

PV-STATCOM Based Smart Inverter for Reliable Distribution System: A Review

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Abstract: *The design technique based on the well-established concept of PV-STATCOM is implemented. The main task towards the achievement of more reliable increased integration of distributed energy resources on to the grid requires new pattern shift to improve the efficiency as well as overall performance of the system. The inverter which can act as smart inverter by controlling active and reactive power, frequency control and regulation of voltage and power factor apart from its typical function of DC to AC conversion could be a potential solution. PV inverter based reactive power control strategies. The control algorithm is based on balancing the power production from a solar PV depends directly on solar isolation. Hence the solar PV remains idle when there is no isolation. Solar PV along with its inverter resembles the functionality of STATCOM. The PVSTATCOM concept allows utilization of solar farm throughout the day. During daytime, real power generation takes place normally and switches to compensate dynamic reactive power needs on critical times. The dual functionality of the proposed system to regulate the reliable voltage at PCC and mitigate low voltage issues is demonstrated through MATLAB simulation to make reliable effective use of available resources Arduino controller is used to switch between the functions depending on the system requirement*

Keywords: STATCOM, MATLAB, DC to AC conversion, PCC etc.

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