Vereniging Nederlandse Verkeersvliegers

position paper

Solar Panel installations at airports

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VNV supports the use of renewable energy sources, where operationally fit. So far, no major safety incidents related to these installations have been reported. Nevertheless, design and installation should always be preceded by a risk analysis, specific for each installation.

At first sight airports seem very fit for solar photovoltaic-projects, since airports are usually situated on flat terrain and compass a large area of "unused" terrain between runways, taxiways and the airport buildings. The land close to and at the airport is often unsuitable for other use due to noise of low-flying aircraft and environmental restrictions such as limits on airspace penetration and wildlife management. The airport itself represents a single large customer immediately adjacent to these kind of projects.

The usage of solar energy at airports has developed gradually and nowadays various types of installations are used. These vary from application on areas between the taxiway and runway system to installation on terminal buildings or parking deck roofs. Several airfields in the United States have large projects installed[1], as well as airports in for example Germany, Africa and the Caribbean.

Cochin International Airport (CIAL)[2] in India is the first fully solar powered airport, since 2016. Nevertheless, there are potential risks associated with the use of solar photovoltaic installations at airports.

The most common identified risks to be mitigated are:

- the effects of glare from reflection on the solar panels;
- thermal disturbances from heat radiation, the effect on wild-life and especially bird populations;
- the accessibility of (remote) areas by emergency services and possible interference of communications and navigation systems.

Depending on the type and place of the installation, other risks should also be taken into account. Also, where essential airport services make use of renewable energy, provisions should be in place to ensure reliability, availability and continuity in case of disruptions in power supply.

As a result of the above, the solar project should be consistent with the Airport Master plan[3], Airport Layout plan and an Environmental Impact Assessment[4] should take place.

Guidance with regard to glare hazard (ocular impact) is published by the FAA in conjunction with the United States Department of Energy (DOE), in the form of a Solar Glare Analysis Hazard Tool (SGAHT)[5], supported by an interim policy[6] and technical guidance[7].

[1] Minneapolis St. Paul, Tampa airport, Denver, Indianapolis, Tucson, Honolulu
[2] https://amp.cnn.com/money/2016/03/14/technology/india-cochin-solar-powered-airport/index.html
[3] ICAO doc 9184 – part 1 Master Planning
[4] ICAO doc 9184 – part 2 Land use and Environmental Control
[5] https://share.sandia.gov/phlux
[6] https://www.gpo.gov/fdsys/pkg/FR-2013-10-23/pdf/2013-24729.pdf
[7] https://www.faa.gov/airports/environmental/policy_guidance/media/airport-solar-guide-print.pdf