

# Energy Conservation Practices-A Little Contribution for Environment Safety



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**Abstract** -Coal and other fossil fuels, which have taken million years to form are depleting soon. For sustainable development and to achieve future energy security we need to adopt energy conservation techniques. Energy conservation is a concept related to Eco-sufficiency. Energy conservation can help in achieving better environmental quality, energy security, energy savings and personal financial saving. Energy conservation is a faster and only mean of efficiently handling growing supply problems. This paper focuses on energy conservation its importance and basic measures to achieve energy conservation in day to day life.[1]

**Keywords**- Energy conservation, Energy demand, consumption.

## I. INTRODUCTION

Energy conservation is the effort made to reduce energy consumption by using less energy services but without affecting output and consumer facility. Energy conservation is related with energy consumption. In order to achieve energy conservation energy consumption must be reduced. Energy conservation can be easily achieved by adjusting day to day behaviour, habits and by adopting simple conservation techniques. Energy conservation is a simple practice of using less energy. Energy conservation is the process of reducing energy demand on a limited supply.

## II. IMPORTANCE OF ENERGY CONSERVATION

We have already consumed most of the conventional resources and without conservation they will deplete soon. While some people do not understand the critical issue because they think resources will take many years to deplete and till than alternate energy source will be available. The Energy conservation is not limited up to using less energy but it is a concept related with the environment protection and environment safety. There are two important reason of energy conservation-1) Environment safety:-The burning of fossil fuels like coal released pollutants like smoke, ashes and harmful gases when they mix with air and water they adversely affect whole eco-system. The marine life, plants, soil and human bodies are badly affected by such pollutants. The energy conservation focuses on reduction in energy demand so it helps directly to control fossil fuel consumption and reduce emission of pollutants by fossil fuel combustion contribute directly in protecting the environment from the effect of such pollutants.

2) Reduction in fossil fuel consumption:- Many power plants use coal, diesel and gases as a fuel for power plant for electricity generation. Power plant is dealing with a problem of full filling the raising demand. The coal, diesel and gases are extracting from the earth at much faster rate in order to meet the energy requirement. Second the number of vehicle on road is rising day by day as population increases which requires gasoline product as an input fuel. The gasoline product is extracting from the earth in order to meet the vehicle fuel requirement. In the absence of fossil fuel world could come to stand still. The fossil fuels are depleting soon in order to prevent them for future generation and to prevent the world from energy crises conservation of fossil fuel is important. The energy conservation reduces fossil fuel consumption by reducing demand.[1]

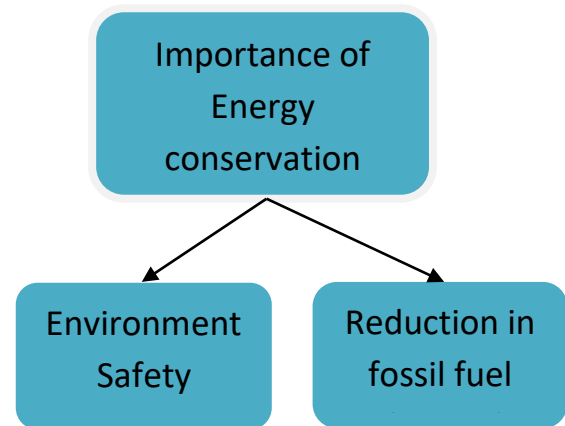


Fig.1

## III. BENEFITS OF ENERGY CONSERVATION

There are several benefits of energy conservation:-

- 1) Reduced energy taxes-Some countries have decided baseline limit of energy consumption if consumption exceeds that limit the consumer has to pay heavy tax. Energy conservation slows down the rate of energy consumption which results in reduced energy taxes.[3]
- 2) Reduced carbon taxes-Energy conservation motivates consumer to use energy sources which emits less carbon dioxide. So carbon tax of consumer is reduced.
- 3) Reduced energy bills: Each unit of energy(electricity) is chargeable. The energy consumption is charged as per fixed tariff. The consumption of less energy results in reduction in amount of energy bills.
- 4) Less energy imports-Since energy consumption rate is reduced and due to conservation of natural resources. The import of coal and other sources can be significantly reduced. [1]

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- 5) Reduced GHG emission- Humans are burning coal, oil and natural gases as fuel for energy generation which releases green house gases. The green house gases level in atmosphere is increasing at an alarming rate. By adopting energy conservation practices amount of combustion of fuel is reduced, which surely control green house gases emission and other pollutants.
- 6) Conservation of natural resources-Energy conservation helps us to conserve our natural reservoir for future generation.[1]
- 7) Energy security-Energy conservation motivates to consume less energy by controlling demand, by controlling demand it reduces the chances of shortage of electricity.
- 8) Economic-There is no requirement of huge investment for adopting energy conservation techniques.
- 9) Sustainable energy generation-The form of energy that meet current energy requirement without putting resources in to the risk of depletion and can be used again and again is known as sustainable energy generation. The energy conservation limit the use of fossil source and focuses on the use of renewable energy sources to meet energy demands. In this way energy conservation supports sustainable energy generation.
- 10) Positive message to society-When we adopt and share energy conservation measures and its benefits with our neighbours, friends, awareness about such things increases and it brings positive impact on society to jointly contribute in energy conservation and protect environment and resources.
- 11) Risk management-The present scenario of growing demand, limited resources, and less awareness about energy conservation measures and about available alternative resources increases the risk of shortage of resources and supply. The energy conservation by reducing demand and limiting usage of resources managing the risk of shortage.

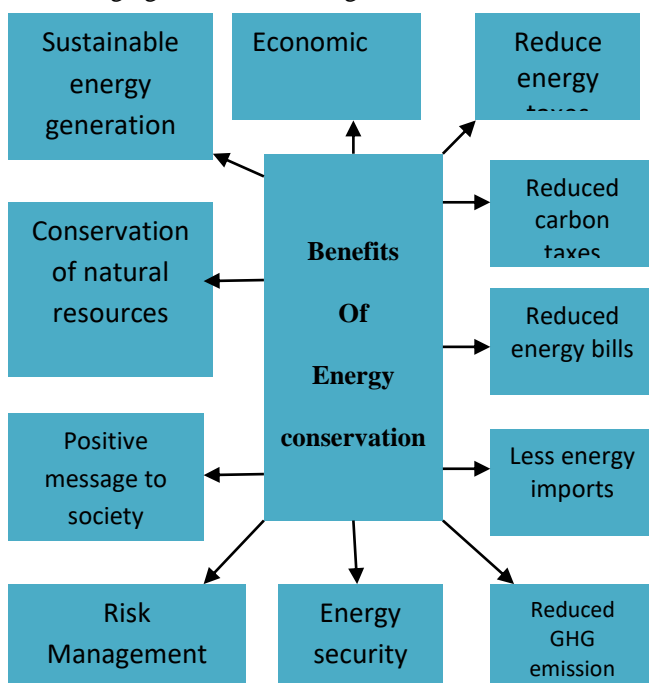


Fig.2. Block diagram of benefits of energy conservation.

#### IV. PROPOSED METHODS TO ACHIEVE ENERGY CONSERVATION

Energy conservation is achieved simply by adopting some techniques in day to day life.

- 1) We can save energy by adopting use and purchase of energy saving appliances.[2]
- 2) We can save energy by use of direct sunlight for drying of clothes instead of drying in dryer.
- 3) We can save energy by turn off lights, fans and computer and equipments when not in immediate use.
- 4) We can save energy by replacing traditional light bulbs with CFLs and LEDs.
- 5) We can save energy by limiting the use of heater during winter. Instead of continuous use of heater we can use direct sunlight to get heat.
- 6) We can save energy by using solar lamps for garden lighting and solar tube lights for street lightening.
- 7) We can save energy by use of public transport. Drive less. It helps to prevent release of carbon footprint.
- 8) We can save energy by use of smart power strips to eliminate the problem of electricity use by electronics in standby or switch off condition.
- 9) We can save energy by insulating home it helps to retain heat during winter and keeping heat out of home during summer. The recommended level of heat resistance or R-value decides insulation level for home and it depends on place of living. It helps in lowering utility bills.
- 10) We can save energy by sealing air leaks (cracks).You should ensure that there are no cracks around walls, windows and door opening .This cracks or small opening is known as air leaks. Sealing air leaks help us to reduce cooling and heating expenses. Through this air leaks natural flow of air gets disturbed.
- 11) We can save energy by proper ventilation and windows in home and offices.
- 12) We can save energy by installing a programmable thermostat which can be set to automatically turn off appliances during the times when not in use.
- 13) We can save energy by turning off light during day and use direct sunlight.
- 14) We can save energy by energy auditing of home. Energy audit simply identifies areas in home where energy is losing and what measures should be taken to prevent the losses. Expert's advice helps us to prevent losses and adoption of conservation techniques.
- 15) We can save energy by turn off the refrigerator during winter seasons. New refrigerator contains hydro fluoro carbons(Hfcs) which contributes in GHGs emission.
- 16) We can save energy by replacing old equipments with newer one. Old equipment requires more energy to perform work.
- 17) We can save energy by proper adjustment of ac temperature.

## V. RESULT

The energy demand is reduced to some extent by adopting energy conservation methods. The day to day contribution by consumers in energy saving will surely control the growing energy issues and environmental problems.

Energy conservation is a decision to save energy and conserve resources and prevent environment, it can be achieved effortlessly by increasing awareness among consumers and encourage consumers for adopting simple conservation techniques. It can be achieved by self commitment to contribute daily in energy saving.

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