
CHAPTER III

DISCUSSION

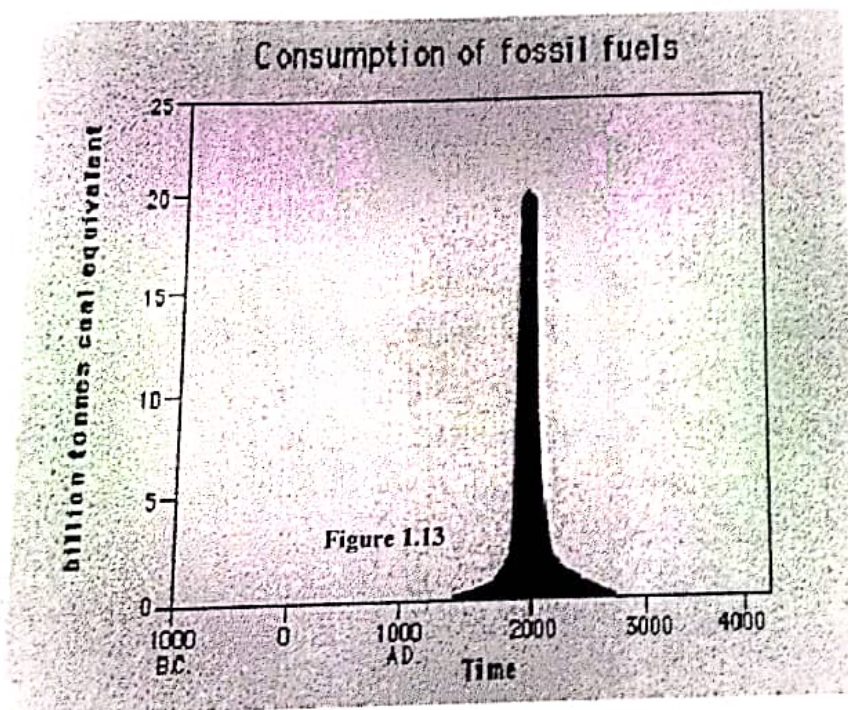
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Energy Conservation and its Importance

Coal and other fossil fuels, which have taken three million years to form, are likely to deplete soon. In the last two hundred years, we have consumed 60% of all resources. For sustainable development, we need to adopt energy efficiency measures. Today, 85% of primary energy comes from non-renewable, and fossil sources (coal, oil, etc.). These reserves are continually diminishing with increasing consumption and will not exist for future generations



What is Energy Conservation?

Energy Conservation and Energy Efficiency are separate, but related concepts. Energy conservation is achieved when growth of energy consumption is reduced, measured in physical terms. Energy Conservation can, therefore, be the result of several processes or developments, such as productivity increase or technological progress. On the other hand Energy efficiency is achieved when energy intensity in a specific product, process or area of production or consumption is reduced without affecting output, consumption or comfort levels. Promotion of energy efficiency will contribute to energy conservation and is therefore an integral part of energy conservation promotional policies.

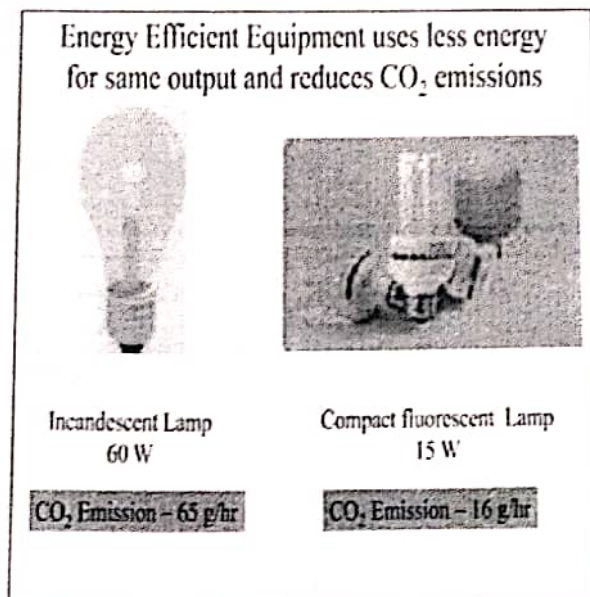


Figure 1.14

Energy efficiency is often viewed as a resource option like coal, oil or natural gas. It provides additional economic value by preserving the resource base and reducing pollution. For example, replacing traditional light bulbs with Compact Fluorescent Lamps (CFLs) means you will use only 1/4th of the energy to light a room. Pollution levels also reduce by the same amount (refer Figure 1.14).

Nature sets some basic limits on how efficiently energy can be used, but in most cases our products and manufacturing processes are still a long way from operating at this theoretical limit. Very simply, energy efficiency means using less energy to perform the same function. Although, energy efficiency has been in practice ever since the first oil crisis in 1973, it has today assumed even more importance because of being the most cost-effective and reliable means of mitigating the global climatic change. Recognition of that potential has led to high expectations for the control of future CO₂ emissions through even more energy efficiency improvements than have occurred in the past. The industrial sector accounts for some 41 per cent of global primary energy demand and approximately the same share of CO₂ emissions. The




Energy Efficiency Benefits		
		
Industry	Nation	Globe
<ul style="list-style-type: none"> • Reduced energy bills • Increased Competitiveness • Increased productivity • Improved quality • Increased profits ! 	<ul style="list-style-type: none"> • Reduced energy imports • Avoided costs can be used for poverty reduction • Conservation of limited resources • Improved energy security 	<ul style="list-style-type: none"> • Reduced GHG and other emissions • Maintains a sustainable environment

Figure 1.15

benefits of Energy conservation for various players are given in Figure 1.15.

Energy Strategy for the Future

The energy strategy for the future could be classified into immediate, medium-term and long- term strategy. The various components of these strategies are listed below:

Immediate-term strategy:

- Rationalizing the tariff structure of various energy products.
- Optimum utilization of existing assets
- Efficiency in production systems and reduction in distribution losses, including those in traditional energy sources.
- Promoting R&D, transfer and use of technologies and practices for environmentally sound energy systems, including new and renewable energy sources.

Medium-term strategy:

- Demand management through greater conservation of energy, optimum fuel mix, structural changes in the economy, an appropriate model mix in the transport sector, i.e. greater dependence on rail than on road for the movement of goods and passengers and a shift away from private modes to public modes for passenger transport; changes in design of different products to reduce the material intensity of those products, recycling, etc.

- There is need to shift to less energy-intensive modes of transport. This would include measures to improve the transport infrastructure viz. roads, better design of vehicles, use of compressed natural gas (CNG) and synthetic fuel, etc. Similarly, better urban planning would also reduce the demand for energy use in the transport sector.
- There is need to move away from non-renewable to renewable energy sources viz. solar, wind, biomass energy, etc.

Long-term strategy:

- Efficient generation of energy resources
 - Efficient production of coal, oil and natural gas
 - Reduction of natural gas flaring
- Improving energy infrastructure
 - Building new refineries
 - Creation of urban gas transmission and distribution network
 - Maximizing efficiency of rail transport of coal production.
 - Building new coal and gas fired power stations.
- Enhancing energy efficiency
 - Improving energy efficiency in accordance with national, socio-economic, and environmental priorities
 - Promoting of energy efficiency and emission standards
 - Labeling programmes for products and adoption of energy efficient technologies in large industries
- Deregulation and privatization of energy sector
 - Reducing cross subsidies on oil products and electricity tariffs
 - Decontrolling coal prices and making natural gas prices competitive
 - Privatization of oil, coal and power sectors for improved efficiency.
- Investment legislation to attract foreign investments.
 - Streamlining approval process for attracting private sector participation in power generation, transmission and distribution .