

CHAPTER 1

INTRODUCTION

Due to increase use of electronic consumer goods the power demand has extensively increased over the last decade. The use of fossils increased to meet the consumer which has led to extension of fuel. This has led to emerging of new concept called 'green energy'. Green energy includes use of many renewable resources such as solar and wind energy. Also many technologies have been developed to efficiently make use of these resources such as photovoltaic nanowires and wind turbines.

Here we present a unique and economic way of harnessing natural resources by using small but multiple wind turbines. The energy that can be generated is sufficient enough to be used for experimental purposes. The energy generated and stored is sufficient enough to be used for analog electronics and microcontroller laboratory.

The energy is initially generated at around 9V. The generated power is stored in the batteries preferably Li-ion batteries because of their low self-discharge. Then the stored energy is boosted up to 12V and then can be utilized directly as per the requirement or can be inverted to get 220V ac. There is also a provision to tap 5V supply that is required for digital application. The other devices which can be used to light the LED panels which have very high luminosity and high efficiency.

The first stage consists of generation and storage. Here energy from wind source is collected and stored. The second stage consists of boost. Here the required voltage is achieved for inverting. The next stage consists of regulator circuits for multiple taps to utilize for digital applications.