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Electric Vehicles with Battery Storage based DC Charging Station using Solar

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Abstract: *In this article, a renewable energy based Electric vehicle charging station (EVCS) is proposed which provides electricity to EV with the support of Battery storage system (BSS). Among all renewable energy sources, the solar PV system is best option because of abundance and easy to operation. However solar PV power fluctuates because of change in irradiance and temperature, and it cannot generate constant power, therefore, to compensate the power fluctuation a standby battery storage system is needed to meet up the power demand and maintain the reliability of the EVCS. Thereby, a DC micro grid system has been developed which consist of BSS along with the solar PV system and electric vehicle battery charger. The charging controllers are operated based on the concept of power balance, and constant current/constant voltage charging. Performance of the charging system is validated with simulation and experimental results.*

Keywords: battery storage system, solar PV system, electric vehicle charging station, electric vehicle battery etc..

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