Influence of Tilt Angle on Photovoltaic Solar Panel

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Abstract:

The industry of solar energy and photovoltaic systems enhanced the efficiency of the structure fabrication and designs. Photovoltaic panels are built-up on flat top surfaces of houses, sky buildings, telecommunication towers and factories in State of Kuwait. In the meantime, and forward, the concept of Building-Integrated Photovoltaic system becomes a trend in State of Kuwait. Photovoltaic system with various tilt angles has been operated in State of Kuwait by setting the tilt angle of 30˚. The photovoltaic system is based on Silicon material and fixed toward the South direction in order to collect optimum solar radiation at different angles from 00 to 900 at the Equinox and Solstice times during a year, reaching optimum output power for a bigger angle than 30˚. The results of this research during the year illustrate that the output power of photovoltaic system with tilt angle of 50˚ during a full year, is similar to the results due to the tilt angle of 30˚.

Keywords:

Photovoltaic Panels, Photovoltaic system, Solar energy, Tilt angle.