

# India's Quest for Energy Security: The Oil and Gas Perspective

*A Speech Delivered by*

The Honorable Shri Murii Deora

Minister of Petroleum and Natural Gas, Government of India

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## Opening Remarks

I deem it to be a great privilege to be here at the prestigious Baker Institute. I have been asked to share my views on the sensitive and complex issue of energy security for India. The subject of energy security has come to be of primary concern for all nations of the world. It is evident that any nation or society which does not plan for its energy security is bound to face serious developmental challenges in the near future.

## Defining Energy Security

What then can legitimately be described as "ENERGY SECURITY" of a nation? A 1999 UNDP report defined Energy Security as the continuous availability of energy in varied forms in sufficient quantities at reasonable prices. For India, the Parikh Committee report stated that a country is energy secure when it can supply energy to all its citizens and meet their demand for safe and convenient energy at affordable costs at all times with a prescribed confidence level considering shocks and disruptions that can be expected. You may notice that in the latter definition, "affordable" rather than "reasonable" has been used to describe prices. I will come back to the significance of this distinction shortly and define it to be a crucial component for energy security for a developing nation like India.

## India's Economic Rise & Energy Consumption

The relationship between energy consumption and growth of a nation is well documented. In fact, it is the steady economic rise of India and China that in substantial measure has placed the issue of energy security on the forefront. This growth is also inaccurately and simplistically portrayed as one important cause for the unprecedented price rise in the world oil market. However with nearly a sixth of the world's population in India, it should be appreciated that India's energy consumption remains modest at a fifth of world average per capita energy consumption. Thus India consumes 520 kilograms of oil equivalent (kgoe) per capita of primary energy compared to 1090 by China and 7,835 by the USA.

## India's Dependence on Energy Imports

Energy Security has also emerged as a primary concern for Indian policy makers because of our increasing dependence on imported energy. Oil imports constitute 72% of our total oil consumption and 26% of our Total Primary Commercial Energy Supply. The dependence on imports of oil causes two main concerns: the first is the uncertainty regarding the supply of oil; the second is its volatility.

Any disruption in access to energy can be very expensive in welfare terms, as energy is critical for economic growth and for human survival and well being.

### Energy Security for India

Energy security consideration for India will therefore require:

- ensuring availability of energy sources through domestic efforts or through long term supply agreements or through buying assets abroad;
- an elaborate distribution network for domestic supplies;
- development of infrastructure to cope with the growing demand in terms of storage, import terminals etc;
- energy conservation;
- alternate and diverse sources of energy and the needed R&D;
- to grow our energy supply in an environmentally responsible manner;
- above all, institutional and policy mechanisms to ensure an equitable supply of energy both in terms of reaching underdeveloped regions and in terms of the economically backward sections of the Indian society.

### Energy for Social & Economic Development

As a political representative, I cannot but emphasize the last issue i.e. the need to address the requirements of the economically depressed classes. I am sure; all present here would agree that energy insecurity takes the heaviest and the cruelest toll on the weaker sections of any society first. Non availability of domestic fuel due to high prices or general lack of the commodity creates concerns of livelihood, environmental degradation and indeed of survival among the under privileged. It is estimated that every \$ increase in the oil prices takes away one day's worth of subsistence for 60% of the world's population. For a growing country like India thus the challenge is much more complex than simple availability of energy.

### Diversifying India's Energy Supply

India needs economic growth for the development of its one billion plus human resource. For the 8% to 10% growth that the country aspires for both the quantity and the quality of energy supply has to improve. We need clean, convenient and reliable energy. Today India's energy mix is still dominated by coal which constitutes over 50% of our energy basket. This is followed by oil and gas at 45% with gas holding just about 8% share. Nuclear energy is about 2%.

As India is a relatively late starter on its trajectory of growth, we have the benefit of hindsight and the lessons from experiences of other nations. You will be surprised to note that "Energy Intensity" for India which was 1% plus in 1990, today is pegged at .75%.

This implies that for every 1% increase in GDP our increase in energy requirements are much less than those of many countries.

Looking into the future, it seems that in 2020 fossil fuels will continue to dominate India's energy mix to the extent of 75% with hydropower contributing 14% and nuclear energy 6.5%.

India has crafted a multi pronged strategy to counter the challenge of fueling India's economic growth. There has been a conscious shift so as to promote larger public-private Regulatory Board Bill, 2006. With the passage of this Bill the path has been paved to put a fully equipped regulatory body for the downstream and midstream sector, in place. Thus a crucial building block for enhanced private investment and protection of the interest of all stake holders is now in place. The Bill provides the legal framework for building the much needed gas pipeline infrastructure to facilitate the marketing and distribution of gas.

### Strategies for Energy Security

The various strategies to achieve our energy security objectives can be summarized as follows:

- As India still remains a vastly under-explored country. Domestic acreages and frontier basins are now being increasingly brought under exploration and production under the New Exploration licensing Policy (NELP). In this regard some of the recent discoveries by Reliance and GSPC, offshore in the East coast and by Cairn in Rajasthan have opened entirely new vistas in the exploration of oil and gas in the country.
- Simultaneously, we have also taken up Methane extraction from Coal. This year we have launched the 3<sup>rd</sup> round of CBM blocks. We are expecting first commercial production of CBM in 2007.
- In addition to the accelerated exploration programs, schemes to enhance oil production from the existing reservoirs have been put in place. Our national oil company ONGC has taken up a US \$2.7 billion investment plan in these schemes in 15 fields to enhance oil production by elevating its recovery factor for oil to 40%.
- In refining and marketing, India has already introduced liberal policies. Investments in the refining sector are open and companies investing over Rs 20 billion (US \$450 million) in the domestic oil and gas sector are also given rights to market petroleum products in India.
- The policy on pricing of petroleum products has been dovetailed with the objective of equitable access to the economically weak sections of the society.
- Another important component of our oil and gas security is to acquire equity oil and gas assets outside India. Indian companies have succeeded in getting a significant foothold and are currently operating in 14 countries with a production of about 100,000 Barrels per day of oil and oil equivalent gas in Sakhalin I, Sudan and Vietnam.

- In addition to accelerating efforts at home and through international participation, India sees enhancement in its energy security through building energy corridors for supply of oil and gas across and with in its borders.
- To develop alternate fuels. In this regard considerable efforts are underway for production of Biodiesel.

### Global Responsibility for Sustainable Development

#### *The Indo-U.S. Energy Dialogue*

To ensure steady supplies of energy, it would be prudent to introduce and enable developing economies to use new technologies for enhancing their energy security. This shall not only enable efficient and more productive use of their resources, but would also help the world in proving many technologies viable through higher and larger commercial usage. Technologies in the field of Gas hydrates, Coal gasification, Gas to Liquids, Coal bed Methane, ultra deep exploration and production are lesser known in the developing world.

The time has come that the world collectively shares the responsibility of sustainable development and elevation in the quality of life of the masses.

India is exploring the possibility to meet its energy requirements from various sources of energy whether through fossil fuels, thermal power, hydro-electric or nuclear power. In this regard, the United States and India have initiated the Indo-U.S. energy dialogue, which would provide a meaningful exchange of information and a forum to help us in planning and implementing our agenda for energy security.

The recent agreement between the United States and India during the visit of U.S. President George W. Bush on civil nuclear energy cooperation marks a historical turning point in the ever increasing cooperation and mutual understanding between the two countries. India has always been engaged in a peaceful nuclear energy program to meet its growing energy demand. This measure will help India in adding its power generation capacity. Nuclear Energy would make the country less dependant on oil and gas and will also be environmentally friendly.

The strategic agreement between India and the USA on civil nuclear cooperation can be seen as a partnership between the world's oldest and the world's largest democracy in working together for a more secure world. The agreement marks a milestone in the Indo-US partnership. As President Bush expressed during his just concluded visit to Delhi "the partnership between our free nations has the power to transform the world".

Our cooperation should cover the entire energy spectrum. India has already agreed to participate in the Future-Gen program for zero emission thermal power plants and integrated ocean drilling program for gas hydrates.

I would stress that India and the United States should partner and initiate an institutional process of ensuring global energy security and lay the foundation of a new beginning, to realize the vision of a secure, sustainable, equitable, efficient and productive global energy market.

I conclude by quoting the Indian Prime Minister, Dr. Man Mohan Singh who aptly summed up the challenge in the following terms:

"...the search for an integrated policy with an appropriate mix of energy supplies is central to the achievement of our broader economic or social objectives. Energy is the lifeblood of our economy. Without sufficient and predictable access, our aspirations in the social sector cannot be realized.... I believe that the needs of the people of India must become the central agenda for our international cooperation. It is precisely this approach that has guided our growing partnership with the United States."