According to the US Department of Energy, the “smart grid” generally refers to the class of technologies being introduced to bring utility electricity delivery systems into the 21st century, using autonomous control. The smart grid concept is often predicated on the widespread evolution of autonomous microgrids. The main envisioned features of the future distributed microgrid system include: automatic controls for electric power at the customer side, a power distribution infrastructure that encourages renewable energy development, local energy storage, and customer loads that are capable of responding to changes in the grid. This paper presents a model collection of PV array (PV), wind turbine (WT), vanadium redox battery (VRB), fuel cell (FC), diesel generator (DG) and inverters and the control technique that incorporates them to microgrid framework.