Renewable Sources of Energy

Synopsis: Conventional sources of energy like coal, petrol, lignite and natural gas are limited and may soon be exhausted. Moreover, their use is not environmental friendly. Their use causes lot of emission of carbon and change in global climate. The use of these fossil fuels be decreased and those of renewable sources of energy increased to protect our earth and the quality of life, The renewable sources of energy like wind, solar tidal waves, biogas etc. hold a great potential Renewable source of energy are becoming more and more popular. For example, there has been increased use of wing power in Germany and India. Non-conventional sources of energy are cheap, clear and environment friendly and available locally in abundance in India. There is vast scope for the use of bio-gas in India villages. Solar energy generation also holds great promise as there is much bright sunshine during the greater part of the day throughout the year. The wind power generation is also increasing in the country and thousands of wing-pumps have been installed for irrigation and drinking water and more are being installed.

There is an ever-increasing demand for energy and the non-renewable or conventional sources of energy are depleting fast. Energy is the motive power that keeps wheels of industry moving and other things live and dynamic. Fossil fuel which includes coal, lignite, petroleum and natural gas is the non-renewable energy is fuel wood, fuels, these conventional sources of energy are not sufficient to meet our fast-increasing demand of energy as they are limited and may soon get exhausted.

The use of conventional sources of energy creates environmental problems. The increased use of fossil fuels increases carbon emissions and quickens global climate change. The energy produced through these traditional fuels causes global warming, air pollution, depletion of forests and hose of other ecological problems. The carbon dioxide emission in developing countries has jumped by about 35 percent in recent years. The pollution continues to worsen in many cities of the world with 1.3 billion persons affected by poisonous air and many species of plant and bird-life continued to be lost rapidly. Therefore, there is an urgent need to discourage the use of traditional sources of energy and rapid phase out of subsidies on these. The subsidies on fossil fuels have dropped by 50 percent since 1992, but still it stands at $58 billion. These subsidies harm the environment and hasten the depletion of these resources.

During 1995 there was oil production to the tune of 3,031 million tonnes, that of coal 2,109 million tonnes and that of natural gas 2,114 million tonnes. It shows an increase of about one percent over the year 1994. Even this marginal increase was enough to push carbon emission from fossil fuels to a new record. As we are approaching a new millennium, we must step up our efforts to reduce the use of these fossils fuels and protect the environment. It is essential that the use of the future of the planet earth and the quality of life here.

The renewable sources of energy like solar, wing, tidal waves, biogas etc. hold a great potential. There is a vast scope and many opportunities in this sector of power-generation. Their use so far has been limited to non-commercial and small domestic purposes in India and elsewhere. Modern since, technology, research and development have to play a significant in popularizing the increase use of non-conventional sources of energy both in industrial and domestic sectors. These are bound to be used on a larger scale in a course of time but this course of time should be curtailed and things expedited. There are really many very promising technologies and can very easily replace conventional ones. In the long term, they are likely to prove cost effective as well.

The facts and figures available in regard to the use of renewable sources of energy are really encouraging as they point towards greater and expanding rile of their resources. Growth in wind generation was once confined to the US and Denmark and India. During 1995 Germany produces 505 MW of wind energy followed by India with 375 MW.

The conventional sources of energy in India provide over 95 percent of our required energy. The fast depletion and scarcity of fossil fuels in our country underline the urgent necessity for developing and exploiting these non-conventional and renewable sources of energy which are really clear, environment-friendly and in a sense unlimited. Local availability of the renewable sources of energy in abundance make them all the more significant for meeting our rural energy requirements, these hold our major promise to overcome energy crisis in rural areas to a large extent. Since tidal waves resources are limited only to a few coastal regions, greater emphasis should be laid on harnessing wind power, solar energy and development of biogas and biomass project. Biogas can be increasingly used as a cooking fuel in towns and villages since it is cheap, clean and convenient. It can also be used for lighting and running small motors for providing power to cottage industries. The slurry from biogas is also an enriched manure. Family size biogas plants have picked up in many States like Tamil Nadu, Maharashtra, Andhra Pradesh etc. During the Eighth Plan, 7.5 lake

more plants were planned to be erected. The Plan also aimed at popularizing the use of human excreta in the biogas plants.

Solar energy generation holds great promise in the country. It is estimated that total solar isolation or exposure to the rays of the sun per square meter surface is quite high in India. For greater part of the year during the day there is much bright sunshine throughout the country and it can be used to our great advantage to produce pore for industrial and domestic use. During the Seventh Five Year Plan manufacturing bases for thermal devices like solar cookers and solar heating systems have been largely developed. Preparatory plant work for a solar thermal power plant in Rajasthan was completed. During the Eighth Plan the use of solar Thermal Energy for industrial water heaters, solar cookers, solar timber kilns, solar desalination etc. were to be commercialized. Similarly, solar photo voltaic cells, indigenous produced at BHEL and Central Electronics Ltd. Are being increasingly used under the Rural Electrification Program in the remote villages where it is not possible to carry the electric lines. During the Eighth Plan, development of amorphous silicon cell was to be the main thrust area. Power generation system of 10 to 100 KW capacity area being undertaken wherever this renewable source of energy is available.

Steps have also been taken to harness the wind energy. Under a major demonstration program on wind energy, 32 MW capacity wind farms were set up in Tamil Nadu, Gujarat, Maharashtra and Odisha. BHEL has already developed wind machines with 200 MW capacities. With the entrance of private sector in the field, the use of wind energy has got the tremendous boost in recent years. During the Seventh Plan itself 2,540 wind pumps were installed. The Eighth Plan had the target of 100 MW wind power generation by using indigenous wind machines. The operational program of wind pumps for drinking water and irrigation is expanded and modified.