

## Importance of Electricity in our Daily lives and its impact on Modern Society

Generally, energy is the basic necessity for the economic development of a country. Many functions necessary to present day stop when the energy supply is interrupted. It is practically impossible to estimate the actual magnitude of energy played its part in the building of present-day development. The availability of huge amount of energy is due to the consumption of human effort and getting higher agricultural, industrial production. The greater the per capita consumption of energy in a country, the higher is the standard of living of its people.

Energy exists in the different form in nature but the most important form of energy is electrical energy. The modern days are more dependent on the use of electrical energy which is almost become a part of our life.

### Importance of Electrical energy

Energy may be needed as heat, light, as motive power etc. The present-day advancement in science and technology has made it possible to convert one form of energy to another desired form of energy. Electrical energy is superior to other forms of energy due to the following reasons.

- **Convenient form:** Electrical energy is a very convenient form of energy compared to the other form of energy. Because it can be easily converted from one form to the desired form of energy. For example, if we need to convert electrical energy into heat energy. It requires only to pass the electrical energy through high resistive wire e.g. heater. Similarly, if we want to convert electrical energy into light energy, we will use an electric bulb, electrical energy to mechanical energy through electric motors etc.
  - **Easy control:** The electrically operated machines have very simple and convenient technique to control and operate. For example, an electric motor can be started or stop just by using a switch. Similarly, with a simple arrangement, we can control the speed of an electric motor in a range.
  - **Flexibility:** The most important factor of the superiority of electrical energy over other forms of energy is the flexibility that it provides. It can be easily transferred from one location to other location with the help of conductors.
  - **Less expensive:** Electrical energy is the most economical form of energy among over all forms. It is much cheaper than other energies. It can be widespread use for a domestic, industrial and commercial purpose.
  - **Higher transmission efficiency:** The consumers of electrical energy are generally situated at a distance from the generation center. The electrical energy can be easily transmitted from the generation center to the consumers with the help of overhead transmission lines very conveniently and efficiently.
- What are the possible and available energy sources for the production of electrical energy?
- Electrical energy is produced from a different form of energy available in nature. It is important to overview the sources of energy.
- **The sun:** Sun is the ultimate source of energy in this world. This is also considered as the primary source of energy. The sun radiates its energy in the form of light and heat. This heat can be used to raise steam and electrical energy can be produced by the turbine and alternator combination. But it requires a lot of areas even to produce a small amount of energy. It cannot be used on cloudy days or at night. Nevertheless, there are some locations in the world where this method is very efficient and economical and used very common because its running cost is almost nothing.
  - **The wind:** This source of energy can be used where only the wind flows for a considerable length of time. The wind energy is used to run a small generator. In order to get the electrical

energy continuously, batteries are connected with generators, which provides electrical energy when the wind stops. This method has very negligible maintenance and running cost. But the energy produced from the wind is very small. Its output is variable.

- **Water:** When water is stored in a suitable location. It possesses some potential energy due to the head created. Now if we want to use this water head, we need to convert this potential energy into mechanical energy and then into electrical energy with the help of turbine, alternator combination. This method of electrical energy production becomes very popular all over the world due to low production and maintenance cost.
- **Fuels:** Minerals are the most important sources of energy production. Like solid fuel as coal, liquid fuel as oil and gas fuel as natural gas. The heat energy is produced from these sources can be converted to mechanical energy by the use of the suitable steam engine and steam turbine. Then it is converted into electrical energy. Although we are consuming the fuel very regular to produce electrical energy their reservoirs are diminishing day by day. The use of fuel produces waste in a result which can pollute the environment in different shapes.
- **Nuclear energy:** By the use of nuclear weapons in the world war second. It was discovered that nuclear fuel can liberate a high amount of heat energy by the fission of uranium and fissionable materials. It is estimated that 1kg of nuclear fuel can produce heat energy equal to the heat energy produced by 4500 tons of coal. The heat produced by the nuclear fuel can be used to raise the steam and then it is converted into mechanical and electrical energies respectively by the use of turbine and alternator combination. The lack of using nuclear energy for the production of electrical energy is its limitations. The biggest problem of disposal of the waste produced from the nuclear fuel.