People Power

Energy Security – Time for Plan B?

The recent foreign policy debates are largely centered around our future energy needs. Frenetic economic diplomacy to secure nuclear power generation oil and gas contracts, and laying pipelines on the east as well as west to transport fossil fuels are certainly of value in the short and medium term. Long-term supply contracts and investments in exploration in oil-rich countries will give us some leverage. But we need to plan for the future with clarity in an integrated manner.

Let us look at the bigger picture to understand the threats to our energy security. A recent book – "Plan B 2.0" by Lester Brown – paints a grim picture of the global situation in the next hundred years. Brown is not an evangelist with apocalyptic vision. He is an optimist who recognizes the many opportunities to shape a better and more secure future in the next century.

Brown points out that we are very close to peak oil production, and, "indeed, when historians write about this period in history, they may well distinguish between before peak oil (BPO) and after peak oil (APO)". He analyses oil prospects in three different ways. First, anticipate future production trends using the reserves/production relationship, a method pioneered by King Hubbert. This analysis suggests that nearly 95% of all the oil in the world has already been discovered. Major global companies – Shell, Chevran Texaco, Conoco-Phillips – reported that their 2004 production greatly exceeded new discoveries. Geologist Walter Youngquist notes that in 2004 the world produced 30.5 billion barrels of oil, but discovered only 7.5 billion barrels of new oil.

The second approach separates the world's principal oil-producing countries into two groups – those where production is falling and those where it is still rising. Of the 23 leading oil producers, output appears to have peaked in 15, and is still rising in eight. The post-peak countries include the US, Venezuela, UK and Norway. US oil production declined by 44% since 1970, from 9.6 mbd to 5.4 mbd, and Venezuela's production declined by 30%. The eight pre-peak countries are Saudi Arabia, Russia, Canada, Kazakhstan, Alegeria, Angola, China and Mexico. Sadad al-Husseini notes that annual world oil demand is rising by 2 mbd. In addition, the annual decline in production in existing fields is 4.4 mbd. In other worlds, new production must increase by 6.4 mbd every year. This is virtually impossible. While new finds are declining, there is vast amount of oil is stored in tar sands in Canada and oil shales in Venezuela. Only a quarter of it can be recovered, but at great environmental cost.

The third approach is to examine the actions of major oil companies themselves. Leading oil companies are investing heavily in buying up their own stocks. Mobil ($ 10 b) and Chevran Taxaco ($2.5b) spent vast amounts to buy back stock. As Brown says, "With little new oil to be discovered and world oil demand growing

fast, companies appear to be realizing that their reserves will become even more valuable in the future". Also, there is no substantial increase in exploration and development even after oil prices shot beyond $ 50 a barrel.

All these approaches lead to one inescapable conclusion. We must plan for after peak oil (APO). For India, there are five options. First, nuclear fuel, with all the caveats and limitations, offers significant opportunity for power generation. Our current 3% can, and should be enhanced to about 15-20% in the next decade. Second, we have significant coal reserves. But our coal is of poor quality (calorific value averaging 2500 Cal per kg), and is highly polluting with vast ash content (often exceeding 40%). On top of it, our nationalized coal companies have become dens of corruption and incompetence. In most coal belts, a vast network of mafia operates, and a whole new political economy grew around mining. Dhanbad coal mafia is a classic example, but it represents only the tip of the iceberg. Coal mining needs to be opened up to competition and private investment, and ruthless action is needed to eliminate mafia links and criminal influence.

Third, we need to harness all renewable sources of wind, tidal energy and solar power. These forms of power are self-limiting, and can at best be tapped in small quantities at community level, and will work best in conjunction with centralized power grid.

The fourth is generation of biofuels utilizing our vast agricultural land, which at 140 mha accounts for 12% global farm land. In a fundamental sense, agriculture should meet most future energy needs, and supply fungible, easy-to-use biofuels. This will put pressure on food supplies. Plentiful, cheap oil distorted world economy over the past 50 years. In 1970, 1.49 bushels of wheat could buy 1.79 barrels of oil. Since then, this ratio increased from 1 to 13, meaning that now we need to sell 13 bushels of wheat to buy one barrel of oil. As food and fuel compete for land, the need for biofuel production will raise food prices. That may actually be good news for a country like India, where 55% of the people living on agriculture enjoy only 21% of GDP. But massive investments, R & D, and planning are required to tap our vast potential. Finally, India needs to look at demand side management. Increased energy efficiency, better public transport, and imaginative urban planning are vital to reduce demand.

Clearly, integrated energy management is the key to our energy security. Segmented approach – coal, power, oil and gas, non-conventional energy, agriculture – can no longer yield dividend. Will the government act on Plan B quickly?

Jayaprakash Narayan

The author is the Coordinator of Lok Satta movement, and VOTEINDIA – a national campaign for political reforms; Email: loksatta@satyam.net.in; info@voteindia.org; Url: www.loksatta.org; Url: www.voteindia.org