

Power degradation and its climatic correlation in field-aged photovoltaic modules operating in Kenya

Photovoltaic (PV) modules deployed outdoors usually degrade physically due to exposure to the various elements such as UV light, a range of fluctuating temperatures and humidity and variations in operating currents and voltages. In this article, physical degradation of a PV module was found to have a corresponding effect on the power characteristics. Research was carried out to investigate the relationship between the maximum power output of field-aged PV panels and the climatic conditions under which they have been operating. Identification and analysis of modules that had been deployed in various locations in Kenya, and had been in operation for more than 8 years was carried out. The current power at the maximum power point was determined for each panel and this was compared to the original manufacturer's specifications.