

# FOR SAFE ENERGY

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Speaking at the meeting of the Energy Coordination Committee in August, 2005 Prime Minister Dr Manmohan Singh said, “Atomic energy will have to play a much larger role in the future in our quest for energy security... The increased production and consumption of energy is likely to result in adverse consequences for the environment, and human health. We need therefore to give careful consideration to the adoption of renewable sources of energy and energy efficient clean technologies, to the extent financially feasible.” This statement of the Prime Minister is welcome. But it hides a serious flaw. While speaking of nuclear energy the Prime Minister firmly says that atomic energy will have to play a much larger role; but while speaking of renewable sources of energy he only speaks to ‘giving careful consideration’ to their use, that too only to the extent financially feasible. The firmness he displays in advocating the expansion of nuclear energy is lacking in respect of renewable sources. This author made a search of the Prime Minister’s speeches on his official website and came up with at least four references to nuclear energy but only one mentioned above to renewable energy.

The Prime Minister should reconsider his stress on nuclear energy because the problems of oil and coal are equally present here. These days India seeks alternative sources of energy because reserves of oil and coal are limited and consumers are becoming dependent on supplies from other countries. But the situation of nuclear energy is identical. India’s reserves of uranium are limited, hence New Delhi has made a *less than equal* agreement with the United States for the supply of this raw material. Also, dependence on other countries remains intact, it may even be enhanced. Another problem is that of pollution. Radioactive waste is produced in the generation of nuclear power. No satisfactory method of recycling this waste has been developed as yet. This waste has to be kept sealed in containers in perpetuity. Some countries are considering burying this waste in deep shafts in the bowels of mother earth. This pollution of earth is similar to the pollution of air by emission of carbon from the use of oil. Third problem is of security. One cannot forget the Chernobyl disaster. Despite better technology a lurking danger of disaster always remains.

While speaking at the Golden Jubilee of Neyveli Lignite Corporation in February 2006, the Prime Minister said, “Mankind must give back to nature more than what we take from it. Coal and energy are the gift of nature to us. Taking care of the fertility of our soil, taking care of our environment, taking care of our forests and fields is our gift to nature and to future generations.” Nuclear energy fails on this touchstone proposed by the Prime Minister himself. Thus the authorities should give greater attention to the development of other renewable sources of energy.

The first alternative is of biodiesel. Presently biodiesel is being manufactured from seeds of *Jatropha* in India. Corn is the preferred raw material in the United States. Seeds contain starch and oils that are readily converted into usable forms such as *ethanol*. However, the energy stored in the leaves and stem of these plants in the form of cellulose is not utilized. Development of technology to convert cellulose into diesel will provide people with a large new source of energy. According to a BBC report, the world’s fifth-largest oil company Chevron is investing \$300m a year in technology to support new energy sources. Peter Robertson, the company’s vicerchairman, said that they are putting this money into biodiesel and ethanol research. “In 30 years’ time,” he said, “oil and gas will be Chevron’s core business—in 50 years, I’m not sure.” In a

similar tone, Alan Greenspan, the recently retired Chairman of US Federal Reserve Board said in a testimony to the Senate in July 2006, “ethanol can become a significant alternative to gasoline, but that the answer in the long run is not in corn, now the sole commercial source of the fuel, because of limited supplies.” He urged rapid expansion of research into the development of *cellulosic ethanol*—made from wood chips, saw grass or other material.”

The second alternative is of solar energy. This source of energy is most environment-friendly. The energy that would have gone into heating the deserts is diverted to run air conditioners instead. The incremental impact on the earth’s atmosphere is minimal. The main limitation here is the cost of the photovoltaic cell. Presently most solar energy is being generated with subsidies provided by the government. UK-based **Carbon Free** estimates that the development of thin silicon wafers would lead to substantial reduction in the price of cells and make this source of energy viable.

Third alternative is wind power. Presently wind is being converted into electricity in only large wind farms. Rooftop wind generators can provide a decentralized source of energy much like the solar panels.

These measures can increase the supply of energy. Parallel effort is required to reduce the consumption of energy. Just as there are limits to how much food can be eaten with the help of digestives; likewise there is limit to how much energy can be used by making it ‘clean’. The Center for American Progress in its study titled “Securing Our Energy Future” suggests, for example, that a cross-subsidy system for all new passenger vehicles sold in the market may be established. Every vehicle should carry a mandatory notice of its fuel efficiency. A rebate should be given to each vehicle based on its fuel economy. This will lead to inefficient vehicles becoming more expensive. Similarly it points out that under US Government standards, automakers equip new vehicles with tires that have a lower rolling resistance which leads to higher fuel efficiency. However, tires sold in the market do not have to be as efficient. It estimates that by requiring replacement tires to be as efficient as new car tires, over 7 billion barrels of oil would be saved over the next 50 years.

Another line of action is to discourage the use of individual cars. Many countries have regulations requiring that there should be at least two occupants in a car running on the roads. This forces people to form car pools and leads to much saving of oil. There are companies in many countries that make money by the formation of car pools much the way marriage bureaus match brides and grooms.

But promoting nuclear power instead of oil or coal is like jumping from the frying pan into the fire. The Prime Minister should instead focus on the development of renewable sources of energy. ❄️❄️❄️