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# Power Plant

Power plant is a unit builds for production and delivery of electrical energy. In common usage, a machine or assemblage of a equipment that produces and delivers flow of mechanical or electrical energy. Hence, an internal combustion engine is a power plant.

However, what we generally mean by term is assemblage of equipment, permanently located on some chosen site which receives raw energy in the form of substance capable of being operated on in such a way as to produce electrical energy for delivery from power plant.

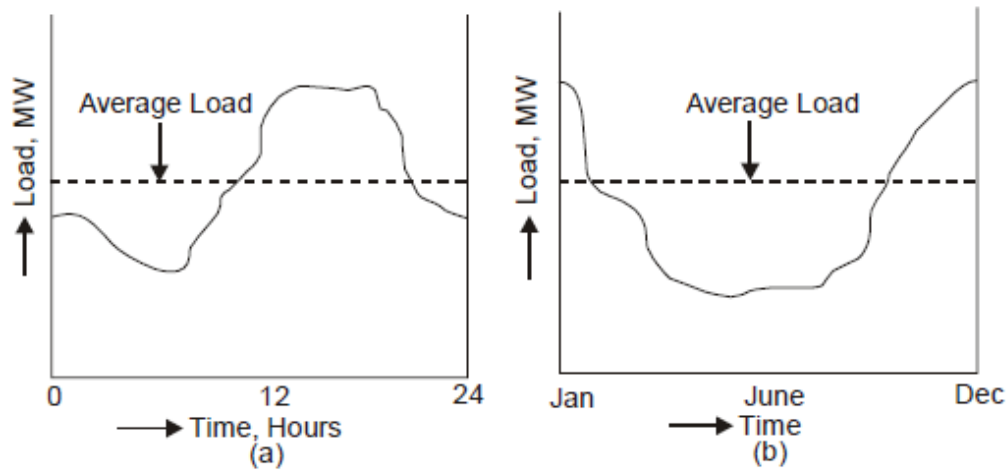
With advancement in technology the power consumption is rising steadily. This necessitates that in addition to existing sources of power such as coal, water, petroleum etc. other sources of energy should b researched out and new and more ways of producing energy should be devised.

## **Sources of Energy**

The various sources of energy are:

## **Load Curve:**

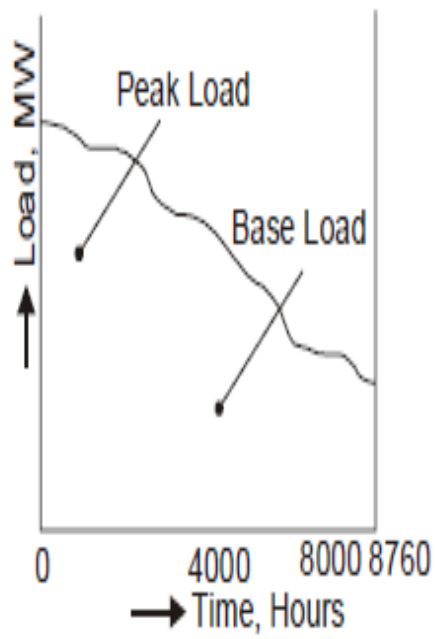
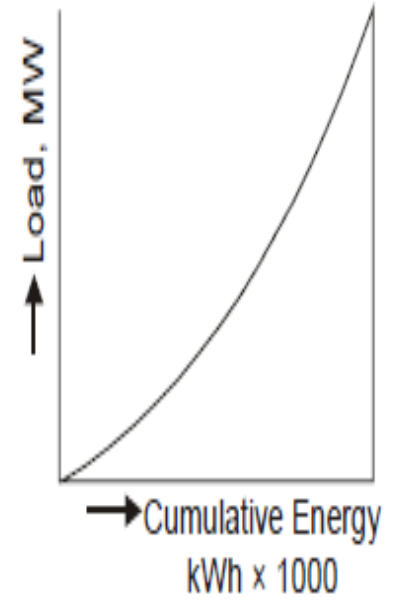
The load demand on a power system is governed by the consumers and for a system supplying industrial and domestic consumers, it varies within wide limits. This variation of load can be considered as daily, weekly, monthly or yearly. Typical load curves for a large power system are shown in Fig. 1.



**Fig. 1.** Chronological Load Curves (a) Daily Load Curve (b) Yearly Load Curve.

### **IDEAL AND REALIZED LOAD CURVES:**

From the standpoint of equipment needed and operating routine, the ideal load on a power plant would be one of constant magnitude and steady duration. However, the shape of the actual load curve (more frequently realized) departs far from this ideal, Fig. 3. The cost to produce one unit of electric power in the former case would be from 1/2 to 3/4 of that for the latter case, when the load does not remain constant or steady but varies with time. This is because of the lower first cost of the equipment due to simplified control and the elimination of various auxiliaries and regulating devices.

**Fig. 3.** Load Duration Curve.**Fig. 4.** Energy Load Curve.