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# Performance Evaluation of Grid Connected Photovoltaic System

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**Abstract :** This study analyzes and compares the actual measured and simulated performance of a 3.2 kwP grid-connected photovoltaic system. The system is located at the Outdoor Facility of Government Day secondary School Katsina State, which lies approximately between coordinate of 12°15′N 7°30′E. The system consists of 14 Mono crystalline silicon modules connected in two strings of 7 series-connected modules, each facing north at a fixed tilt of 340. The data presented in this study were measured in the year 2015, where the system supplied a total of 4628 kWh to the local electric utility grid. The performance of the system was simulated using PVsyst software using measured and Meteonorm derived climate data sets (solar radiation, ambient temperature and wind speed). The comparison between measured and simulated energy yield are discussed. Although, both simulation results were similar, better comparison between measured and predicted monthly energy yield is observed with simulation performed using measured weather data at the site. The measured performance ratio in the present study shows 58.4% is higher than those reported elsewhere as compared in the study.

**Keywords :** performance, evaluation, grid connection, photovoltaic system
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