

Glint and glare – how dazzling is PV?

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With the expansion of Heathrow back in the press the old issue of glint and glare from solar PV systems will undoubtedly re-emerge. And whether you are installing multi-megawatts next to an airport or 50kWp next to an airfield, you've no doubt been asked about glare from modules at some stage in your solar life. Numerous studies have demonstrated that the risk of dazzling pilots with light reflected from solar PV modules is insignificant and yet this potential risk is raised on a regular basis.

No Glint and Glare

Anyone who has flown into Munich Airport will have seen the huge number of solar farms and roof top PV systems around the airport – and the most notable thing is how much blue there is – not how much reflected light is thrown up into the sky. The key thing to consider is the simple fact that solar cells are designed to absorb light NOT reflect it which is why the most detailed study into this issue by the Federal Aviation Administration in the US reports that “evidence suggests that either significant glare is not occurring during times of operation or if glare is occurring, it is not a negative effect and a minor is part of the landscape to which pilots and tower personnel are exposed”.

Reflection from water, glass buildings and car parks is in fact more significant than from similar areas of solar PV. The chart below shows the relative reflectivity of different surfaces:



The simple fact that there are PV systems on and around many airports provides further post hoc evidence that solar PV near airports does not present a glare risk to pilots. The 14MW PV array on the flight path into the Nellis Airbase in Nevada was subjected to detailed glare analysis and the conclusion was that the worst possible case there was a slight potential for an "after image or flash glare" which was similar to the risk from reflections from water and less than that from snow or white concrete. The PV installations at the airports of San Francisco, Oakland, Denver, Munich, Zurich, Changi, Boston and Stuttgart all point to the same conclusion having been reached in each of these cases.

So wherever the debate goes on airport expansion there is no reason to hold off any PV projects due to concerns about glint and glare.