

Glint and Glare

Environmental Impact Assessment

Purpose:

This Environmental Impact assessment has been prepared to support Planning Applications querying the glint and glare effect of solar panels.

Glint and Glare Assessment:

Definitions:

The Photovoltaic Panel

Photovoltaic panels also known as PV panels are designed to absorb solar energy and retain as much of the solar spectrum as possible in order to produce electricity.

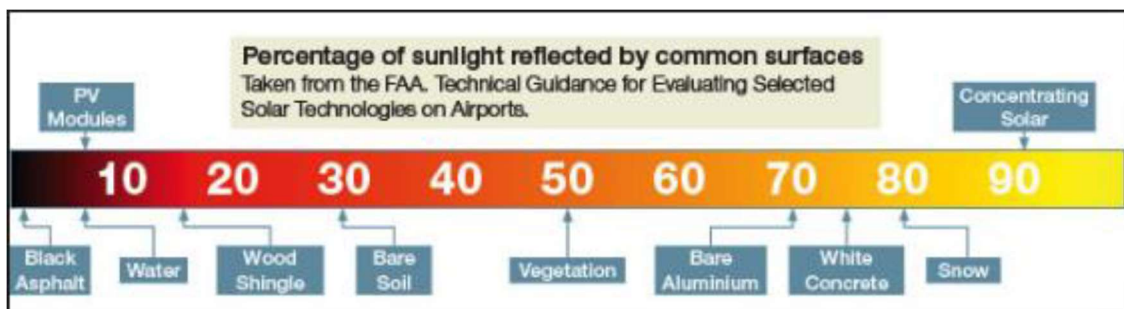
Glint

Also known as specular reflection, produced as a direct reflection of the sun on the surface of the PV panel. This is a potential source of the visual issues regarding viewer distraction.

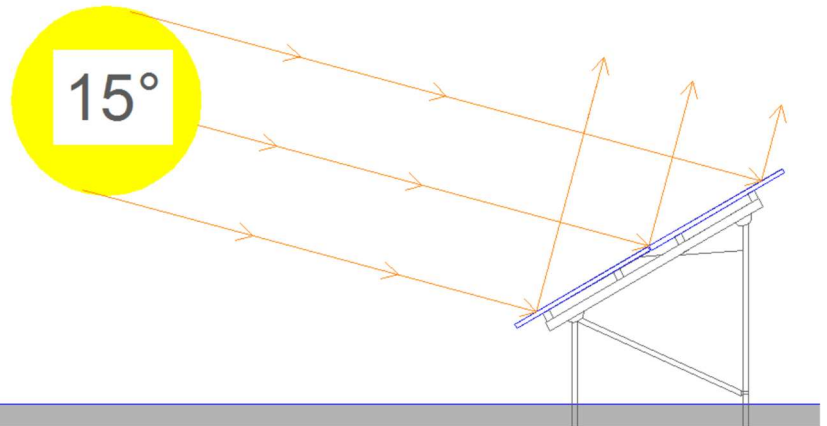
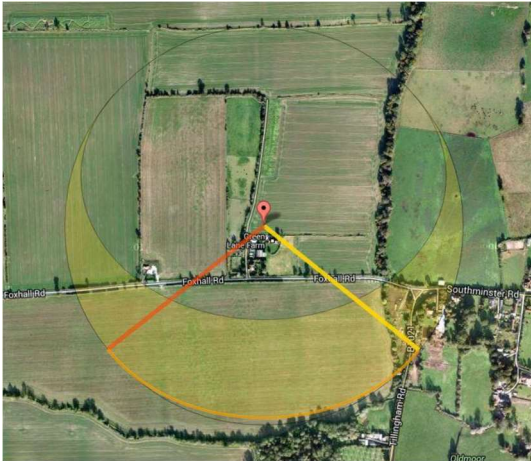
Glare

A continuous source of brightness relative to diffused lighting. This is not a direct reflection of the sun but rather a reflection of the sky around the sun. Glare is significantly less intense than glint.

Relative reflective properties of PV modules in relation to other materials:

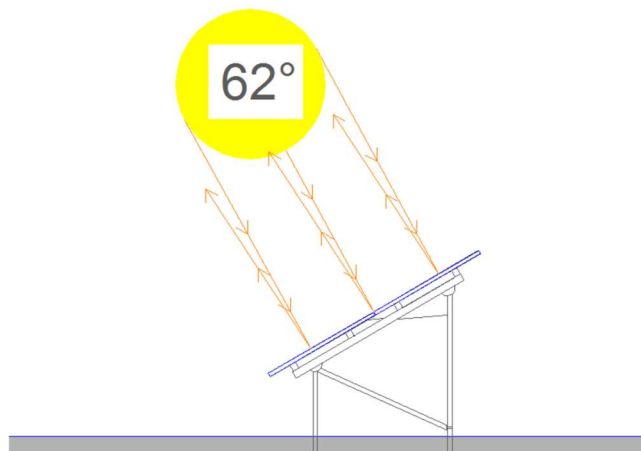
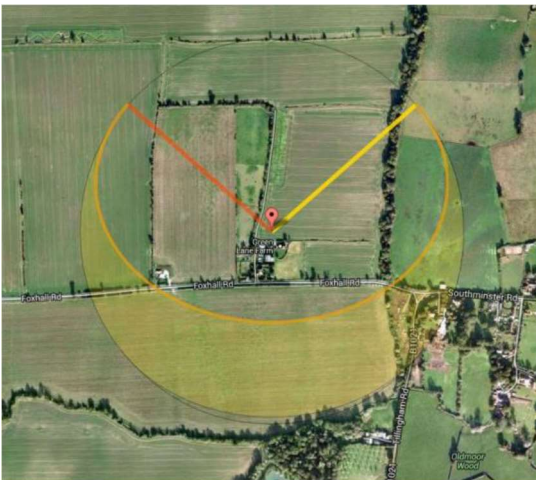


Sun path during the year:



December 21st (Lowest sun angle 15°)

Panel angle 20°- 30° therefore any direct 'Glint' light should be reflected upwards. 'Glare light would be less than the surrounding vegetation as evidenced in the reflective properties table above.



June 21st (Sun angle 62°)

Panel angle 20° - 30° therefore any direct 'Glint' light should be reflected upwards. 'Glare light would be less than the surrounding vegetation as evidenced in the reflective properties table above.

As shown above with the sun at its highest and lowest angle of the year the more hazardous glint light should be reflected upwards and not towards the road or neighbours. This is due to the angle of inclination of the panel which is set to maximise the output of the panels (30 degrees). Many large (1MW+) solar installations are sited close to airports and other high traffic areas without significant issues with glint and glare this is due to the fact that the modules themselves are dark in colour to absorb light and all solar panels have at least one layer of anti-reflective coating to reduce light reflection this is because light reflected off the panels reduces the overall energy output. Solar panels have less reflectance than many other everyday things such as vegetation, concrete and snow.