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COUNTRY ANALYSIS BRIEFS

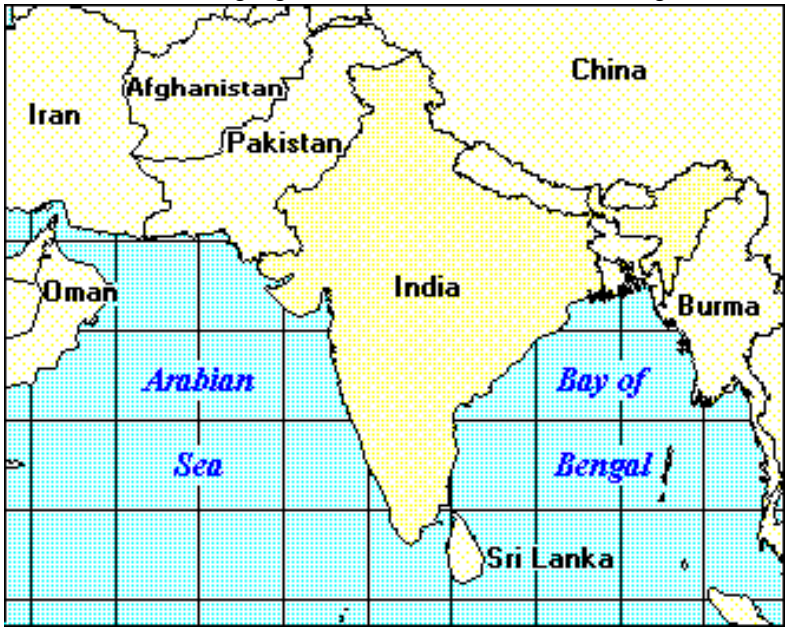
India

Last Updated: December 2005

Background

India's economy continues to grow at a rate of nearly 7 percent per year.

India's economy continued its strong rate of growth in 2005. Real growth in the country's gross domestic product (GDP) was 6.9 percent for 2004, and is projected at 6.8 percent for fiscal year 2005 and 6.7 percent for fiscal year 2006 (the Indian fiscal year for economic statistics begins on April 1.) In addition to strong economic growth, India has made substantial progress toward a reduction of political tensions with Pakistan over the last three years, restoring trade and travel links, and resuming high-level contacts between the two governments.



After many years of pursuing economic policies based on import substitution and state ownership of key industries, India's government embarked on a series of economic reforms in the mid-1990s. The reforms included a relaxation of restrictions on foreign ownership in some sectors, and privatization of some industrial enterprises. After the most recent parliamentary elections, which took place in April and May 2004, a new government led by the Congress party was sworn in under the leadership of Prime Minister Manmohan Singh. While the new government has taken some symbolic steps away from the economic policies of the previous Bharatiya Janata Party (BJP)-led government, such as abolishing the Ministry of Disinvestment, the process of economic reforms has continued. In the energy sector, the largest impact has been the abandonment of full privatization of the state-owned petroleum sector, while reforms in the electric utilities sector under the Electricity Act of 2003 are continuing.

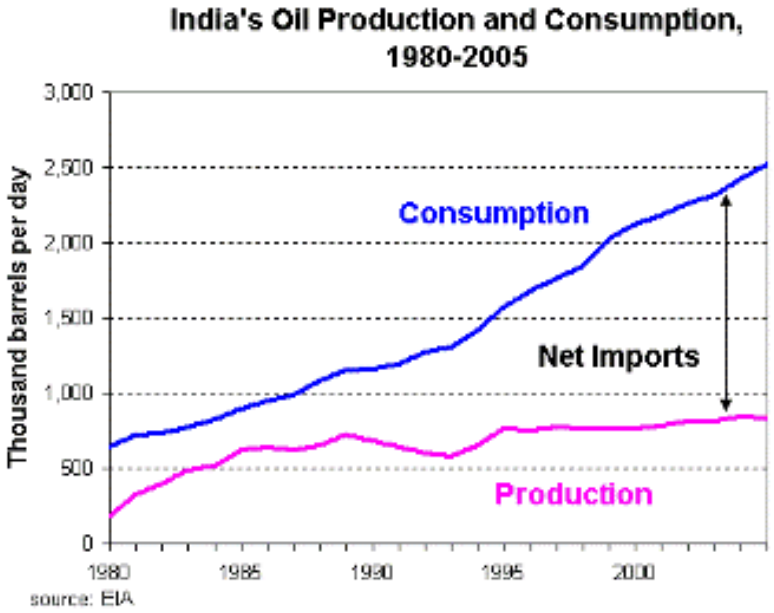
India has implemented a series of policy changes since the mid-1990s to encourage foreign investment. Tariffs on imported capital goods have been lowered, and in some cases eliminated (such as equipment for large scale power generation projects). Restrictions on foreign ownership have been relaxed, though there has been discussion of reinstating a few of them in key sectors. Previously, foreign ownership usually had been limited to a minority ownership stake. Annual foreign direct investment (FDI) in India has hovered in the range of $5-$6 billion over the last several years, which is up substantially from the levels seen in the 1990s, but still well below the $50-$60 billion per year of FDI in China.

India has had a longstanding territorial dispute with Pakistan over the ownership of Kashmir, which has led to a tense relationship between the two countries since the partition of British India in 1947. After a large-scale mobilization of military forces along their border during most of 2002, tensions eased somewhat late in the year, and both sides pulled back most of their forces from the border in phased withdrawals during 2003. Further confidence-building measures on both sides have taken place since then, and a nuclear "hotline" between the two governments is planned. India's rivalry with Pakistan has direct relevance to the country's energy sector, as a reduction in tensions could facilitate regional natural gas and/or oil pipelines (i.e., from Iran or Central Asia).

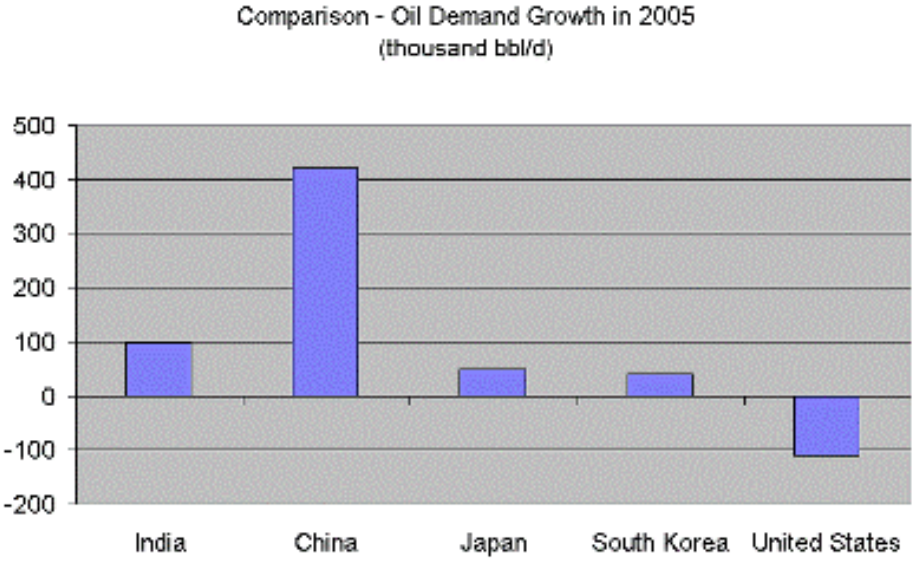
Oil

Oil consumption in India is projected to grow to 3.1 million bbl/d by 2010, from 2.5 million bbl/d in 2005.

Oil accounts for about 34 percent of India's total energy consumption, and has been growing gradually as a share of the country's fuel mix in recent years. The majority of India's roughly 5.4 billion barrels in oil reserves are located in the Mumbai High, Upper Assam, Cambay, Krishna-Godavari, and Cauvery basins. The offshore Mumbai High field is by far India's largest producing field. Normal output at Mumbai High is around 275,000 barrels per day (bbl/d), but an offshore gathering platform at the field was damaged in a fire in July 2005. India's state-owned Oil and Natural Gas Corporation (ONGC) expects to have repairs completed by March 2006. In the meantime some output has been rerouted through other gathering platforms. India's average oil production level (total liquids) for 2005 was 837,000 bbl/d, of which 632,000 bbl/d was crude oil. India had net oil imports of nearly 1.7 million bbl/d in 2005.



Future oil consumption in India is expected to show strong growth, to 3.1 million bbl/d by 2010, from 2.5 million bbl/d in 2005. India is attempting to limit its dependence on oil imports somewhat by expanding domestic exploration and production. To this end, the Indian government is pursuing the New Exploration Licensing Policy (NELP), first announced in 1997, which permits foreign involvement in exploration, an activity long restricted to Indian state-owned firms. While the initial response to the 1999 tender was disappointing, with no bids received from the major multinational oil companies (causing an extension of the deadline for submission of bids), India proceeded with the award of 25 oil exploration blocks in early January 2000. The largest winner in the bidding round was India's domestic Reliance Industries, in partnership with independent Niko Resources of Canada, which received 12 blocks. British independent Cairn Energy, Russia's Gazprom, the U.S. firm Mosbacher Energy, and Geopetrol of France were all awarded single blocks in partnership with Indian firms. ONGC was awarded eight blocks, three of which it will hold in partnership with other public-sector Indian firms.



India China Japan South Korea United States

Source: EIA, Short-Term Energy Outlook (STEO), Dec. 2005

A second round of bidding, with a total of 25 blocks offered, concluded in March 2001. Sixteen of the blocks have been awarded to ONGC, and four blocks to Hardy Oil of the United Kingdom, in partnership with India's Reliance Petroleum. The others were either awarded to smaller independent firms or failed to receive bids. As with the first round, no bids were received from major international oil companies.

Bids for the third round were received in August 2002, with a total of 27 blocks offered. Awards under this third round were made in February 2003, with domestic Indian firms receiving most of the blocks. Reliance Industries received nine offshore blocks, one adjacent to the Krishna-Godavari Basin. ONGC was awarded 13 blocks, five offshore and eight onshore. The Gujarat State Petroleum Corporation received one. Blocks offered during the fourth round in 2003 received relatively little foreign interest. Awards for 15 blocks were made in February 2004, with 14 going to ONGC and one going to Reliance Industries. A fifth round of bidding closed in July 2005, with firms receiving the 20 blocks offered in September 2005 including Cairn Energy, Niko Resources, and Italy's ENI.

Low drilling recovery rates are a major part of the oil supply problem for India. Historically, recovery rates have averaged only around 30 percent in currently producing Indian oilfields, well below the world average. It is hoped that allowing foreign investment will bring in technology that is not available to Indian state firms, thereby increasing overall recovery rates. ONGC currently is undertaking a project to increase recovery rates in the Mumbai High offshore field and several others as well, aiming to boost the overall recovery rate for its production assets from 28 percent to 40 percent.

One area which has shown promise is western Rajasthan. Cairn Energy (UK) has been drilling in the area since 2001, and has reported several successful wells in 2004. The Mangala field has been estimated to contain as much as 320 million barrels of recoverable reserves, and the "N-A" field has estimated recoverable reserves of 80 million barrels. Cairn is continuing exploration in the area, and is planning to bring the field into production by early 2008, with an expected volume of 100,000 bbl/d.

In February 2002, BG purchased a 30 percent stake in the Panna, Mukta, and Tapti offshore oil and gas fields, which had previously been held by Enron. A dispute between BG and ONGC (which owns a 40 percent interest in the fields) over which firm would operate them was resolved in February 2003 with a "joint operatorship agreement." Reliance Industries holds the other 30 percent stake.

Downstream/Refining

For most of the 1990s, India imported a large quantity of refined products, as it lacked the refining capacity to keep up with growing demand. In 1999, refinery construction allowed India to close the gap. At the end of 2004, India had a total of 2.3 million bbl/d in refining capacity, an increase of 1.1 million bbl/d since 1998. The largest single addition was Reliance Petroleum's huge Jamnagar refinery, which began operation in 1999. Jamnagar has since reached its full capacity of 660,000 bbl/d. Jamnagar sells its products through three of the state-owned firms, and also has a retail network of its own.

Another major downstream infrastructure development is the construction of pipelines being undertaken by Petronet India, a company created by an agreement in 1998 between India's state-owned refineries. This construction is expected to add 500,000 bbl/d to India's current 325,000 bbl/d capacity for pipeline transportation of refined products. Pipelines between refineries and major urban centers are replacing rail cars as the main mode of transportation in India.

Several multinationals have entered the Indian lubricants market, which was deregulated six years ago. Firms such as Shell, ExxonMobil, and Caltex currently hold over one-third of the market. While these operations are relatively small, they are seen as allowing the majors to study the Indian market, establish brand recognition, and prepare for the eventual deregulation of the Indian retail petroleum products sector. Still, a requirement that foreign firms invest at least $400 million before entering the downstream market has served to limit their entry into petroleum products retailing. Shell met this requirement in early 2004, and has opened its own retail outlets, though it has slowed its expansion due to the continuance of price controls on petroleum products.

Industry Restructuring and Price Deregulation

The Indian government officially ended the Administered Pricing Mechanism (APM) for petroleum product prices in April 2002. Prior to this deregulation, the Indian government had tried to offset the effects of price changes in crude oil by maintaining an Oil Pool Account, which was to build financial reserves when crude oil prices fell and release them back as increased subsidies when crude oil prices rose. In practice, though, the April 2002 reforms have not completely removed government influence on petroleum product prices. Subsidies have been maintained on some products, such as kerosene, which is commonly used as a cooking fuel by low-income households in India. State-owned downstream companies also still must submit proposed price changes to the Ministry of Petroleum and Natural Gas for approval. This has, in practice, limited movements in retail prices in response to fluctuations in world oil prices.

The previously planned sell off of government stakes in Hindustan Petroleum (HPCL) and Bharat Petroleum (BPCL) appear unlikely to move forward in the near future. The policy of the new Congress-led government is to avoid most further privatizations of public companies which are making a profit.

India is planning to set up a strategic petroleum reserve equal to 15 days of the country's oil consumption. The state-owned refiner Indian Oil Corporation (IOC) is likely to take the lead in the development of the reserve, which would be paid for by the Indian central government by means of a tax on petroleum product sales.

Natural Gas

Despite major new natural gas discoveries in recent years, India is considering large-scale imports via pipelines and LNG terminals.

Indian consumption of natural gas has risen faster than any other fuel in recent years. From only 0.63 trillion cubic feet (Tcf) per year in 1995, natural gas use was nearly 0.96 Tcf in 2003 and is projected to reach 1.4 Tcf in 2010 and 1.8 Tcf in 2015. A major development in December 2002 was the announcement by Reliance Industries of its discovery of a large amount of natural gas in the Krishna-Godavari Basin offshore from Andhra Pradesh along India's southeast coast. New reserves from this find are estimated at about 14 Tcf. Reliance reported another find offshore from Orissa in June 2004, with estimated reserves of 1 Tcf. The company expects production from its Andhra Predesh fields to commence in 2008. Cairn Energy also reported natural gas finds in late 2002 offshore from Andhra Pradesh as well as Gujarat, which contain reserves estimated at nearly 2 Tcf.

Even with these new reserves, India's domestic natural gas supply is not likely to keep pace with demand, and the country will have to import much of its natural gas, either via pipeline or as liquefied natural gas (LNG). While EIA's current forecast in the International Energy Outlook 2005 predicts a 5.1 percent annual growth rate in natural gas consumption, this reflects a substantial downward revision from previous forecasts, which had projected consumption of as much as 2.7 Tcf per year by 2010. Problems with financing LNG import projects have dimmed some of the previous prospects for explosive growth in natural gas consumption in India, and helped to revive interest in pipeline import options. Financial problems in the power sector, the main consumer of natural gas, also have had a negative effect.

Most of India's current natural gas production takes place in the Mumbai High basin and the state of Gujarat. Current projects include enhancing natural gas production at the Tapti fields in Gujarat and recovering previously flared natural gas at the Mumbai High oilfield.

India is investing heavily in the infrastructure required to support increased use of natural gas. Gas Authority of India Limited (GAIL), a government-owned entity, is in the process of doubling the throughput capacity on its main Hazira-Bijaipur-Jagdishpur (HBJ) Pipeline. Work on the capacity expansion began in 2002, and will eventually raise the capacity of the line from about 1.1 billion cubic feet per day (Bcf/d) to 2.1 Bcf/d. GAIL also plans a new distribution network in West Bengal and a pipeline which would connect Calcutta with Chennai. Due to the lack of natural gas distribution infrastructure in Andhra Pradesh, and surging demand in areas where it already exists, Reliance Industries is considering possible construction of a pipeline to link its new fields offshore from Andhra Pradesh into the existing HBJ pipeline network.

India's Foreign Investment Promotion Board (FIPB) approved 12 prospective LNG import terminal projects in the mid-to-late-1990s, but it was never considered likely that all would be built in the near future, as their combined capacity would have exceeded even the most optimistic demand projections. The Indian government froze approvals of new LNG terminals in 2001, and payment problems at the Enron-backed Dabhol Power Plant in Maharashtra led many to question the financial viability of some of the LNG import projects. Reforms currently being undertaken in the electric power sector may eventually change this situation.

The largest state sector projects are to be conducted by Petronet, a joint venture between ONGC, IOC, the Gas Authority of India Ltd. (GAIL), the National Thermal Power Corporation (NTPC), and Gaz de France. Each of the state firms owns a 12.5 percent stake, the Gujarat state government owns a 5 percent stake, and the rest is owned

by private investors, including a 10 percent stake held by Gaz de France Petronet plans two import terminals, one at Dahej and the other at Kochi. The import terminal at Dahej began operation last year, receiving India's first cargo of LNG on January 30, 2004. The Dahej terminal had major advantages over some of the other proposed projects, because it is tied in with the main state-owned natural gas company, GAIL, and the existing HBJ pipeline network. After several delays, Petronet is planning to solicit bids for its second terminal at Kochi in early 2006, with a planned completion in 2009. Shell also has begun construction of its LNG import terminal at Hazira in Gujarat, and has contracted for LNG supplies from Oman. The facility began operation in November 2004. Like the Petronet Dahej terminal, it is to be linked into existing natural gas pipelines. Shell reportedly has been in discussions with Indian companies about a possible sale of a percentage of its equity in the terminal.

The Dabhol LNG terminal was nearly finished at the time construction was halted in June 2001, and it will likely be completed eventually, since construction was about 90 percent completed. Two American firms involved in the project, General Electric and Bechtel, reached a settlement with the governments of India and Maharashtra state in July 2005. The renamed Ratnagiri project is expected to be completed and begin commercial operation in mid-2006.

Aside from LNG imports, imports of natural gas by pipeline may eventually play a role in satisfying India's gas needs. One possibility would supply India with natural gas from Iran's huge South Pars field via a pipeline through Pakistan. Iran has discussed the proposal with India and Pakistan. Australia's Broken Hill Proprietary (BHP) is the main foreign backer of the idea. Pakistan had said in early 2001 that it would allow supplies to cross its territory, and Iran would bear the contractual responsibility for assuring gas supplies to India. With the thaw in India-Pakistan relations over the last two years, the project has gained interest, but is still under negotiation. Supplies of LNG from Iran may also be an option in the future, and a consortium of Indian companies signed preliminary memorandum of understanding in June 2005 for sales of LNG to supply the two Petronet terminals, beginning in 2009 after the completion of the Kochi terminal.

Another possible import route would link the natural gas reserves of Bangladesh into the Indian gas grid. Current proven reserves of natural gas in Bangladesh are at least 14 Tcf, but the foreign firms involved in natural gas exploration in Bangladesh, which includes Unocal, believe that reserves are higher. Shell, which backs exports to India, has estimated Bangladeshi natural gas reserves at 38 Tcf, and a study by the U.S. Geological Survey put the country's probable reserves at 32 Tcf. Bangladesh has been reluctant to approve exports to India, however, until all questions about reserves and its domestic supply have been resolved. After years of delays, Unocal effectively shelved the project in March 2004.

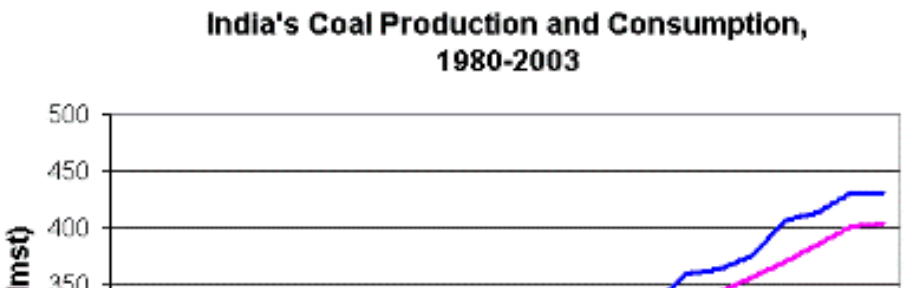
Finally, a new natural gas find in Burma also has attracted interest as a potential source of supply for India. Indian companies ONGC and GAIL own a total of 30 percent equity in the reserves, and Bangladeshi officials stated in June 2004 that they would be willing to consider a pipeline running across Bangladeshi territory from Burma to West Bengal in India, provided agreement could be reached on terms and transit fees.

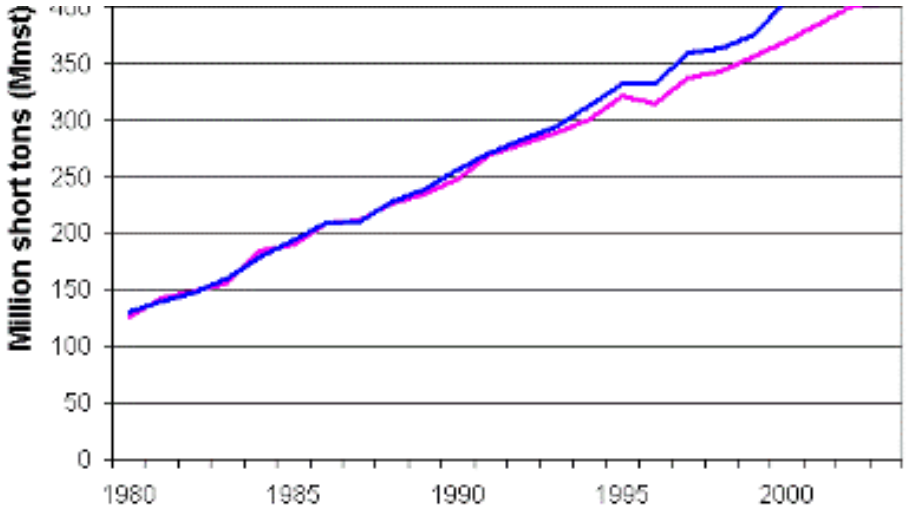
India's government has been considering reforms in its natural gas pricing mechanism, which is currently set by the government. Deregulation has been delayed several times, and buyers of natural gas from private sources such as the LNG terminal at Dahej pay prices much higher than those purchasing from the state-owned suppliers. With the shortage of natural gas and willingness of some consumers to pay more, deregulation would likely lead to higher prices if implemented.

Coal

India is the world's third-largest coal producer.

Coal is the dominant commercial fuel in India, satisfying more than half of India's energy demand. Power generation accounts for about 70 percent of India's coal consumption, followed by heavy industry. Coal consumption is projected in the International Energy Outlook 2005 to increase to 544 million short tons (Mmst) in 2010, up from 431 million short tons (Mmst) in 2003. India is the world's third largest coal producer (after China and the United States), so domestic supplies satisfy most of the country's coal demand. Indian coal generally has a high ash content and low calorific value, so most coking coal must be imported. Major Indian coal fields are found in Bihar, West Bengal, and Madhya Pradesh.



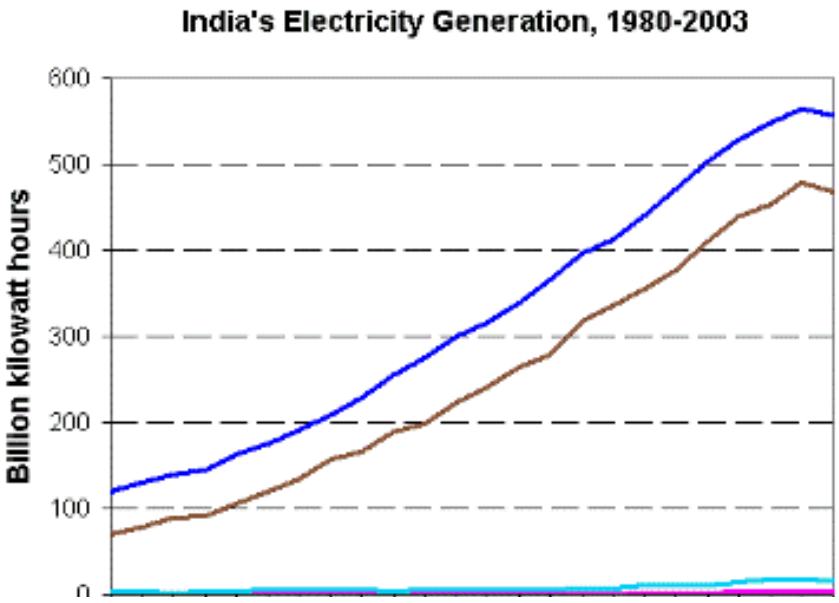


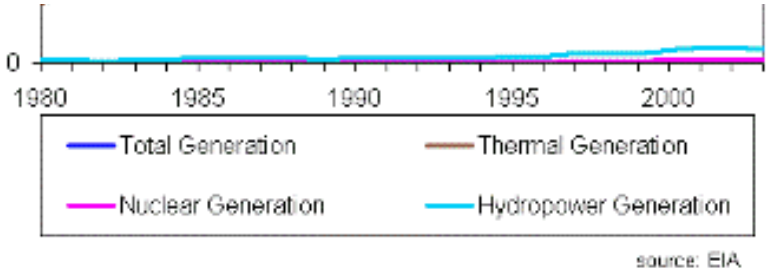
The Indian government controls almost all coal production, which has been plagued by low productivity, distribution problems, and an increasing loss of domestic market share to higher quality, less expensive imports. Nearly all of India's 390 mines are under Coal India Ltd. (CIL), which accounts for about 90 percent of the country's coal production. Current policy allows private mines only if they are "captive" operations which feed a power plant or factory. The current government has called off plans for further coal-sector liberalization in the face of strong opposition from labor unions.

Electricity

India currently suffers from a major shortage of electric generating capacity. India is trying to expand electric power generation capacity, which is seriously below peak demand at the present time. Although about 80 percent of the population has access to electricity, power outages are common, and the unreliability of electricity supplies is severe enough to constitute a constraint on the country's overall economic development. The government has targeted capacity increases totaling 100,000 megawatts (MW) over the next ten years. As of January 2003, total installed Indian power generating capacity was 126,000 MW.

The drive to increase the country's generating capacity, along with the general trend toward economic liberalization in India in the 1990s, led to much interest among foreign investors in setting up Independent Power Producers (IPPs) in India. While dozens of projects were approved, most of the largest projects were stalled by delays in regulatory approvals and in some cases failure to secure adequate financing. India's state electricity boards (SEB's), which run the power distribution infrastructure and own most current generating capacity, are in very poor financial shape, with many of them technically insolvent. One reason is the sale of power at subsidized rates, which does not cover costs (particularly in the agricultural sector). Other problems include the high level of transmission and distribution losses and widespread power theft. Since the SEBs would be the main purchasers of power from IPP projects, resolving their financial problems is critical to attracting the capital necessary to ensure the country an adequate supply of electric power.





source: EIA

In July 1998, the Indian government announced an easing of rules related to foreign investment in the power sector. Proposals for investments up to 15 billion rupees (about $350 million) involving up to 100 percent foreign equity now will be approved automatically. Such approval will be given for investments in generation or distribution from hydroelectric, coal, lignite, oil, or gas power plants, but not for nuclear plants and associated distribution networks. The earlier policy had allowed for only up to 74 percent foreign equity. Still, the financial problems of the SEBs have prevented substantial foreign investment from flowing into India's electric power sector.

From the mid-to-late 1990s, India's government approved a large number of "mega-projects," defined as plants with capacity of more than 1,000 MW for thermal plants and more than 500 MW for hydroelectric plants, from the mid-to-late-1990s, but project approvals have often not led to construction. The 740-MW initial phase of the Dabhol LNG-fired power plant began operation in May 1999, and Phase II, which would add 1,440-MW of capacity, is about 90 percent complete. Payment problems with the Maharashtra State Electricity Board (MSEB), however, prompted Enron-backed Dabhol Power Corporation (DPC) to serve notice of breach of contract on MSEB in May 2001. Construction on Phase II was halted in June 2001. General Electric and Bechtel acquired Enron's 65 percent stake in the project adding to the 10 percent they each owned prior Enron's bankruptcy, and settled claims against the governments of India and Maharashtra state in July 2005. The renamed Ratnagiri project is expected to be completed and begin commercial operation in mid-2006.

Due to financial problems of the SEBs, a large number of foreign firms cancelled or delayed power generation projects in India between 1999 and 2001. Most new generating capacity in India in the last four years has been financed with domestic capital, or with the help of international financial instututions (IFIs) such as the Asian Development Bank (ADB). The Electricity Act of 2003 was designed to remedy many of the problems besetting India's power sector, and to attract capital back to large-scale power generation projects. The Act envisioned the unbundling of SEB assets into generation, transmission, and distribution companies, and the eventual privatization of these assets. Access is to be opened up to the SEBs transmission grids, allowing power producers to sell directly to large industrial consumers. Also included is a one-time financial bailout of the SEBs, which packaged their $7 billion in debts to the federal-level National Thermal Power Corporation (NTPC) into bonds at concessionary interest rates. The new Congress-led government which took office in May 2004 remains committed to power sector reform, though implementation of some aspects of the program may slow down. A June 2004 deadline for open access to transmission lines was delayed.

In July 2005, the United States signed an agreement to facilitate cooperation in the field of nuclear power generation. If ratified by the U.S. Senate, it could pave the way for U.S. sales of nuclear fuels and nuclear reactors to India, which could help India increase the nuclear share of electricity generation.

Profile

Country Overview

President	Abdul Kalam (since July 26, 2002)
Prime Minister	Manmohan Singh (since May 22, 2004)
Location	Southern Asia/3.3 million square kilometers 1.3 million square miles), one-third the size of the United States
Independence	August 15, 1947 (from the United Kingdom)
Population (July 2005)	1.1 billion (2nd most populous country)
Languages	Hindi, 17 other official languages, English
Religion	Hindu (81%), Muslim (12%), Christian (2.3%), Sikh (1.9%), and other (2.5%)
Ethnic Group(s)	Indo-Aryan (72%), Dravidian (25%), Mongoloid, other (3%)

Economic Overview

Minister of Commerce and Industry	Kamal Nath
Currency/Exchange Rate (12/5/2005)	1 US Dollar = 46.37500 Indian Rupees
Inflation Rate (2005E)	4.7%

Gross Domestic Product (2005E)	$808 billion
Real GDP Growth Rate (2005E)	6.9%
Unemployment Rate (2005E)	11.1%
External Debt (2005E)	$146.4 billion
Exports (2005E)	$89.1 billion
Major Trading Partners (2005)	United States, Japan, United Kingdom, Germany, Russia
Imports (2005E)	$127.3 billion
Current Account Balance (2005E)	-$13.1 billion

Energy Overview

Minister of Petroleum	Mani Shankar Aiyar
Minister of Power	P. M. Sayeed
Proven Oil Reserves (January 1, 2005E)	5.4 billion barrels
Oil Production (2005E)	838.9 thousand barrels per day, of which 76% was crude oil.
Oil Consumption (2005E)	2,524.7 thousand barrels per day
Crude Oil Distillation Capacity (2005E)	2,254.6 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2005E)	30.1 trillion cubic feet
Natural Gas Production (2003E)	1 trillion cubic feet
Natural Gas Consumption (2003E)	957 billion cubic feet
Recoverable Coal Reserves (2003E)	101,903.2 million short tons
Coal Production (2003E)	403.1 million short tons
Coal Consumption (2003E)	430.6 million short tons
Electricity Installed Capacity (2003E)	126.3 gigawatts
Electricity Production (2003E)	556.8 billion kilowatt hours
Electricity Consumption (2003E)	519 billion kilowatt hours
Total Energy Consumption (2003E)	14 quadrillion Btus*, of which Coal (52%), Oil (34%), Natural Gas (7%), Hydroelectricity (5%), Nuclear (1%), Other Renewables (0%)
Total Per Capita Energy Consumption (2003E)	13.2 million Btus
Energy Intensity (2003E)	4,825 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2003E)	1,024.8 million metric tons, of which Coal (65%), Oil (30%), Natural Gas (5%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)	1 metric tons
Carbon Dioxide Intensity (2003E)	0.4 Metric tons per thousand $2000-PPP**
Environmental Issues	Deforestation; soil erosion; overgrazing; desertification; air pollution from industrial effluents and vehicle emissions; water pollution from raw sewage and runoff of agricultural pesticides; tap water is not potable throughout the country; huge and rapidly growing population is overstraining natural resources.
Major Environmental Agreements	A party to the Antarctic-Environmental Protocol, Antarctic Treaty, Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands and Whaling.

Oil and Gas Industry

Organization	Petroleum - Oil and Natural Gas Corporation (ONGC), Oil India Ltd. (OIL), Indian Oil Corporation (IOC); Natural Gas - Gas Authority of India Limited (GAIL); Coal - Coal India Limited (CIL); Electric Power - National Thermal Power Corporation (NTPC), National Hydroelectric Power Corporation, State Electricity Boards
Major Oil/Gas Ports	Oil - Bombay, Cochin, Haldia, Kandla, Madras, Vizag; LNG – Hazira, Dahej
Major Pipelines (capacity, Mmcf/d)	Oil--Salaya-New Delhi, Barauni-Digboi, Kandla-Bhatindu (products); Natural Gas--Hazira-Bijapur-Jagdishpur (HBJ)
Major Refineries (capacity, bbl/d)	Reliance-Jamnagar, 660,000 bbl/d, Koyali-Gujarat, 185,100 bbl/d; Mangalore, 180,000 bbl/d, Mathura-Uttar Pradesh, 156,000 bbl/d; Mahul-Bombay (Bharat Petroleum), 120,000 bbl/d; Madras, 130,660 bbl/d, Mahul-Bombay (Hindustan Petroleum), 111,700 bbl/d

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.
**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

EIA - Country Information on India

U.S. Government

CIA World Factbook - India
U.S. State Department Background Notes on India
U.S. Embassy in India

General Information

Indian Embassy in the U.S.
India's Ministry of Power
India's Ministry of Petroleum and Natural Gas
India's Ministry of Environment and Forests
The Energy and Resources Institute
Tata Energy and Resources Institute -- North America

Sources

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Petroleum Economist
Petroleum Intelligence Weekly
Press Trust of India wire service
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The Statesman
Times of India
U.S. Energy Information Administration
World Gas Intelligence

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