

## **Solar photovoltaics in airport : risk assessment and mitigation strategies**

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### **ABSTRACT**

Solar PV systems are being installed in airports across the globe. It is a relatively new application of solar PV technology with a potential impact on aviation safety. The main objective of this paper is to assess the risk of solar photovoltaics at the airport. At first, potential risk/ hazard to aviation safety from solar photovoltaics in airport premises is identified, and then the severity and probability level for each risk is assessed. A risk assessment matrix is developed using Hazard Identification and Risk Assessment method. It is observed that there are seven types of possible hazards from airport-based solar PV systems. The risk index is highest for glare occurrence from PV modules (4B), strike from birds in PV site (4B), and interference to communication systems (3B). It is concluded that most of the risks need implementation of mitigation measures such as prior glare assessment in the feasible sites, periodic monitoring of bird's activity in the PV array and follow safety distance between PV array and communication aids. Researchers and engineers must work along with aviation and airport officials to mitigate possible risks from solar PV installation in the airports.

### **KEYWORDS**

Airports; Glare; Hazard; Risk severity; Risk probability; Safety; Solar PV

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