

Abstract

In recent years there has been a growing interest in moving away from large centralized power generation toward distributed energy resources. Solar energy generation presents several benefits for use as a distributed energy resources. One way of avoiding adding energy storage to a solar generation system while still maintaining high system utilization is to design the power conversion subsystem to provide fundamental reactive power compensation. This system's dual-purpose operation solves both the power generation need, and helps to subside the problem of reactive power to the distribution system.

One new inverter system is proposed for implementation of a Grid Interactive single-phase Inverter for Photovoltaic Applications, with the functions of rated power supply, fundamental Reactive power pumping. When the utility is in normal operation, the proposed system functions as rated power supply or fundamental reactive power source. When the utility supply is not available then this system would acts as Uninterruptible power supply.