

Master Thesis Brief Description

Thesis Title	Solar Glare Hazard Analysis of PV Farms Near Airports
Programme of Studies	MSc in Sustainable Energy Systems
Course	SES 701 Maser Thesis I + II
Area of Study	Sustainable Energy Technologies
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Semester	Fall Semester 2021
Short Description	Renewable energy sources and photovoltaic installations in particular, are gaining ground in the power supply sector. It is of great importance to assure that this technology does not pose any threat to humans and the environment in general. Glint and glare reflection from photovoltaic installations with regards to aviation travel draws a lot of attention, not so much because of the frequency of accidents but more because of the severity of one if it occurs. With the Thesis it is attempted to investigate, the global concern on the effect of glint and glare from Photovoltaic (PV) farms on aviation travel, the attempts made to regulate their development in different countries, to strengthen or contradict existing research and other global perception of glare risks to aviation travel and to assess the effect of a PV farm in close vicinity to Nicosia General Hospital in relation to the Hospital's Helipad. The proposed location is described in detailed as far as technical characteristics and geographical location. The landing and take-off paths of the helicopter are mapped and are correlated with the photovoltaic arrays. The methodology includes identification of the location of the proposed project, technical specifications and installation parameters and identification of the receptor points to be considered for glare effect. Software simulations are executed and the results are assessed in order to identify possible glare issues and investigate mitigation measures and alternatives to the proposed solution.