

India's Energy Dilemma

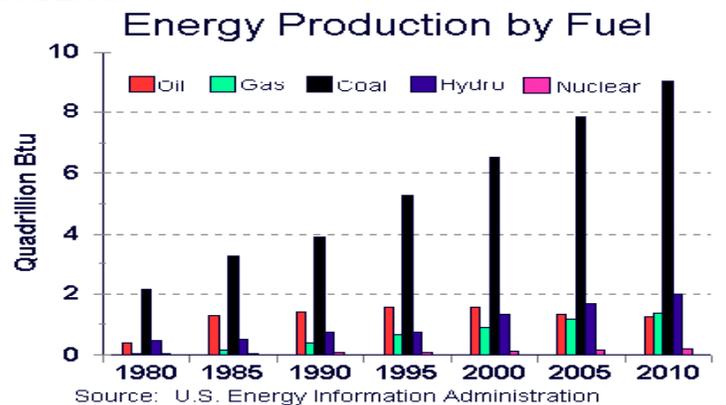
India's rapid economic growth has made it the second fastest – growing energy market in the world. Its domestic strategy for dealing with this raises painful questions about efficiency and fiscal soundness. Its international strategy involves a relentless push to diversify suppliers, increase India's equity stake overseas, and try to avoid destructive commercial competition with China. In some cases, this has produced foreign policy differences with the United States that will require careful management on both sides.

The Indian economy has clocked an average growth rate of 7 percent in the last decade. To maintain this pace, experts believe that the country will have to increase its energy consumption by at least 4 percent annually. This relentlessly increasing demand is a massive challenge for India, affecting not only the domestic economy but India's foreign policy.

India is the world's eleventh-largest energy producer, with 2.4 percent of energy production, and the world's sixth-largest consumer, with 3.5 percent of global energy consumption. Domestic coal reserves account for 70 percent of India's energy needs. The remaining 30 percent is met by oil, with more than 65 percent of that oil being imported. Demand for energy is expected to double by 2025; by then, 90 percent of India's petroleum will be imported.

India's energy sector: Of the three major energy sources – coal, oil and gas – coal is India's major source of energy. With 7 percent of the world's coal India has the fourth largest coal reserves. The Carbon Sequestration Leadership Forum (CSLF) estimates that at the current level of consumption and production, India's coal reserves will last for more than 200 years. Unfortunately, in addition to environmental concerns (coal is one of the dirtiest hydrocarbon fuels), coal cannot meet all of India's energy needs. The transportation industry requires oil, and much of India's coal is not of the type needed in steel and other

industries. In spite of India's coal reserves, the Indian government's flagship steel company, the Steel Authority of India Ltd. (SAIL) imports 60 percent of its coal needs.



India's oil and gas reserves are not sufficient to meet its rapidly growing energy needs. Oil is the life-blood of the rapidly expanding transportation sector. Barring a major new oil discovery, India will have to increasingly rely on imports to meet future demand for oil.

Most of India's gas is now used for the electricity sector, although the expanding use of compressed natural gas (CNG) for urban transport makes this a growing market segment. Most of India's current gas needs are met from domestic sources. Liquefied Natural Gas (LNG) has not figured prominently in the energy mix, but is slowly increasing. Experts estimate that by 2012 India's LNG imports will be on par with Japan's current LNG imports of 60 million tonnes per annum. Although the Gas Authority of India Ltd. (GAIL) has already begun work on a National Gas Grid, there is considerable technological progress that has to be made in terms of extraction, transportation and delivery of LNG. It is estimated that once the grid is fully functional, LNG could offset a significant portion of India's energy demand.

India's energy sector is dominated by the public sector. Within the electricity supply industry, there are some

private electricity generating operations, but almost all are required to market through the State Electricity Boards (SEBs), owned and controlled by individual states. The petroleum industry and gas industry are currently dominated by the Oil and National Gas Corporation (ONGC), the Gas Authority of India Ltd (GAIL), and the Indian Oil Corporation (IOC). Private sector involvement has been restricted to the refining section of the energy industry. ONGC, the government's oil exploration and production enterprise, is one of the most profitable companies in India and is responsible for 77 percent of crude oil production and 81 percent of natural gas production. A majority of India's refineries are owned by IOC, which is one of the 20 largest petroleum companies in the world and features on the Fortune 200 list. GAIL is the leading gas transmission and marketing firm in India and is one of the 10 most profitable companies in the country. Together ONGC, IOC, and GAIL form three of the nine crown jewels, or *navratnas*, of the Indian government's public sector undertakings.

Need for reform: Many observers believe that the most effective way to meet this growing demand is to reform the energy sector. Leaving aside the need for technical modernization of the industry, discussions of reform tend to revolve around three policy areas: bringing prices closer to world market levels; putting the energy industry, and especially the State Electricity Boards, on a sound fiscal basis; and making greater space for the private sector in the industry. Each of these will meet with ferocious resistance from constituents accustomed to subsidized energy, politicians who fear the consequence of reducing subsidies, and those who currently have the responsibility for running the public sector energy organizations. And especially with today's high oil prices, the government will be seriously concerned about the impact of market prices on poverty in the country.

Expanding the energy sector to meet India's future needs will also be expensive. The IEA (International Energy Agency) estimates that India will need to spend approximately \$800 billion dollars on its energy sector by 2030. Additionally, the rising price of oil will make it difficult, if not impossible, for the Indian government to maintain the current subsidized prices. In 2006, volatile oil prices in the international energy market led to a substantial increase in kerosene and domestic LPG prices. Almost 85 percent of this price increase was borne by the Indian government and its oil companies. India has expanded the role of the private sector in a number of other fields that had traditionally been public

sector preserves. In almost every case, this was done by creating space for private sector operators to come in alongside the public sector, often starting with carefully defined, value-added operations. In all likelihood, if India expands the role of the private sector in energy, it will follow this same pattern.

Oil diplomacy: India's basic approach to energy diplomacy—both oil and gas—has been to develop as many potential supply arrangements, with as many potential suppliers, as it possibly can, and to try to neutralize its potential competitors (principally China) with cooperation agreements. It has made considerable progress in diversifying its sources of supply, but as a result has been moving into some tough markets where frustration was an almost inevitable by-product.



Saudi Prince Abdul Aziz Al Saud visits with India's President Dr. A.P.J. Abdul Kalam (Source: EcoWorld)

India currently imports 60- 70 percent of its oil needs, mainly from countries in the Middle East. Experts estimate that by 2025, India

will be the third-largest importer of energy, with 90 percent of India's supply being imported from abroad. ONGC Videsh, the international arm of ONGC, has been actively pursuing foreign energy sources for energy supply contracts, and exploration and drilling rights. In Central Asia, ONGC has made significant inroads into Iran, Kazakhstan, Turkmenistan, and most recently in Tajikistan. It has formally bid on Tengiz and Kashaugan oil fields and the Kurmangazy and Darkhan exploration blocks in Kazakhstan.

The Indian government has also ventured into Africa. India has acquired shares in oil exploration ventures in Indonesia, Libya and Nigeria, and made substantial investments in Sudan's hydrocarbon sector. It has also announced plans to invest approximately \$1 billion dollars in the Ivory Coast for offshore drilling. Furthermore, Reliance Industries, India's largest private-sector oil firm, is currently negotiating energy partnerships in Angola, Cameroon, Chad, Congo, and Nigeria.

Importing gas: India has also been energetic in seeking out long-term gas deals. India has a number of active

LNG supply contracts with countries, including Iran, Qatar, Australia, Malaysia, Oman, and Turkmenistan. It tried for years to arrange for the supply of gas from Bangladesh to the north Indian market, and later explored the idea of a pipeline from Burma to India via Bangladesh. Neither of these ideas materialized, partly because of domestic political pressures in Bangladesh, and partly because of apparently competing arrangements between Burma and China.



Source: ONGC

The Indian government has signed a \$40 billion dollar gas deal with Iran which guarantees India 7.5 million tons of LNG over a 25 year period. It also gives India development stakes in Iran's largest offshore oil field, Yadavaran, and in the Jufier oilfield. For close to a decade now, India has been discussing the possible construction of a transnational gas pipeline from Iran's South Pars field to India via Pakistan. If this "IPT" pipeline becomes operational, it will be able to transport 90 to 90 million standard cubic meters of gas per day. This pipeline involves difficult issues of security, pricing, and above all political risk. For India, it would involve importing a strategic commodity across the territory of Pakistan, with which it has often had hostile relations, and both countries would need to find ways of protecting against supply interruptions. Pakistan has decided that it is prepared to move ahead despite its general aversion to normalizing economic relations with India before it has made significant progress on the Kashmir issue, but the politics of the pipeline will be affected by the general tenor of India-Pakistan relations. But the size of Iran's gas resources, its proximity, and its willingness to provide other strategic benefits to India (such as land access to Afghanistan and Central Asia) make it a particularly attractive partner for India's energy diplomacy.

India has also started negotiations with Turkmenistan in the past on a gas pipeline, commonly known as the

"TAP line" that will run from Turkmenistan to India through Afghanistan and Pakistan. In addition, ONGC has established partnerships in Southeast Asia with investments in Vietnamese offshore fields.

Possible complications in U.S. – India relations:

India's choice of energy partners like Iran, Libya, Syria and Sudan has occasionally led it to work at cross-purposes with the United States. Iran has been the clearest and most difficult example. U.S. Secretary of State Condoleezza Rice publicly said, during a March 2005 visit to New Delhi, that the United States had serious problems with the proposed pipeline. This statement led to some Indian concern about whether Washington would try to undercut India's other strategic interests in Iran. The U.S. has not focused thus far on India's energy purchases in Iran or even on India's work on the Iranian port at Chabahar. And India has voted with the United States when Iran's nuclear program came up in the International Atomic Energy Agency. India probably hopes Washington will be willing to live with the pipeline, if it ever comes to fruition, provided India's policy on Iran's nuclear program remains reasonably compatible with Washington's. But the two countries have very different visions of how to deal with Iran.

Other areas where India's energy-driven policies may be out of step with U.S. goals include Nigeria, where India announced in 2005 that it would help Nigeria modernize its military capabilities.

The United States is sympathetic to India's energy needs, and has established a high-level energy dialogue to find ways of cooperating and using the scientific know-how of both countries to benefit India's energy market. The proposed India-U.S. agreement on civil nuclear cooperation also has potential energy benefits. From India's point of view, however, these are supplements, not alternatives, to a policy of aggressively diversifying energy supplies.

The China Connection: China's demand for energy is growing even faster than India's, and China is pursuing a similar strategy of diversifying its sources of supply through energetic business and political diplomacy. China is well ahead of India in acquiring new sources of energy. The China National Petroleum Corporation (SINOPEC) has invested approximately \$45 billion dollars in efforts to establish new energy partnerships. By contrast, ONGC has invested a modest \$ 3.5 billion dollars in its global energy partnerships. Although India and China have jointly bid on oil assets in Syria, and

Colombia, and signed several memorandums of understanding on energy issues in 2006, this has not prevented them from direct competition over energy deals. In 2004, SINOPEC outbid ONGC Videsh and acquired an oil-exploration block from Shell Oil in Angola. Chinese companies have also outbid ONGC and IOC on energy deals in Nigeria and Ecuador. Similarly, the competition between India and China for new energy sources in Central Asia is also clearly well underway. So far, the collaborative efforts between India and China regarding new energy sources have been minimal. It is fair to assume that as far as energy is concerned, Sino-Indian relations will continue to be competitive.

Future of energy policy: Energy is the area where India's independent foreign policy has the most immediate connection with its economic growth plans. Efficiency, fiscal reform, expanding the possibilities for private sector involvement in energy, and energy diplomacy are all different facets of the same basic requirement to service India's growing market. The United States remains India's most important external friend, and the area of overlap between Indian and U.S. strategic interests continues to grow. But many of the areas where they are not in harmony have an important energy dimension.

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