

**MITIGATION OF GRID CONNECTED DISTRIBUTED SOLAR PHOTOVOLTAIC FLUCTUATIONS USING BATTERY ENERGY STORAGE STATION AND MICROGRID**

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**Abstract**

The inherent variable property of solar generation and uncertainty of solar generation forecasting are two crucial challenges for utility grid operators in interconnected power system. Nowadays grid connected distributed photovoltaic solar generation prosumers are growing fast in power system. This paper explicates about battery energy storage station and microgrid as two potential solutions to mitigate the solar generation variability. The novel optimal scheduling model to mitigate the solar variability by using dynamic programming is suggested in the proposed work. A numerical simulation is solved using MATLAB software to exhibit the effectiveness of the proposed model. The proposed work indicates that the battery energy storage station and microgrid helps the utility grid to mitigate the photovoltaic solar generation variability.

**Keywords**—optimal scheduling, microgrid, battery energy storage station, BESS, solar generation, dynamic programming