

Estimation of Global and Diffuse Solar Radiation Studies of Islamabad, Capital City of Pakistan

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Abstract : Global and diffuse solar radiation studies have been carried out for the Capital city of Pakistan, Islamabad (latitude 33° 43'N and Longitude 73° 07'E) to assess the solar potential of the area. The global and diffuse solar radiation were carried out using sunshine hour data for the above-mentioned area. Monthly total solar radiation is calculated through regression constants a and b through declination angle of the sun and sunshine hours and KT that is cloudiness index are used to calculate the diffuse solar radiation. Result obtained shows variation in the direct and diffuse component of solar radiation in summer and winter months for Islamabad. Diffuse solar radiation was found maximum in July, i.e., 32% whereas direct or beam radiation was found to be high in April to June, i.e., 73%. During July, August, and December, the sky was found cloudy. From the result, it appears that with the exception of monsoon month July and August the solar energy can be utilized very efficiently throughout the year in Islamabad.

Keywords : global radiation, Islamabad, diffuse radiation, sky condition, sunshine hour

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