

Philip Rosenthal

From: Philip Rosenthal [mailto:PhilipRosenthal.com]
Sent: 13 December 2013 06:10 PM
To: 'Peter.Bradshaw@nmmu.ac.za'
Cc: 'hugo.bezuidenhout@sanparks.org'; 'frans.vanrooyen@sanparks.org'; 'howard.hendricks@sanparks.org'
Subject: Anti-reflective coating mitigation alternative
Importance: High
Attachments: reflectivity-of-solarworld-solar-panels.pdf; Suniva Reflection and Glare Report - Marketing - August 2012.pdf; The reflectivity of PV panels in relation to other surface areas.docx



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Dear Mr Bradshaw

Thank you for SANParks comment dated 9 Dec 13. With respect to our discussions, on point 3 the project proponent has requested if SANParks could review the attached documents on the mitigation alternative of 'anti-reflective coating' on the PV modules (to reduce the risk of glare) as an alternative to 'single-axis tracking' (which would have zero glare risk). For technical reasons they prefer fixed panels for this project and their current design proposal is for fixed panels. Nevertheless, they are willing to change their design.

- * The risk of glare from the PV site would be limited to the viewshed area for the preferred site, which would be scattered points along the stretch of gravel park road (east of the point at which it crosses the National road running north-south through the park and west of the dry river bed) on which there are currently no viewsites.
 - The PV arrays would be at a distance of 3-4 km away which would appear as a broken line on the horizon.
 - By comparison, there is currently grey agricultural shade cloth over a vineyard at 560m overlooked by a park road and Moon Rock.
 - There is zero risk of glare to any viewsite in the park including Moon Rock or the new Swartrante viewsite.

- * For almost the whole day, the panels PV would be less reflective than the existing vegetation, but for a short period of the day from certain locations the PV panels can reflect when the sun is at a certain angle low in the sky.

- * Since there are currently no view sites on this 400m stretch of road, the direction the viewer is looking will in most cases be the direction in which he is driving in a motor car. There would be no risk of glare reflection from the PV panels if he is driving away from the sun.

- * When people are sitting in a car rather than standing up, they are physically closer to the ground which reduces their chances of line of sight to the proposed PV site because of trees and rocks in the way.

- * The viewer would tend to look north towards the mountains and Orange river canyon, which is mostly the more interesting view than looking south out of the park towards the PV site.

* The risk of glare would occur when the sun is low in the sky and the viewer is looking toward the sun with the result that the brightness of the sun itself would tend to dominate the viewers eyes.

* The PV site would be visible from the public tourist road running north-south through the park and the R359 and there would be a risk of glare at times from places on this road outside of the park, but this road is not accessible from the park roads and so is not likely to affect SANParks.

* The proponent proposes using anti-reflective coating on the glass would disperse the light thus further reducing the risk of flashes of glare.

* In response to your request, I have asked the Visual Specialist to provide a formal statement for SANParks on glare risk with this proposed 'reflective coating' mitigation, but he says he can only do so in mid-January 2014. In the interim, please consider the attached documents.

The statement on glare risk in the Draft Basic Assessment Report is: "A small possibility exists that for limited periods of time a flash of reflected sunlight may be experienced from within the park. Should the facility be constructed on site 1 this possibility will be eliminated from all the areas of the park that are commonly accessed by the visitors as this can only occur within the viewshed. The implementation of the single axis tracking form of solar panels, as opposed to fixed panels, will ensure that this does not occur at all."

The project proponent has told me: "If SANParks are still of opinion to use 'single axis tracking' after reviewing the attached documents, Mulilo will reconsider the design and possibly work with our Technical Advisor to obtain an alternative Solution, which will be in line with SANParks request."

Yours sincerely,

Philip Rosenthal

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