**Abstract**

The dependence of human lives on electricity is at its peak. The present conventional central grid consisting integration of regional grids is a vast and complex network involving lot of difficulty to resolve faults and bringing stations back to synchronization even for experts support. Using microgrids we can decentralized central grid concept. A micro grid is a localized and self-sufficient energy system that is capable of generating, distributing, and managing its own electricity. Micro grids can also contain hybrid power generation stations. In this paper we supposed to develop a microgrid to supply a local load of less than 2 kW with solar PV generation as supplying unit. The supply obtained from the pv which is DC is followed by a DC-DC boost converter which is operated to give constant dc output with changing input coming from pv as irradiation and weather changes causes it to give non constant output. The DC-DC boost converter operates with MPPT algorithm of Perturb and Observe method to give constant and maximum power output. The converter then followed with a battery and an inverter. The bidirectional converter allows the flow of power from converter and battery in both directions to store energy during high power generation hours and to use stored energy in the battery during low power generating hours. The inverter which is followed after converter and battery converts dc supply to ac supply with duty cycle of 0.5. The inverter is then followed by a LC filter to obtain sinusoidal output by eliminating higher order harmonics. The filter followed by a transformer to step up the low input voltage to match the high output voltage which ac loads are operated on. The total System is modeled and the wave forms at every level is analyzed with different irradiation levels of PV array using Mat lab 2021.