

Need for energy conservation in India

The increasing demand for power has led to considerable fossil fuels burning which has in turn had an adverse impact on environment. In this context, efficient use of energy and its conservation is of paramount importance. It has been estimated that nearly 25,000 MW can be saved by implementing end-use energy efficiency and demand side management measures through out India. Efficient use of energy and its conservation assumes even greater importance in view of the fact that one unit of energy saved at the consumption level reduces the need for fresh capacity creation by 2 times to 2.5 times. Further, such saving through efficient use of energy can be achieved at less than one-fifth the cost of fresh capacity creation. Energy efficiency would, therefore, significantly supplement our efforts to meet power requirement, apart from reducing fossil fuel consumption.

The economic development of a country is often closely linked to its consumption of energy. Although India ranks sixth in the world as far as total energy consumption is concerned, it still needs much more energy to keep pace with its development objectives. India's projected economic growth rate is slated at 7.4 per cent during the period 1997-2012. This would necessitate commensurate growth in the requirement of commercial energy, most of which is expected to be from fossil fuels and electricity.

India's proven coal reserves may last for more than 200 years, but the limited known oil and natural gas reserves may last only 18 years to 26 years, which is a cause of concern. The continued trend of increasing share of petroleum fuels in the consumption of commercial energy is bound to lead to more dependence on imports and energy insecurity.

India's energy intensity per unit of GDP is higher as compared to Japan, U.S.A. and Asia by 3.7 times, 1.55 times and 1.47 times respectively. This indicates inefficient use of energy but also substantial scope for energy savings. The increasing global trade liberalisation and growing global competition have made productivity improvement, including energy cost reduction, an important benchmark for economic success. Therefore, a paradigm shift in our approach to energy policy issues is needed – a shift from a supply dominated one to an integrated approach. This integrated approach would have to incorporate a judicious mix of investment in the supply side capacity, operational efficiency improvements of existing power generating stations, reduction of losses in transmission and distribution, end-use efficiency and renewable technologies.

The policy goals and concepts would have to be shifted from "energy conservation" to "energy efficiency", and from "energy inputs" to the "effectiveness of energy use" and "energy services". Creation of new power generation capacity is costly and necessitates long gestation period whereas energy efficiency activities can make available additional power at comparatively low investments within a short period of time.

Need of Energy Conservation in Maharashtra:

Energy conservation avoids wasteful use of energy without much investment. It can be termed as a new source of energy, which when available, can be readily used without any further loss or gestation period. It is the cheapest source of energy. In fact, it is the easiest solution to bridge the gap between demand and supply. Some other reasons are:

1. Increasing energy demand in India is a drain of the national economy. Besides, it is a major factor hindering the competitiveness of basic Indian industries in the global market. Thus, energy conservation is equally important for the nation and industrial firms.
2. Electrical power is one of the scarce resources in our country. Generation of electricity is very capital intensive. 1 MW of power generation costs approximately Rs. 4 crore because of the low plant load factor and high transmission losses prevalent in the country. The installed capacity of power station has to be therefore, 2.2 times the electrical load.

Energy saving achieved through energy efficiency and conservation also avoids capital investment in fuel, mining, transport, water and land required for power plant, thereby mitigating environmental pollution.

At present, there is a gap of 4000 MW between demand and supply of the electricity in the State of Maharashtra. To install 4000 MW capacity, the requirement of capital is of the order of approximately Rs.16,000 crore. Gestation period for setting up new power projects is of the order of approximately 4 years to 5 years. Hence, the energy conservation measures provide cheapest way to bridge the demand and supply gap with minimum capital investment. It also improves the plant load factor of generating stations which helps to reduce the cost of electricity.

Maharashtra is one of India's leading industrial states. It has about 29,562 industries of which around 10,000 HT industries are established within it. Also, Maharashtra is the largest producer of electricity in the country. Hence, there is a huge potential for energy saving in all sectors which is near about 3,000 MW