People Power

Oil Security or Energy Security?

The recent oil price hike and India's frenetic efforts to leverage its diplomatic strength for oil security raise important questions about our future energy needs. Do we have a viable and coherent energy strategy, or are we merely responding in a knee-jerk manner disregarding our long-term interests? A serious debate is necessary on these vital issues.

The past century has been remarkable in terms of global economic development and corresponding energy consumption. While coal is still the dominant fuel in thermal power plants, cheap and flexible oil and clean gas are increasingly used as fuels. As a result, world oil production, which stood at about 20 million barrels a day (mbd) had gone up to over 60 mbd by 1976, and stands today at 80 mbd.

The oil shock of 1970's was a wake up call to global economy. With the oil price skyrocketing, economists suddenly woke up to the non-renewable nature of fossil fuels, the price-volatility on account of cartelization, potential disruption of supplies on account of war or terrorism, and the looming environmental disaster on account of greenhouse gases. Energy conservation measures, demand side management by higher fuel efficiency, greater investments in oil industry and diversification to other forms of energy have been the sensible responses to that oil shock. But sadly, as the oil prices fell and much of the world enjoyed robust economic growth over the past two decades, economists, politicians and media have succumbed to an irrational exuberance. As a result, our dependence on oil is now greater than ever before, even as the risks continue undiminished.

There are two large concerns which make overreliance on oil dangerous for the future. First, as is well known, oil is a fast depleting non-renewable source. Global oil consumption, currently at 30 billion barrels a year, is rising 5 percent every annum. The current proven reserves of 1400 billion barrels will be exhausted within 25 years. This level of consumption can be sustained only by new and significant reserves which can be economically tapped. Even then, there is a limit to oil availability. And overreliance on a few countries makes all oil importers vulnerable to disruption of supplies because of terrorism or war and dramatic price increases. Already, India depends on imports for 70% of oil needs, and it is slated to rise to 80% within a decade.

Second, burning of oil and coal in vast quantities has significantly contributed to global warming. Most scientists now believe that climate change is perhaps the greatest threat to our planet in the coming decades. While we cannot, perhaps, replace fossil fuels completely, clearly everything possible must be done to find substitutes. India accounts for 3 percent of world oil consumption, and demand is rising 10 percent per annum. China, whose oil demand is rising by over 15

percent, accounts for 8 percent of global consumption. Soon, both nations will have to find ways of reducing emissions without hurting economic growth.

Given this scenario, what can India do to protect our economic and environmental future? While in the short term we should ensure uninterrupted supplies of oil, we need to rethink our future energy strategy. There are three broad areas we need to consider: modes of transportation in rapidly growing economy with an increasingly mobile population; meeting growing power needs without polluting the environment, congesting transport lines, and increasing costs; and alternative, plentiful, flexible fuels of the future to meet our growing energy needs.

First, personal motor car has become the ubiquitous symbol of growing prosperity in India, as in many other rich or growing economies. The results of this mania are debilitating: increasing urban congestion, growing local pollution, contribution to global warming, and rapid rise in demand for oil. And yet, our policies are irrational. There is no serious investment in urban public transport. Wider roads and flyovers cannot address the problem; they will merely increase car purchases, and soon lead to further congestion. Electric trains, non-polluting buses, and subways are critical to preserve our cities. If an equivalent of two years' automobile purchases or two years' oil imports is invested judiciously, India will have a world-class public transport system in most cities. A massive national effort is needed to create incentives by subsidies and easy credit, and discourage demand for personal transport. China, for instance, sells motor permits at nearly $ 5000 in Shanghai. True, that has not yet dampened the demand, but we need to heavily tax motor cars and build public transport systems.

Second, we need to rethink our power generation strategy. Most of our electricity is generated in thermal power plants, most burning coal, and a few based on naphtha or natural gas. While gas is a clean fuel, it is non-renewable, and precious chemicals are burnt without value addition. Coal is a fungible global commodity whose long-term price is declining. But high ash and sulphur content, and greenhouse gas emissions make coal environmentally unsound locally and globally. And we have to move tens of millions of tons of coal across the country or on high seas, congesting our transport network and wasting precious energy and money. We need to look for alternative sources. The most viable option is nuclear power. France meets 78% of its power needs through nuclear reactors. Small quantities of fuel can meet our requirements, and nuclear energy is extremely safe, clean and environmentally attractive because there are no emissions. The only problem is disposal of nuclear waste. One answer seems to be stacking away the waste in silos until technology improves to dispose of it safely. Most of the new power generation can be in nuclear plants. It requires planning, technology collaboration with rich countries, and public education about the benefits.

The third issue is identification and mass production of renewable fuel. Fuel cells based on hydrogen can partly address transport needs. Solar power based on photo voltaic cells has limited local application. Biomass in the current form is in short supply. Erection of even 100 MW capacity biomass-based power plants in a state lead to shortage and price rise of groundnut husk and other bio fuels for use in factory boilers. Hence, we need to deploy resources and talent for research and development of alternative fuels.

Every crisis presents an opportunity. The 70's oil shock led to change of fuel in power plants, conservation and rapid nuclear energy development. The current shock caught us off guard at the peak of our oil demand increase. This is the time for a radically new energy strategy to safeguard our growth, environment and health.

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