

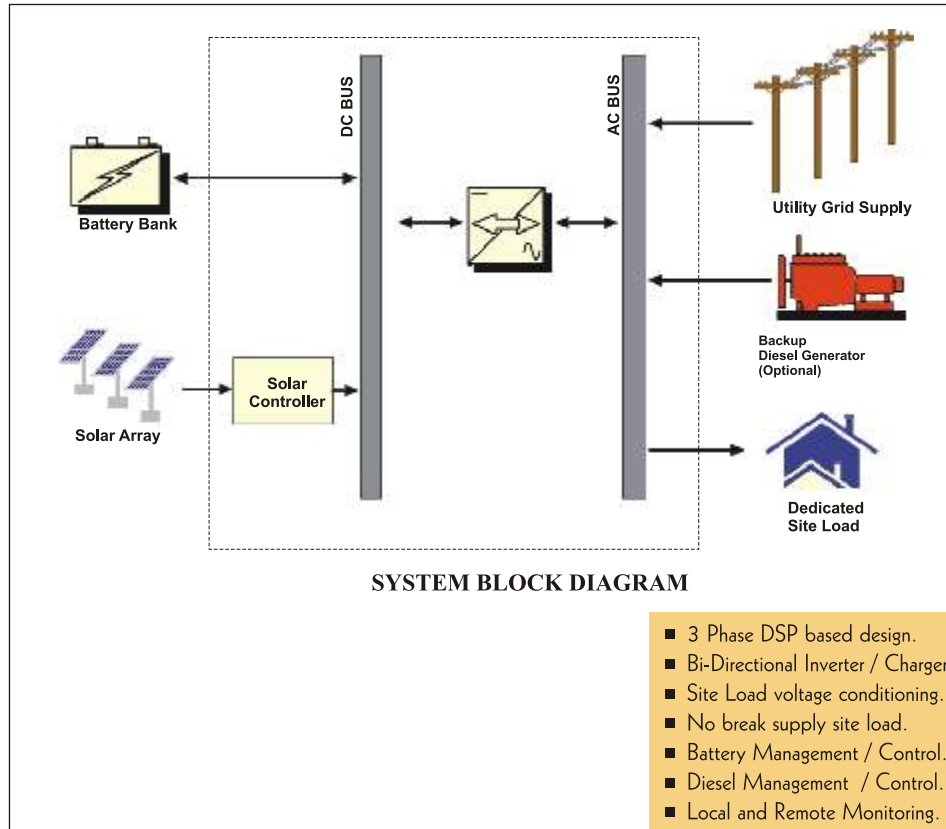


## GRID SUPPORT CONDITIONER

The 3 phase, DSP based Grid Supply Conditioner (GSC) system incorporates an utility supply connection and can also include a backup genset option if required. These two sources will never be online and supplying power at the same time.

It behaves as a single conversion, on line UPS whose output voltage is regulated to within 1% of its nominal value. The inverter module operates in parallel with the utility supply with the active power to the load being supplied by the utility or the inverter module depending on the availability of renewable resources. The voltage to the load is conditioned by virtue that the inverter is directly connected to the load at all times and its output voltage is fixed.

The GSC system can operate in a variety of modes, all under software control. The inverter module can support high peak, short duration loads while the online source (utility or genset) maintains the base load provided it is within its voltage and frequency limits.



If the utility supply was lost or move out of its preset voltage or frequency range, it will be taken off line and the inverter module will continue supply to the load with no break in supply. Energy from the load will come from the battery bank and any available renewable source connected to the DC link.

If the utility supply was lost for more than a pre-determined period and provided a backup diesel generator was available, it will be started and brought on line parallel with the inverter module as to supply the load and charge the battery bank.

Once the utility supply was to return back into its operating range for a predetermined time, then diesel generator will be taken off line and stopped. The inverter module will then connect back in parallel to the utility supply as to continue its normal operation.