

THEME PAPER
on
ENERGY SECURITY– AN INDIAN PERSPECTIVE
Organized by

**Alumni Association National Council of Education Bengal & Jadavpur
 University – Delhi Chapter on 29-01-2005 at India International Centre,
 Lodi Road, New Delhi**

It is indeed heartening to note the growing convergence of views in Political, Diplomatic, Business and Government circles for a coherent policy and actions towards the national goal of Energy Security.

Globally the popular sources of energy, namely Coal, Oil, Gas and Nuclear have been in use over the past decades, and are expected to be in use in the future as well. The sources of renewable energy are gradually entering into commercial domain. Hydro energy has been in use over the centuries and is expected to continue to be a major source in future also. Non-conventional sources like Wind, bio-mass are contributing their mite, but may not command a bigger mind-share in energy security considerations, in the immediate future.

Internationally, we are being exposed the Geo-political and Commercial measures being taken by countries like the USA, China and Japan in securing long term access to sources of energy and these measures have sensitized all of us, connected to the Indian Energy Business, to proactively examine the issue of our energy security in all its dimensions.

The dimensions of energy security can broadly be enumerated as follows:

1. Current sources of energy and current level of access to these
 2. Technological measures to increase national access to sources of energy
 3. Structural measures to increase national access to sources of energy
 4. Demand management to reduce the wasteful usage of energy
 5. Strategic management of Energy security
- Current sources of energy and current level of access to these
- Coal : India has proven reserves exceeding 85 Billion tonnes. Coal provides app. 56% of all our energy needs. Our current coal consumption is to the tune of 0.35 Billion annually. Can we look at harnessing this available resource using domestic capital?
 - Oil : India currently produces 1/3rd of its needs for oil and imports the rest. The vision shown in spreading the wings by OVL in securing assured access to oilfields outside the country is commendable and needs to be supported to the hilt. However, reliance on imported oil continues to be a major unhedged variable in the energy security matrix.
 - Gas : Gas had been a poor cousin to oil as recently as ten years ago. Ironically, it seems that Enron, through the Dhabol project, introduced the

idea of LNG terminals. Through the visionary measures such as the NELP, as well as identification of LNG as a viable long term source of Natural Gas, the scenario for gas availability has substantially brightened.

- Nuclear : On account of national security considerations, NPCIL, is solely mandated for generating nuclear power in the country. Given the established technological competence in the country, and the Thorium and Uranium reserves, it is estimated that 30000 MW of electric power can be generated, as against current generation of about 2000 MW.
- Technological measures to increase national access to sources of energy
 - Super-critical cycles, which are an internationally proven technology, are being implemented in the country, for the first time by NTPC. Usage of this technology could be mandated as an increasing percentage of total generation, to help increase the usage efficiency.
 - Integrated coal gasification technology, implemented in a 6.2 MW module by BHEL, and now being planned for execution in a 100 MW module, needs to be implemented within a defined timeframe. This measure shall catapult India ahead over other major users of coal energy.
 - Schemes for accessing the reserves of coal-bed methane are under consideration, jointly by ONGC, backed with Russian technology, and CIL. These measures shall hopefully yield as source of energy as useful as NG.
 - R&M schemes designed to improve the PLF and fuel efficiency of old generating and process plants, rely on known and proven technologies. However the implementation on the ground, has been somewhat slow, on account of structural issues.
 - Measures such as Bharat III norms for engines for automobiles, have resulted reducing emissions, better fuel dispensing systems, more silent automobiles and in general a lower specific consumption. Can we look more such measures from entities like Bureau of Energy Efficiency ?
- Structural measures to increase national access to sources of energy
 - All of us have seen the penetration of telecom networks and mortgage housing in the country in the last 10 years. It can be seen that these miracles have been wrought by an enlightened regulatory framework, largely in-house entrepreneurs and a benign tax structure. Measures such as open access to all consumers, tax breaks for interest payments towards principal repayment for energy mining and converting assets and coherent regulation at central and state levels, can increase national investment and thereby access. Are we interested?
 - Measures such as free power subtract heavily from responsible behavior on part of all entities in the energy value chain. Intelligent redirection of subsidies is needed to reduce wastage and improve the climate for investment.
- Demand management to reduce the wasteful usage of energy

- Country-wide implementation of measures such as Time-of-day pricing of power, would reduce the investment needs to cater for peak demand, as well as improve the generation efficiencies.
 - Energy efficiency measures touched earlier, would reduce specific fuel consumption.
- Strategic management of Energy security
- Today the country has a professional working as a National Security Adviser, integrating all dimensions and presenting a coherent view to the top leadership of the country. Can we look at the need for a National Energy Adviser?
 - Integration of State level and Central level laws impacting the energy sector is the need of the hour.
 - The country has a vibrant public and private sector. Let us work out Public–Private partnerships to harness local resources, technologies, innovativeness and above all locally available capital to sculpt a secure future for our generation and for generations of Indians to come.