CLAIMS

1. A triple input smart power supply for one or more electronic loads using DC as final power source functional from a predefined voltage range input with SPV (Solar Photo Voltaic) power provision and an automatic logic to prioritize solar, utility, and a battery in the preferred order, comprising:

a DC-to-DC ATX power supply for providing the predefined voltage range;

an AC-to-DC converter to generate 15V DC power supply from 230V AC using PFC techniques;

a switching logic circuit for automatically prioritize solar, utility, and a battery in a preferred order;

a solar panel of adequate capacity to supply power to the one or more electronic loads;

a battery for providing power back-up to the one or more electronic loads;

a voltage regulator and a current limited charger circuit for providing charging current to the battery; and

a display unit capable of working on the predefined voltage range,

wherein the switching logic circuit intelligently prioritize solar, utility, and the battery ensuring seamless changeover between the triple input sources to provide an uninterrupted power supply to the one or more electronic loads, and

wherein the one or more electronic loads comprises desktop Personal Computers (PCs), the predefined voltage range comprises 10 V to 16 V DC, the DC-to-DC ATX power supply comprises a 10-16V DC-DC ATX PC power supply, the solar panel comprises a range of 50-80 Wp for Standard Desktop PC, the battery comprises a 12V, 7 AH SMF battery, and the display unit comprises a LED/LCD PC monitor, and

wherein the triple input smart power supply produces a power saving of 1747200 units and thereby a cost saving of rupees 14.2 million for 10000 desktop PCs working for 8 hours per day for 312 days excluding the benefit from usage of solar energy, and savings of 24,96,000 units of energy and 20.47 million of rupees per annum if connected to the solar panel.

2. The triple input smart power supply as claimed in claim 1, wherein the DC-to-DC ATX power supply comprises solid state switching technology to provide efficiency greater than 90%.

3. The triple input smart power supply as claimed in claim 1, wherein the solar panel is capable of directly powering the one or more electronic loads.

4. The triple input smart power supply as claimed in claim 1, wherein the battery is charged from solar power or utility power or both based on the availability.

5. The triple input smart power supply as claimed in claim 1, further comprising a micro controller circuit for monitoring load power and providing status indication of the selected power source used and a remaining backup time.

6. The triple input smart power supply as claimed in claim 5, wherein the micro controller circuit provides information on the remaining backup time, and forces the one or more electronic loads to shut down when the battery is nearing exhaustion.

7. The triple input smart power supply as claimed in claim 1, wherein the triple input smart power supply saves 58% to 65% of power without the solar panel.

8. The triple input smart power supply as claimed in claim 1, wherein the desktop PC directly works on solar power and keeps the battery charged when operated between 10 am and 4 pm, thereby saving utility power during normal working hours, on reasonably sunny days.

9. The triple input smart power supply as claimed in claim 1, wherein the switching logic circuit enables to utilize even a smaller quantity of power developed in solar panel whereas balance power requirement is met from utility power source.

10. The triple input smart power supply as claimed in claim 1, wherein the charging current provided by the current limited charging circuit is determined based on an AH rating of the battery.

11. The triple input smart power supply as claimed in claim 1, wherein a back-up time of the desktop PC is increased to 80 to 110 minutes for standard desktop PC and a 12V 7 AH SMF battery.

12. The triple input smart power supply as claimed in claim 1, wherein the triple input smart power supply provides an efficiency of 90% which is incomparable with that of a normal SMPS whose efficiency is only 35%, when used along with an online UPS system.

13. The triple input smart power supply as claimed in claim 1, wherein the triple input smart power supply reduces harmonics injected to power line from UPS.

14. The triple input smart power supply as claimed in claim 1, wherein the triple input smart power supply provides an improved power factor.

15. The triple input smart power supply as claimed in claim 1, wherein the triple input smart power supply is capable of using a battery with different capacity and/or technology resulting in different backup times.

16. The triple input smart power supply as claimed in claim 1, wherein the solar panel comprises a high power solar panel array when a large number of desktop PCs and electronic loads need to work under one roof from a common low voltage DC (<21V) power bus.