Afforestation – the Indian answer to energy needs

As carbon dioxide (CO_2) levels increase and global temperatures begin to rise, polar ice caps will melt and bring in the pralaya (devastation, as predicted in old Hindu Scriptures). Afforestation, which will make plants and trees absorb the excess CO_2, is being looked at as one of the healthier ways of postponing this pralaya for some time

The Current Scenario

Electrical energy consumption is bound to skyrocket in India in the years to come. Production of electricity and distribution is a major concern for the government and part of the infrastructure development plans. The current method of producing power by burning fossil fuels is leading to increase in CO_2 levels in the air, and creating greater fears of the greenhouse effect.

Atomic energy was touted as a safe alternative. But, today it is being considered to be very dangerous option. The Chernobyl experience is a good example. A delay of less-than-90-seconds in computer warning to shut down the reactor led to the total destruction of the nuclear power station. Besides, waste management is a serious problem in nuclear energy production. There is a considerable amount of anxiety regarding the health effects from nuclear power. Recently, the USFDA declared Gamma and X radiation as potential carcinogens. Therefore, even if the principle of ALARA (exposure as low as reasonably achievable) is followed strictly in nuclear power plants, the number of cancer cases among the employees in nuclear power plant is higher compared to the general population.

Waste generated from such plants contain many long half-life radioactive isotopes, which are potential carcinogenic. Unfortunately, cancer is only controllable and cannot be cured. Chemotherapy delays the process, but the patient has to undergo pain to survive. The dangerous option of generating electricity from nuclear power plants is not recommended from the human health point of view.

Social Forestry-based Energy Production

A 10-kW pilot power plant is being run successfully in some villages in Karnataka for the last few years. In a 4-acre plot, trees are grown, whose branches are harvested selectively without stopping the growth of the trees. The wood from the branches are made into chips and dried in the sun. Wood gas is produced from the chips in a gasifier plant. This gas is used to run a modified diesel generator. With this energy, the villagers run a flour mill and generate lighting and piped water supply for all hoses in the village. The project is able to generate employment for some of the villagers. The added advantages of this mode of energy production are reduced soil erosion, proper rainfall and greenery all around. This is because of the efforts of ASTRA scientists at IISC Bangalore.

According to the Kyoto protocol on environmental science any organization reducing CO_2 levels in the air significantly around the globe will be paid for it through a mechanism called carbon credits.

The process of photosynthesis is the most efficient way to achieve conversion of solar energy into chemical bond energy. India is blessed with sunshine throughout the year. Genetically engineered plants may be able to grow at much faster rate. Social forestry based energy production will thus generate the necessary carbons credits with ample electricity. India is a country of many villages, and this scene is not going to change for many years to come.

The consequences of making newer nuclear reactors may be beneficial to India in the short run. But, in the long run it will be better for countries such as the US and those in the West. Global warming will come down because India will be depending more on nuclear power than burning fossil fuels for its growing power needs.

The plowshare project was dropped by the American government on the advice of experts only because it will increase cancer cases in the US. The USFDA has declared that Gamma and X radiation are potential carcinogens. In India, health damage litigations are not popular, and litigations are time-consuming.

Recently greens like Lovelock have preferred nuclear energy. The argument given by Lovelock may hold good for advanced countries with good infrastructure facilities, but it is not appropriate to a developing country like India. Burdened with a huge illiterate and naïve population and poor or overutilized infrastructure network, India must think what is possibly good for itself. One nuclear accident will mean and end to the public sector financial system.

Mega investments in big nuclear projects should be rerouted to social forestry-based decentralized small and tiny projects to give better results. This is one of the many ways of achieving sustainable energy production without many hazards.

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Reference Book:

Indian National Science Academy
April 2006