

Trends of hybrid earth-air-pipe (EAP) photovoltaic cooling system for efficiency improvement: a review

ABSTRACT

Photovoltaic technologies have received great attention during the last decade and is widely used around the globe. The technology gave a good solution to energy supply-demand concern, under the condition that it is under a viable economic preposition for its implementation. The geographical location of a solar module affects amongst others the efficiency of the solar panel due to temperature variation and weather effect. High operating temperature cause loss of efficiency and consequently increases the operating cost of a solar farm. A number of innovative approaches to mitigate the high operating temperature is available and are categorized as active or passive cooling system. In this paper, a review of cooling methods with an emphasize on EAP hybrid cooling systems is made. At the end of the review, it is found that an innovative approach to further explore EAP PV cooling system as a solution to loss of efficiency due to high temperature is highly necessary and essential for the advancement of the solar energy technology.