Abstract

Energy and environment are the most important aspects of human development. Power generation causes ecological imbalances like earthquakes, drought and pollution. It is possible to slow down the damage to nature by conserving energy and by utilizing natural resources. Renewable energy sources, their importance, feasibility, advantages and disadvantages are thoroughly discussed.

Consumers can be classified into industrial, agricultural and domestic categories. These three sectors account for about 85% of the total energy consumption and any conservation policy applied in these areas has a great impact on the entire energy sector. In this thesis, attention has been paid to quality, cost and reliability, while adopting various methods for energy conservation in all the three areas. A generalized approach for energy audit is proposed with a checklist for various industries. A case study on textile industry is presented as an example, which can be applicable to almost any industry in India with slight variation.

Modern methods are suggested for agricultural sector like drip irrigation and system of rice intensification, which results in lesser water requirement, thus reducing demand for energy.

In the domestic front, various methods are suggested to reduce energy consumption without sacrificing present comfort level. Various electrical gadgets which are common now a days are critically reviewed and suitable suggestions are made to reduce consumption.