, being 'villages', 'local schools' and 'travellers along the R369 and R48'. However the location and distance to these potential sensitive viewers is not indicated, nor the extent to which they would be affected, if at all. This is being clarified in an update to the relevant figures in the VIA. Game farms and tourist accommodation are not indicated, and the Reviewer therefore assumed that none in the area would be affected.

Although a scale bar is included in the series of figures, the addition of distance radii from the proposed SEF, drawn on the maps, would have helped to give an indication of distance to receptors. These are being included in an update to the VIA. Separate viewsheds for the solar PV arrays and powerlines are provided in Appendix 3.

As indicated in Figure 2-1, it appears that no landscape or scenic features of significance occur within the footprint of the proposed SEF. Based on the viewshed in Figure 4-3, it also appears that no settlements would be affected by the proposed SEF, except perhaps for users of the district road to the east of the site. As a result of the apparent suitability of the site, no further alternatives were considered during this phase of the project.

The criteria used to evaluate the visual impacts are comprehensive and follow the norm for visual studies. The rating system is also very thorough, if perhaps overly complicated, the potential visual impacts being summarized in Table 5-8, both without and with mitigations.

Practical mitigation measures have been included, and it is assumed that these, together with the management guidelines, would be mandatory. An additional mitigation that could be included is that any operations and maintenance buildings should be located together with other structures, such as the proposed substation, in already disturbed areas, to minimise the scatter of buildings in the rural landscape, and this is being included in the updated VIA.

The visual assessment did not originally include potential 'cumulative' impacts relating to Kloofsig 1. According to the DEA website, another solar PV energy project is proposed to the south of the Kloofsig site, near Petrusville, which could contribute to cumulative visual impacts in the local area, as indicated in the amended VIA. It could be assumed that the addition of the proposed 32kV connecting powerline would not add significantly to the already considerable existing powerlines crossing the study area.

The Report indicated that there were no anticipated fatal flaws or no-go areas on the site and that the visual significance rating would be medium-high after mitigation. It is furthermore indicated that the visual impacts could easily be reduced by means of the recommended mitigations and management guidelines. The Reviewer is in general agreement with these findings based on the available information and the methodology used.

### **Kloofsig 2:**

The various comments for Kloofsig 1, above, apply equally to Kloofsig 2.

In Paragraph 4.6, travellers along the district road immediately to the east of the site could be included among the potential sensitive viewers. This suggests that a possible additional mitigation in Paragraph 6.1 could be that of a visual buffer, of say 250m, along the district road, and this is being dealt with in the updated VIA.

Paragraph 5.2.1 indicates that by increasing the proposed solar facility into the Kloofsig 2 area, a cumulative visual impact is expected and this is reflected in Table 5-8.

### **Kloofsig 3:**

The various comments for Kloofsig 1 apply equally to Kloofsig 3.

In Paragraph 4.6, travellers along the district roads to the east and south of the site could be included among the potential sensitive viewers. These roads are however more than 500m away and no visual buffers would be considered necessary.

Paragraph 5.2.1 indicates that by increasing the proposed solar facility into the Kloofsig 3 area, an overall cumulative visual impact is expected and this is reflected in Table 5-8.

## **5 Conclusion**

The review highlighted a few minor gaps in the original visual assessment, which have been addressed in the updated VIA. The Reviewer is otherwise in general agreement with the findings of the respective VIAs for Kloofsig 1, 2 and 3.

## **References**

Oberholzer, B. 2005. *Guideline for involving visual & aesthetic specialists in EIA processes: Edition 1*. CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

SRK Consulting, Sept. 2016. Proposed 75 MW Kloofsig Solar PV Energy Facility, Northern Cape: Final Scoping Report, Executive Summary

SRK Consulting, Nov. 2016. Proposed 75 MW Kloofsig Solar PV Energy Facility, Northern Cape: Visual Impact Assessment. Kloofsig 1, 2 and 3.

## Statement of Independence

The reviewer declares that he is an independent practitioner with expertise and wide experience in visual impact assessments, that the review has been carried out in an objective manner and complies with the relevant EIA regulations, and that all material information in his possession, which may influence a decision by the competent authority and the objectivity of the review, has been disclosed.

Bernard Oberholzer

Bernard Oberholzer Landscape Architect

Professional Member South African Council for the Landscape Architects Profession  
(SACLAP) Reg. no. 87018

### Expertise

Bernard Oberholzer has a Bachelor of Architecture (UCT) and Master of Landscape Architecture (U. of Pennsylvania), and has more than 20 years experience in undertaking visual impact assessments. He has presented papers on *Visual and Aesthetic Assessment Techniques*, and is the author of *Guideline for Involving Visual and Aesthetic Specialists in EIA Processes*, prepared for the Dept. of Environmental and Development Planning, Provincial Government of the Western Cape, 2005. He co-authored the 'Landscape Assessment' report for the *National Wind and Solar PV Strategic Environmental Assessment*, in association with the CSIR, for the Department of Environmental Affairs in 2014, and a similar visual study for the National Electricity Grid Infrastructure SEA in 2015.