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### DG - Grid Interfaced with Energy Storage Shunt Active Filter

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**Abstract** - Literature reported, the control of active and reactive power while compensating voltages of a distributed generation (DG )- grid interfaced with energy storage shunt active power filter (APF ). The APF control is based on reference current estimation in d-q reference frame. The proposed APF control system is capable for controlling the active power supplied by the distributed generation system while compensates load power factor (load reactive power ) and harmonics . The active power exchange is based on phase angle between AAPF inverter and grid voltages and reactive power control is based on magnitude of their voltages . The extensive simulation of the study is carried out under MATLAB / Simulink environment to show the effectiveness of the control algorithm. Various simulation results are presented with islanding and integrated mode ( forward and reverse flow ) of operation of distribution generation system with utility grid .