Chapter IV

India's Development Perspective

India has the history and experience of more than half a century of development initiative within a democratic framework. The development strategy adopted was of course influenced in the beginning by socialistic egalitarian philosophy, carried out through centralized planning, with state assuming commanding heights of the economy. But that was just the commencement of the experiment. As the country passed through phases of development, developmental policy took note of the ground realities as these emerged, and Indian policy makers came with ingenious policy prescriptions and models, which has given unique learning experience to students of India's development economics.

Each sector in India presents an amazing field of study in development. It is a country with huge population, diverse natural resources and a pool of talented manpower. The country's development history, rationale and strategy are a wide field of study and there is an integral relationship amongst the sectors, as each of them impact on the other. There is of course a central theme of our development strategy, which is alleviation of poverty with sustainable environmental consideration. It is interesting to know how India's development process has taken its course keeping all the sectors unified to its central theme of development, at the same time meeting the realities of sectoral developments.

In this chapter, India's development history has been analyzed with a historical perspective, linking it to Oil sector.

The chapter is organized in terms of the following sections:

1. Features of India's development plan
2. Oil Sector in India's Industrial Policy Statements
3. Development consequence and outlook
4. Beginning of reforms

5. Economic reforms in progress
6. The results of reforms
7. Growth strategy in X Plan
8. Performance of economy in 2004-05
9. Energy needs of a growing economy (IX Plan)
10. Priority areas in oil sector in successive Five Year Plans

Section 4.1: Features of India's Development Plan

4.1.1 Objective of Development

The III Five Year Plan document has put the basic objectives of India's planned development as follow:

'The basic objective is to provide sound foundations for sustained economic growth, for increasing opportunities for gainful employment and improving living standards and working conditions for the masses.'

This founding objective has been modified in the light of development experience and the changing realities that have emerged during last fifty years. That perspective has been added in the X Five Year Plan document. X Plan has added two additional dimensions, namely (a) enhancement of human well being; (b) equitable development process. A third dimension superimposed is to develop economy's productive potential through high rates of growth.

Elaborating on these three concepts, X Plan documents reads: 'The last decade of the 20th century has seen a visible shift in the focus of development planning from the mere expansion of production of goods and services and the consequent growth of per capita income, to planning for enhancement of human well being. The notion of human well being itself is more broadly conceived to include not only consumption of goods and services in general but more specifically to ensure that the basic material requirements of all sections of the population, especially those below the poverty lines, are met and that they have access to basic social services such as health and education.'

On the issue of equity, the X Plan document reads, 'In addition to social development measures, in terms of access to social services, an equitable development process must provide expanding opportunities for advancement to all sections of the population. Equality of outcomes may not be a feasible goal of social justice but equality of opportunity is a goal for which we must all strive.'

On the issue of building economy's productive capacities, the Plan document reads, 'It is absolutely essential to build up the economy's productive potential through high rates of growth, without which we cannot hope to provide expanding levels of consumption for the population.'

4.1.2 Features of Development Strategy

India's development strategy since the beginning of first Five Year Plan in 1950 had the following features:

There was a focus on self sufficiency to avoid dependence on imports and hence excessive external influence on domestic affairs. This view was understandable in a country emerging from long colonial subjugation. It translated into an emphasis on rapid industrialization, especially creation of domestic heavy industries, producing capital goods. The pattern of industrialization focused on reducing dependence on foreign exchange through import substitution. Trade restrictions were the inevitable side effects of these policies.

To ensure that investible resources were channeled to the right industries and given that India was capital poor, the policy makers devised a combination of heavy public sector and controlled private sector involvement.

4.1.3 Role of Private Sector

India always allowed private sector activity. But to be consistent with the planning strategy, there had to be ways to control the private sector and this was done through investment licensing, import licensing, controls on the use of foreign exchange, control on credit allocation and control on prices. Also the threat always remained that the government would enter even those industries which were not explicitly reserved for the public sector (the threat was realized in 1969 when Mrs. Indira Gandhi nationalized a number of private banks). In addition to maintaining coherence with the planning framework, another reason to control the private sector was to avoid undue concentration of economic power in the hands of few.

The III Five Year Plan document has put the issue of private vs. pubic in right perspective:

'With the rapid expansion of the economy, wider opportunities of growth arise for both the public and the private sectors and in many ways their activities are complementary. The private sector includes not only organized industry but agriculture, small industry, trade and a great deal of activity in housing and construction and other fields. Progressively, it has to take the form of cooperative effort. Among the main objects of program undertaken by the Government are the expansion of facilities for the development of agriculture, especially irrigation,

the building up of economic overheads such as rail and road transport, port and power stations and the expansion of education, health and other social services. Activities which are promoted through these facilities are in considerable part in the hands of private individuals and organizations and increasing numbers among them are being assisted. Thus, the Five Year Plans enlarge the scope for individual initiative as well as for cooperative and corporate effort. It is mainly within a limited area in the field of large scale industrial enterprise that the question arises whether, in the special circumstances of the country, in accordance with the Industrial Policy Resolution of April 1956, and in view of social goals aimed at, particular tasks should be assigned to the public sector or to the private sector. In the context of the country's planned development the private sector has a large area in which to develop and expand. It has to function, of course, within the framework of national planning and in harmony with its overall aims, and there must be continuous stress on undertakings in the private sector acting with an understanding of obligation towards the community as a whole. At the same time, it is essential to ensure that the opportunities available in the private sector do not lead to the concentration of economic power in the hands of small numbers of individuals and business and that disparities in income and wealth are progressively reduced.'

X Five Year Plan, while outlining the development strategy, has stated that, 'industrial growth in future will depend largely upon the performance of the private sector and our policies must therefore provide an environment which is conducive to such growth.'

4.1.4 Control & Protection Measures

Additional mechanism to enforce this objective included the Monopoly and Restrictive Trade Practices Act (MRTP) enacted in June 1970, which imposed severe constraints on expansion by large firms and groups, and the Foreign Exchange Regulation Act (FERA).

In order to encourage labor intensive manufacture in the private sector, significant benefits were given to small scale firms (these included tax concessions and holidays, preferential access to credit, subsidized interest rates and preferential treatment in procurement by the government). In addition, some goods were exclusively reserved for production by the small scale sector.

At the same time however significant protections for labor, especially in large firms, were enacted. For example, an amendment to the Industrial Disputes Act (1947) in 1976 made it compulsory for firms with 300 or more workers to seek the permission of the relevant government to dismiss workers. In 1982, the ceiling for seeking permission to dismiss workers was lowered to 100 workers.

All these controls and protections were meant to negate the evils of so called capitalistic elements of development.

Section 4.2: Oil Sector in India's Industrial Policy

4.2.1 Industrial Policy Resolutions

Oil Sector (referred to as 'mineral oil' in Industrial Policy Statements) was in the exclusive list of industries which were reserved for Public Sector in Industrial Policy Resolution 1948 (IPR 48). IPR 48 was adopted by Parliament on April 6, 1948. It was the first official resolution on industrial policy after independence, which emphasized the need for the state to play progressively more active role in the development of industries. IPR 48 delineated areas of public sector and those of private sector for investment and production. Government reserved for itself the manufacture of arms and ammunitions, the production and control of atomic energy and the ownership and management of railway transport. Another six industries were set aside as the exclusive responsibility of the state. Inclusive of Mineral Oil, these were:

1. **Mineral Oils**
2. Coal
3. Iron & Steel
4. Aircraft manufacturing
5. Ship building
6. Manufacturing of telephone, telegraph and wireless equipment, excluding radio receiving sets

It is notable that IPR 48 did not reject private investment in the above industries. It allowed that the state could secure the cooperation of private enterprises if it was deemed necessary to the national interest.

Industries (Development and Regulation) Act of 1951 (IDRA 51) was enacted in order to pursue IPR 48 and the main objectives of industrial policy it sought to achieve were:

1. The regulation of industrial development and canalizing of resources according to planned priorities and targets;

2. Avoidance of monopolies and preventing concentration of wealth;

3. Protecting small scale industries against undue competition from large scale industries;

4. The encouragement of new entrepreneurs to establish industries;

5. The distribution of industrial development around the country on a more widespread basis; and

6. Fostering technology and economic improvement in industries through economies of scale and the adoption of modern processes.

This bill was introduced in Parliament in 1949 and was enacted in 1951, after the formation of Planning Commission and before the First Five Year Plan had been finalized.

In April 1956, Government issued a new industrial policy resolution, IPR 56. IPR 56 declared that Industrial policy had to be governed by the principle laid down in the Constitution, by the objective of socialism and by the experience gained during the years since independence.

Industries were classified into three categories. The first category consisted of industries whose future development was to be the exclusive responsibility of the state; the second consisted of those industries which would progressively become state owned and in which the state was generally expected to take the initiative in establishing new enterprises; and the third category of industries was left for the private sector.

Oil sector (mineral Oil) was in the first category, which was Schedule 'A' (item no.8). All new enterprises set up in industries in Schedule 'A', except where their establishment in the private sector had already been approved, were to be set up only by the state. IPR 56 reaffirmed that this did not preclude the expansion of existing privately owned enterprises, nor the possibility of the state securing the cooperation of private enterprises in the establishment of new enterprises when the national interest so required. There were many industries where private sector coexistence was allowed and Oil Sector was one amongst them.

Government announced its revised industrial licensing policy in February 1970 (ILP 70). The new policy reclassified industry into three sectors: the core sector, the joint sector and the middle sector. The core sector was defined as the heavy investment sector in certain industries whose projects required heavy investment exceeding Rs 50 million. Oil Sector was in the core sector.

Again in February 1973, another industrial licensing policy was announced in the context of specific priorities and production objectives to be laid down in the V Five Year Plan draft. Under the new policy of 73, the core sector list was expanded from nine to nineteen industries. However, the status of Oil sector remained unchanged, as it was reserved for the public sector.

Another Statement of Industrial Policy was issued in December 1977 by Janata Party and yet one more in 1980. There was no change as far as policy orientation towards Oil Sector was concerned.

4.2.2 Oil Sector was an Exception

India's Oil Policy within the overall framework of India's development policy had its own course, at times making Oil Sector an exception. When in 1947, India woke to freedom; the bulk of her oil requirement was being imported. Even III Five Year Plan (1961-66) states, 'there is at present no production of oil within the country except for a small quantity obtained from the Digboi area in Assam.' Marketing of oil in India was done by three multinational companies, namely, Burmah Shell, Standard Vacuum and Caltex.

Though IPR 48 specified that all the new units in the oil industry would be set up only under Government ownership, but for seven years after the declaration of that resolution, there was no public sector unit in the Oil Industry and permission was given in 1951 to private foreign companies to build refineries under their exclusive ownership. In fact, India did not have any 'Oil Plan', till II Five Year Plan, as the general understanding amongst policy makers (K.D. Malaviya was an exception) that there was no oil in India and secondly, there was no funds and technology available for getting into that sector.

In December 1955, the Oil & Natural Gas Division was created as a part of the Ministry of Natural Resources and Scientific Research. Very soon, it was formed into a Commission and in October 1959, the Oil & Natural Gas Commission became a statutory body under an act of Parliament. A second Crude Oil producing company was formed in 1959 to exploit the oil fields of Assam, discovered in 1953-56 by the Assam Oil Company in partnership with Burmah Oil. The latter, the parent company of Assam Oil, was not allowed to exploit, refine or market the oil of Assam alone. A pipeline was constructed from oilfields to the refineries by OIL, but the Refineries of Nunmati (Assam) and Baruani (Bihar), erected to process the crude of these new oilfields, were constructed by the Government with the assistance of Rumanians and Russians and owned exclusively by the Government. These two refineries and subsequently the Koyali refinery of Gujarat were brought under the ownership of a state owned company, Indian Refineries Ltd, formed in 1958.

The Government entered the sphere of marketing in 1959, when the Indian Oil Company was formed.

The Indian oil scene in the first decade of planned development period (1950-1960) was: 'consumption of oil products in India had risen from 3 million tonnes in 1951 to 4.8 million in 1956 and 5.7 million in 1958. It was forecast that it would be 7 million tonnes by 1960, at the end of the II Five Year Plan. With the growth of national income and the natural expansion of the economy, the demand for oil by 1965 would, the Planning Commission estimated, jump to 10 million tonnes. As against this, the domestic production was about 400,000 tonnes from the lone Digboi oilfield.' (Kaul, 1991)

4.2.3 India's Oil Policy began in III Five Year Plan

It was not easy for policy makers in the early years of planning to formulate an 'Oil Policy'. Oil policy had unique sets of compulsions and constraints, which were altogether different from those in other sectors.

1. First, there was an urgent need to explore indigenous oil and build a reserve of at least 12 to 15 million tonnes of production per annum.

2. Second, oil exploration and production was technology intensive, capital intensive and fraught with risk. Therefore, it required collaboration with multinational oil companies.

3. Third, allowing foreign investment in core sector like oil meant diluting the spirit of Industrial Policy Resolutions of 1948 and 1956.

4. Fourthly, agreeing the terms and conditions with foreign oil companies, which are necessarily favorable to India's national interest was a daunting task. The critical issues of conflicting interests were regarding surrender of areas, profit sharing, royalties or outright payment.

'Problem before India was not merely one of developing oil resources but doing so in the context of a large number of other things which consumed money, including substantial amount of foreign exchange. The burden on India during the next ten years would be a terrifying one and it was not at all clear how it would be met. Thus the question of oil exploration and exploitation has to be seen in the context of this larger picture. It thus became important that India should not only make good in oil as rapidly as possible but also that this should not be at the cost of other development program.' (Kaul, 1991)

The approach of the Government was summed up in a policy paper of Ministry of Steel, Mines and Fuel as follow: (Kaul, 1991)

a) Public sector enterprise in oil should be substantially enlarged and necessary resources must be found to help implement its programs.
b) The most promising areas should be earmarked for exclusive exploitation by the public sector.
c) In any future arrangement with foreign oil companies:

   I. Sufficient and effective means must be provided to enable Government to guide policy and operations;
   II. No tax relief or other fiscal concessions should be allowed, other than in the most exceptional cases and for reasons to be clearly set out, with an assessment of their effects;

III. Speed should be ensured in operations and a physical program to work and estimates of minimum expenditure during a specified period should be settled beforehand;
IV. It should be obligatory on the private party to undertake employment and training of Indian personnel in the project to the fullest extent and also to agree to a program of training of Indian in India and abroad for the purpose of other exploration projects; and
V. Refining of petroleum and its marketing should not be included in the arrangements for exploration and production.

If the national imperative of industrialization as set out in successive Industrial Policy Resolutions have been compromised for Oil Sector from the very inception, there were sound justifications for it, as explained in the paragraph below:

'To achieve self-sufficiency with any measure of reasonable certainty, it was found necessary to provide some opportunity to foreign parties interested in exploring oil in India. The foreign exchange shortage combined with the fact that oil exploration and production was capital intensive and that it was desirable to spread the risk of infructuous search. At the same time India had to be cautious, because of the risks and embarrassment involved in inviting international oil companies to undertake exploration and exploitation. Firstly, these foreign companies usually wished to be left entirely free to create their own pattern of organization and expenditure, as their system of operation was usually, adapted to a situation of non-interference by governments of host countries. Secondly, the foreign explorers, while asking for areas for exploration, tended to press for the privilege of refining the oil and marketing the products, a tendency which had to be resisted so as to ensure that a fair return accrued to the country from the oil found and produced and that Government should be able to exercise control over the utilization of the crude mined. Thirdly, most of the international oil companies were backed by their respective Governments which, in course of time, strove to acquire certain rights under the guise of protecting their national capital and the large revenue they derived from the activities of their companies in the host country. The history of oil in several major producing countries is the history of political pressure exercised by foreign countries.' (Kaul, 1991)

There was no legislation in India regulating crude oil mining prior to independence, though there were legislations on mining since 1894. It was only after independence that the Indian Bureau of Mines (IBM) was set up in 1948 as the central agency for coordinating mineral leases and the mineral policies of different states. The Central Government enacted the Mines and Minerals (Regulation and Development) Act 1948, which came into force in October 1949. The Petroleum Concession Rules, 1949 were framed under this Act.

Against this backdrop, II Five Year Plan (1955-60) stated, 'in view of the small size of the capital and intermediate goods industry, special emphasis has to be

placed on industries such as steel, coal, oil, electric power, machine building and chemicals. These must grow speedily, if the requirements of further industrialization are to be met in adequate measure from the country's own resources. In other words, development of these industries is an essential condition of self reliant and self sustained growth.'

The III Five Year Plan (1961-66) laid the basis for the foundation of India's Oil Industry in the direction of complete nationalization that ultimately took place in 1976. The relevant portion from III Plan document reads:

'The program relating to mineral oil envisages:

a) exploitation by the Oil India of the reserves proved in their leasehold areas in Assam,
b) further exploration by the Oil and Natural Gas Commission to locate and prove reserves of oil and establish additional production,
c) the completion of the refineries under construction at Gauwhati and Barauni, respectively and establishment of a new refinery in Gujarat with a capacity of about 2 million tonnes,
d) establishment of pipelines for the transport of petroleum products, and
e) establishment of facilities for the distribution by Government agency of the products of the public sector refineries and the deficit products imported on favorable terms.'

The III Five Year Plan makes a mention, 'Government have also decided to invite foreign oil explorers to join in the search for oil in India subject to mutually acceptable terms.'

During early 1960s, Government took a number of steps to destroy the monopolistic position of the Burmah Shell, Caltex and Esso group. These companies were denied the opportunity to build any new refinery partly because of their reluctance at the beginning to agree to the Government's majority shareholding in the Company. The import trade in oil products was made an exclusive privilege of the Indian Oil Corporation from 1965 and the target of making the corporation the leading marketing company of India was achieved by 1976. By then Burmah Shell was nationalized as Bharat Petroleum and Caltex and Esso were merged and nationalized as Hindustan Petroleum.

Government made a policy to invite capital investment in the form of equity from Oil Exporting Developing Countries (OEDC). OEDC countries which have large financial resources but not the type of technology that the country needs, it was decided that foreign investment proposals from these countries need not be associated with transfer of technology from the equity holder and that such investment may be of portfolio nature. Investment up to 40 percent in the equity of new venture without technology transfer will be permitted in specified industries. Portfolio investments in such ventures were also permitted. A number

of tax incentives were provided for such industries. Repatriation of capital along with appreciation in capital stock was also freely allowed.

4.2.4 Government's Conflict with Multinational Oil Companies

The expanding role of the Government in the affairs of the oil industry and the branching out of the public sector into different segments of the oil industry led to a series of conflicts with the established major international oil companies then operating in India.

One of the first conflicts was over the question of exploitation of Nahorkatiya oilfields, discovered in 1953 by Assam Oil, Burmah Oil's subsidiary. Government refused the latter any right to refine or market this oil and only allowed joint ownership in crude oil production. This was contrary to the marketing interests of Burmah Oil, whose loss of import trade in oil products (as a proportion to total consumption) consequent to the discovery of this oilfield more than offset its share in the profit of Oil India. As a protest against this restrictive policy, Burmah Oil suspended its exploratory activities in India for a while.

On the part of the Government, on the other hand, there was a feeling that the major oil companies were not taking enough interest in exploratory activities. There was also widespread resentment that companies were unwilling to share their technical knowledge with the Government and also that they were providing few opportunities for the training of Indian personnel.

During 1957 to 1959, the policy makers at the highest level in India came to a realization that the multinational oil companies are charging high price of oil to Indian consumers through a pricing method known as 'Valued Stock Account' (VSA). Basically, it is same as import parity price, but the FOB price considered was of Mexican Gulf, as there was no Platts posted price of refined products in the Persian Gulf. The multinational Oil companies were loading excessive charges in the price build up, which was not audited by any Government agency, not even by their internal auditor. It came to light that the multinational oil companies earned higher profits in India than anywhere else in the world.

There was a dispute to extend the tariff protection granted to multinational oil companies for more than 10 years. It came to be known that the concessions and assurances given in the refinery agreement were to enable the companies to earn 7.5 percent return on capital invested. The operation of the refineries since 1955 had yielded returns on capital much in excess of the reasonable return envisaged during the negotiation on the agreement.

Another cause of conflict was the refusal of the Government to allow expansion of refining capacity under the ownership of the established major international companies unless the latter agreed to scrap the refinery agreements of 1951 and 1953 and also to import crude oil at prices comparable to the offers made by the Russians.

The conflict with oil majors came to a head when these companies refused to refine Russian crude oil, secured at very cheap price by the Government, in their refineries in 1960.

Section 4.3: Development Consequence and Outlook

4.3.1 1950 to 1970

During 1950 to 1970s, barriers were erected against foreign competition to protect domestic enterprise. The idea was, this would give a respite to domestic infant industries, allowing them a nurturing environment while they would grow up and become competitive. But the nurturing environment proved so comfortable that the infants adopted never found growing up. The example was the Ambassador car—a version of the Oxford Morris which remained virtually unchanged over 40 years of production. The country waited with baited breath for every new model to see what the shape of the headlights would look like—for it seemed that was all that changed.

A second objective was to use scarce capital resources in the most effective way possible. To do this, the so-called "commanding heights", such as steel, petrochemicals, and heavy electrical, were commandeered by the public sector. In yet other sectors, private entrepreneurs were allowed in, but heavily constrained by regulations on how much, and what they could do, and where. But because much of the economy was in the hands of those who did not care about profits (public sector), and in the rest the profitable could not grow (private sector), the outcome was that India used its scarce capital very inefficiently.

Because employment was so important for India, encouragement was given to small-scale industries by reserving specific areas of production for them. But because firms could not grow to efficient scale, production was unprofitable, so few jobs were actually created. Government sought to protect unskilled labor in large firms—for example, through laws against firing. But this again meant that large firms stayed away from labor intensive industries, so fewer jobs were created. Moreover, firms resorted to temporary workers or stayed small so that labor laws did not apply. In short, labor laws neither led to the creation of more jobs, nor to the protection of most workers.

An overarching principle was to prevent the concentration of wealth in a few hands. This was another rationale for licensing, as also the Monopolies and Restrictive Trade Practices Act. But again, in an attempt to use government rules to eliminate privilege, the system created the opposite—the industrialist who magically got all the licenses as well as the requisite financing.

These policies held India's growth to a low, but not disastrous level, famously dubbed the 'Hindu rate of growth'. Indian industry was inefficient, not innovative, and exported very little. Surprisingly, these policies did not mean that India produced less manufacturing goods as a whole for a country at its stage of development. It did mean, however, that the composition of its manufacturing activity was unusual: India produced more than its share of capital and skill intensive goods (public sector petrochemical plant), while underutilizing what it had in plentiful supply—its abundant labor or even its innovative capacity.

The silver lining was that these constraints caused India to be highly diversified in its manufacturing even back in 1980. And a portion of its labor force was highly skilled, a clear legacy of Pundit Nehru's emphasis on science, higher education, and also leading edge technologies for the public sector. Thus India had the capabilities provided the constraints were loosened and the right opportunities emerged. And that is indeed what happened from 1980 onwards through phased reform process.

4.3.2 1980 Beginning

The highly protective industrial policy of the past started to be reversed in the beginning of 1980s. In the later half of the 1970s, the pace of India's economic growth was relatively smooth. The V Five Year Plan (1974-79) had achieved a 5.2 percent real annual GDP growth which surpassed the growth target of 4.4 percent. The country enjoyed good agricultural production and a low rate of inflation, as well as a comparatively healthy balance of payment and increased foreign exchange reserves, thanks to increased remittances from Indian migrants living abroad and a comparatively good foreign trade performance.

However, in 1979, with the rise in international oil prices, the cost of imported oil and oil products rose sharply and consumer prices showed a marked rise due to a severe drought which caused food shortages. At the same time, industrial production remained stagnant. The result was a big drop of – 4.8 percent in economic growth in 1979-80. The increase in oil prices and unfavorable weather conditions revealed the vulnerability of India's economic structure and forced the country to face up to the need to cope quickly with a worsening balance of payment.

With the hike in international oil prices, the cost of imported oil and oil products jumped. At the same time, other imports also rose sharply and with exports failing to keep pace, India's trade deficit showed a steep rise, while the balance

of current account together with balance of payments worsened. Even if India were to meet the immediate crisis with measures such as using some of its foreign exchange reserves accumulated during the 1970s, obtaining further foreign assistance and relying on aggressive borrowing, some fundamental and long term form of economic restructuring was necessary.

Improving the trade balance depended on increasing exports and holding down imports. Both required strengthening and expanding domestic production. Measures to cope with oil imports which accounted for 30 to 40 percent of all imports were crucial to hold down overall imports. Moreover domestic production needed to be expanded to hold down large volumes of other imports such as iron and steel, cement, paper, fertilizer and foodstuffs. Industries whose products would replace imports had been given high priority by successive governments, but progress had been slow. In fact, protective measures had the opposite effect of lowering technological and productive levels in many sectors.

Under these circumstances, to promote domestic industries as an alternative to imports, it was essential that productivity and the quality of goods be raised. But to do so, the bottlenecks in production had to be overcome in goods and services that were basic to the economy, such as electricity, coal and transportation. Other pertinent issues involved were the quality, cost and availability of machinery and of basic industrial material and products. There was also the problem of technology and capital availability. Consequently, India was faced with the need for a comprehensive program covering all the above issues.

In July 1980, the government announced its industrial policy which was a mixture of political statement keen to show the government's eagerness to attain social justice in economic development and at the same time supporting the resumption of the economy's uninterrupted growth through optimum utilization of existing capacity as well as expansion of industries.

The industrial policy of 1980 set for the following socio-economic objectives:

- Optimum utilization of existing capacity
- Maximizing production and achieving higher productivity
- Higher employment generation
- Correction of regional imbalances through preferential development of industrially backward areas
- Strengthening the country's agricultural base by giving preferential treatment to agro-based industries and promoting optimum inter sectoral cooperation
- Faster promotion of export oriented and import substitution industries
- Promoting economic federalism with an equitable spread of investment and dispersal of returns amongst widely distributed and small but growing enterprises in rural as well as urban areas, and
- Consumer protection against high prices and bad quality

Starting around 1980, the Indian economy became a veritable dynamo, posting an average growth of nearly 6 percent per year over the last twenty five years. Despite the inevitable unfavorable comparisons with China, very few countries have grown so fast for such a prolonged period of time, or reduced poverty so sharply.

In 1980, Government's attitudes towards the economy, and the private sector in particular, started to change. Pro-business reforms were set in motion, with liberalized access for domestic firms to capital imports, technology, and foreign exchange, and the gradual relaxation of industrial licensing. Later, in the aftermath of the foreign exchange crisis in 1990, broader reforms that were more genuinely pro-competition were introduced: barriers to foreign trade were dismantled, inward foreign investment was liberalized, and important services such as telecommunications and finance were opened up.

The idea of economic federalism was a new device in the Industrial Policy of 1980. India also started becoming politically more decentralized. The decline of the Congress' power and the rise of regional parties conferred greater political autonomy on the states, translating to autonomy even in economic sphere. States increasingly prospered, or not, based on what they did rather than because of actions at the center.

The new economic policy after 1980 put greater emphasis on private enterprises; the intention being to mobilize resources through the modernization of technologies and the creation of conditions for more dynamic industrial progress. There was another factor which compelled the government to make this change. In November 1981, Government of India decided to take advantage of the International Monetary Fund's Extended Fund Facility and borrowed a total of 5 billion SDR over a three year period to overcome the country's balance of payments difficulties after the second oil price shock. As part of IMF conditionality, Government pledged to carry out a mid term economic adjustment incorporating measures to expand production and capital investment by liberalizing imports and introducing new technology and to control inflation through financial and fiscal measures.

In April 1982, Government announced an import / export policy for 1982-83 which was the beginning of trade liberalization. This was followed by import-export policies for 1983-84 and for 1984-85, in which Open General License (OGL) list was expanded, the procedures and conditions for import export licenses were relaxed, the list of restricted imports were enlarged and the foreign exchange quota for imports was expanded.

4.3.3 1984 Onwards

The pace of liberalization was enhanced with the establishment of Rajiv Gandhi government in October 1984. The government's budget of 1985-86 presented a series of proposals detailing the new economic policy. Behind the new economic policy, there were following assumption incorporating the realities of economy and realization of policy makers.

- The private sector is more efficient than the public sector in producing goods and creating employment. It is therefore necessary to offer fiscal and other incentives to the private sector.
- Private sector output will increase if taxes are reduced.
- The government's tax receipts are unproductive, or are at least less productive than the funds released through tax relief.
- Relief in direct taxes increases demand and / or savings because of the increase in disposable income.
- If tax relief granted to the private sector leads to a shortage of government resources, then it is justifiable to curtail the government's socio-economic commitment. In other words, the planned public sector outlay can be reduced to widen the field for private investment.
- Social justice is not an essential objective of a growing economy. If inequalities have to be increased, in order to achieve the expected results through the private sector, this must be accepted.
- An inflationary deficit in the government budget can be easily absorbed by the economy.

At that time, the role and preserve of public sector was also debated. By then, public sector had expanded considerably its area of activity under the constant nurturing of the government. There were even public sector enterprises, which had started producing goods which only the private sector had once produced. (Example – hospitality industry, food processing, cottage industries) When the policy became growth and productivity oriented, it was natural that debate would be directed against the public sector which came to be known for its inefficiency, low productivity and for being a burden on government finances. The opinion which claimed to review and reassess the role of public sector was based on the assessment that most public sector enterprises were inefficient. Therefore except in the core sector, government needed to privatize, rehabilitate and merge public companies in order to lessen the burden on the economy. Summarily, the following are four reasons for the need to review policy on public sector:

- Several large public enterprises in which huge sums of money had been invested were unable to acquire either technical or financial efficiency. Many public enterprises produced low or negative rates of return and with

a few exceptions they had not shown themselves to be leaders in technical progress.

- While the growth of government expenditure had conferred substantial benefits on the economy, there was great concern over the fast growth of bureaucracy and visible signs of wasteful expenditure.

- Attempts to collect higher tax revenue resulted in the creation of complicated and harsh tax structure which were partly responsible for the creation of a parallel economy.

- The regulatory apparatus led to delays and distortions and, instead of promoting development, was thought to have contributed to the slowing down of industrial growth and to inefficiency. The comprehensively applied licensing procedures and import controls in particular were responsible for such results. They also led to oligopoly conditions and cases of uneconomic production.

Above all, the economy responded with the vigor of an un-caged tiger, as capita growth surged from less than 1 percent a year to over 3 ½ percent, not so much by employing more workers and capital but by using them more efficiently. Surprisingly, though, neither the reforms nor the pick-up in growth have altered India's specialization in capital and skill intensive industries. In fact, the fastest growing services—finance, telecommunications, and business services—are also skill-intensive. In many ways, India is building on the capabilities created before the 1980s, with veterans from the state-owned Bharat Electronics, CMC, or ECIL seeding the companies that were in the vanguard of the software boom, and alumni from the State Bank of India permeating the financial sector to launch the boom in finance.

These developments are mirrored at the state level. With greater decentralization, better run states, such as Delhi, Gujarat, Karnataka, Maharashtra, and Tamil Nadu, have improved the quality of their infrastructure and business climate, attracted more investment, and surged ahead. The pattern of development in these states has been unusual: they seem to have skipped entirely a phase that most high-growth countries in East Asia, went through—of specializing in labor-intensive activities (for example, making clothes or leather goods, or assembling consumer electronics). Instead, these states are behaving more like the United States and Europe, exploiting their diversified skill base and emphasizing skill-based manufacturing (pharmaceuticals, petrochemicals, and auto parts) and especially services.

The auto industry offers a great case study of the effects of liberalization. To start with, the worst fears of the domestic producers were realized. The public virtually abandoned them for the new foreign models. The Ambassador turned almost instantaneously from mass production car to antique, and it is finding a

foreign market as such. But it simply did not make sense for the foreign manufacturers to continue sourcing their sub assemblies from outside India. Instead, they started developing local ancillary manufacturers, and gave them the technological assistance for them to become world-class. Soon India started exporting ancillary automotive products to the developed world.

Telco, capitalizing on the existence of world-class suppliers of ancillaries in India, started producing a state-of-the-art, indigenously-designed car, the Indica. The car had teething problems at first and was rejected by a discriminating public. But Telco engineers went back to the drawing board, fixed the flaws, and brought out a new version that swept the market in its category. From about 50,000 cars in the early 1980s, India produced over 1,200,000 in 2004, and exported 160,000 cars, many to the developed world. The Indian automobile industry offers an example of what trade liberalization and domestic competition can do - potentially some pain in the short run but enormous gain in the long run. Equally important, its success and the success of industries like IT offer young Indians convincing examples that Indian entrepreneur can be globally competitive. The change in mindset towards business is as important as the regulatory and political changes discussed earlier.

4.3.4 Outlook – Infrastructure & Skill Building

Fast-growing states will need more capital and skilled workers as well as, of course, the necessary infrastructure. India has a vibrant financial sector and it should have no problem raising and allocating capital but for one impediment—the government appropriates significant amounts of savings to finance its deficit.

Infrastructure development or lack of it has been a deficiency in the design of reform. It was clear at the start of the economic reform that to globalize successfully, India needed to upgrade its infrastructure - that is, electric power, roads, railways, ports, airports and telecommunications. This upgrade required massive investments and since, the resources needed could not be provided by the public sector alone, government needed to evolve a strategy for attracting public investment in these areas as much as possible.

While this strategy was readily endorsed, it can be said in retrospect that the complexity of the policy challenge was underestimated. Most infrastructure sectors are limited monopolies in some respects and therefore have to be subjected to some regulation. For private investment to take place in these areas it is necessary to create an environment in which the regulatory structure is fair to investors in the sense of (i) reassuring them that they have a reasonable chance of getting a decent return provided they reach expected level of efficiency, and (ii) assuring them of fair treatment in the event of disputes between the investors and the government and also between competing suppliers, some of whom may be public sector organizations. It must also have

credibility with the consumers in the sense of reassuring them that their interests are adequately protected.

Not only does this leave less to allocate to private investment or infrastructure, it is also a source of vulnerability if the country were to rely more on foreign capital. The need to force-feed the fiscal deficit to domestic banks also makes it hard for the country to open the capital account (or to privatize banks), a must if India is to achieve its legitimate aspirations of becoming a world-class financial center.

Availability of adequate skilled workers will continue to remain as a bottleneck. India's universities have not expanded in a manner commensurate with the growing skill intensity of its production. Even as India redresses its previous neglect of primary education, it needs to multiply institutions like the IITs, IIMs and regional engineering colleges on which its current success is based. India's planned development pursuit has to concentrate on building skill and expertise in the field of basic and applied science, management and technology, for which higher education has to be liberalized. To generate the needed resources, not only should we charge a reasonable fee for higher education, while offering scholarships to the truly needy, but also we need to encourage more entry by private and foreign institutions. An uneducated mind is a terrible waste of national resources.

In addition, India also needs to focus on the deteriorating condition of urban living, especially given the increasing rural to urban migration. If India is to be internationally competitive in services, it needs to be able to attract knowledge workers who have attractive options elsewhere. Indian cities need better infrastructure within the existing cities, and new planned townships that can provide the amenities that a discriminating middle class and a growing migrant population want. Much of this primarily requires better planning, management and political will. X Five Year Plan specifically has dwelt on 'social infrastructure' (Section 1.72 to 1.81, Chapter I) and 'economic infrastructure' (Section 1.82 to 1.99, Chapter I) in Vol. I.

Section 4.4: Beginning of Reforms

Beginning early 1980s, Indian economy tilted towards free business away from the controls and repressions of the domestic private sector. The pace of reform accelerated in early 1990s, in the wake of external crisis.

4.4.1 Reforms in 1980s

The key features of reforms in the 1980s were: (i) import liberalization, especially of capital goods and intermediate inputs, primarily through the expansion of the range and number of goods in open general licensing list and through a reduction in canalization; (ii) the extension of export incentives through the tax system and more liberal access to credit and foreign exchange; (iii) the significant relaxation of industrial licensing requirements through direct 'de-licensing' of some industries and through 'broad banding' which permitted firms in some industries to switch production between similar product lines; (iv) decontrol of administered prices of key intermediate inputs.

4.4.2 Reforms in 1990s

The reform of the 1990s included: (i) the abolition of industrial licensing and the narrowing of the scope of public sector monopolies to a much smaller number of industries; (ii) the liberalization of inward foreign direct and portfolio investment; (iii) sweeping trade liberalization including the elimination of import licensing and the progressive reduction of non-tariff barriers; (iv) major financial sector liberalization, including the removal of controls on capital issues, free entry of domestic and foreign, private banks and the opening up of the insurance sector; (v) and liberalization of investment and trade in important services, such as telecommunications. Areas that remained largely untouched by reforms in the 1990s were the labor market; small scale reservations; privatization of non-financial enterprises and of banks; and further agricultural sector reforms.

4.4.3 Immediate Results of Reforms

The reforms are reflected in the sharp acceleration in all underlying measures of growth: for example, the annual average rate of growth of GDP per worker increased from 0.7 percent in the 1970s to 3.9 and 3.3 percent, respectively, in the 1980s and 1990s, while total factor productivity growth increased from -0.5 percent to 2.5 and 1.6 percent over the same time. Between 1980 and 2002, India's share of services in value added went up from 37 percent to 49 percent, while its share of manufacturing in value added remained broadly unchanged at 16 percent, with the decline in agriculture mirroring the performance of services.

The corresponding numbers for employment were 19 percent to 22 percent and 14 percent to 18 percent.

Economic development results from the interaction of growth opportunities with the right fundamentals (the pre-existing capabilities) that allow these opportunities to be exploited. In the conventional view of the Indian development process, there was a long and dark period – the period of controls and import substitution – followed by a burst of sunlight and reforms since 1991. The boom in the IT industry first awakened observers to the fact that the dark age was not all dark, that important cumulative capabilities were being built that yielded rewards with a lag, and that these capabilities were as important as the (largely external) opportunities that sparked the IT boom. In case of India, one key capability was socio-politico-legal institutions: democracy, rule of law, free press, universities and technocratic bureaucracy that recent research shows are crucial to economic development. Another key capability that has been extensively remarked upon in the context of the IT boom is the pool of skilled human capital, built through the technology, management and research institutes, as well as through the public sector, a kind of import substitution effort in skilled human capital development, which was integral to the Nehruvian vision.

One proxy for this latter capability could be the extent to which states were diversified across manufacturing. There are two arguments why the extent of diversification may capture state level capabilities. One simply is that those states that had a vibrant and entrepreneurial private sector should have diversified the most, in response to the pre-1980 distortions (for example, into areas that were not dominated by the public sector). Thus the extent of diversification in the early 1980s captures the vibrancy of entrepreneurship in the state.

Another is to see the diversification as driven by a broader set of forces than only the private sector, and including the public sector. In this view, India's pre-1980s development strategy which led to unusually (compared with other countries) large diversification also created within India a pattern of capability in the different states that played a key role in the economic performance when the constraints placed on the states were lifted in the post 1980 period. Studies have found that states that were closest to the technological frontiers were the ones that benefited most from the reforms of the early 1990s. States with greatest manufacturing capability pre-1980s were the ones that benefited most post 1980s. Engineers who originally were employed by the state owned Computer Maintenance Corporation or Electronic Corporation of India Ltd provided the backbone for many of the computer firms that started up in Bangalore. State owned oil marketing and refining companies like IOCL and BPCL provided the human resources and core competency to the private oil company like Reliance and Essar. Many of the key players in the explosive growth of the financial sector in Mumbai were alumni of State Bank of India. Bharat Heavy Electrical Limited

(BHEL) was a substantial supplier of managerial talent for many private sector firms. Indian Airlines plied the private airlines with highly qualified pilots.

4.4.4 Decentralized Pattern of Development

While the formal reforms at the centre received tremendous publicity, perhaps less noticed was the growing decentralization of policy. The Congress party had held power without a break at the centre since independence, but the aura of invincibility surrounding it started waning soon after Mrs. Indira Gandhi lost the post Emergency election in 1977. Also, even though the congress party was returned to power at the centre through much of the 1980s, a number of states were captured by the opposition, often regional or even single-state parties. The centrifugal forces created by the dispersion of political power did not sit well with the enormous centralization of economic power and the inter-state cross subsidies the centre effected through its investment strategy. This change was about more than the identity and ideology of political actors. It was fundamentally about greater devolution in political and economic power towards the states. Greater political decentralization meant greater decision-making at the level of the states, including on economic issues, not least the ability to attract private sector investment. This was of course facilitated by the gradual dismantling of the industrial licensing system that used regional equity as one of the primary criterion guiding industrial investment.

The rising trend in private investment, as well as the falling trend in public investment over 1971 to 2001 would have contributed to differentiating outcomes between states, with private investment more sensitive to differences in policies across states. The state level capabilities and state level policies and institutions seemed to start mattering in 1990s. With the centre no longer enforcing inter-state equity, divergences in growth rates between states increased.

India's pattern of diversification and growth over the last two decades might reflect the consequences of the peculiar specializations created by the pre-1980 policies. Instead of India's fast growing states reverting to a more traditional pattern of specialization in labor intensive industries, commensurate with Income levels, they appear to have skipped directly to specialization in skill intensive industries (within manufacturing) or to services where they appear to have a comparative advantage (at least vis-à-vis other poor countries).

Studies have revealed a startling fact that shows that Indian states have started behaving like industrial countries at nearly a quarter or one-fifth of their income levels. These states have exhibited a declining share of manufacturing and increasing diversification. The impact of the pre-1980 policies combined with decentralization has meant that Indian states are more responsible for their economic fortunes, which in turn has led to sharp divergences in their growth rates. With the caveat that Indian states are enormously large entities and are internally very diverse, it would appear that the fast growing peninsular states are

starting to resemble more developed countries in their specialization, while the slow growing hinterland states, with still rapidly growing, less well educated, populations may not have the capability to emulate them. It may well be that these hinterland states (as well as backward areas in fast growing states) will have to follow a more traditional path of growth, focusing on labor intensive manufacturing. But they have not thus far. That they have not, may be because further reform is needed – in particular, more flexible labor laws and an improvement of infrastructure, especially vis-à-vis the states in the hinterland so that these industries can be internationally cost competitive – to revitalize labor intensive manufacturing.

"A regional disparity is a variation from which something can be learnt by the backward regions about what to do and what to avoid. But there is manifest evidence of a disinclination or inability to learn from the high performers. There is for example, much to learn from the priorities given to school education and health care in Kerala, from which others have typically been less than willing to learn. There are lessons in agriculture from Punjab, industrialization, commerce and finance from Maharashtra, land reform from West Bengal, use of information technology from Karnataka and the Integrated Child Development Services from Tamil Nadu. India as a whole could have been doing much better if those left behind were willing to learn more – and faster – from those who went straight ahead." (Sen, 2006)

The archaic labor laws have strong organized constituencies, in particular, labor unions affiliated to political parties. Given the way Indian industry has specialized, the costs of these laws are not experienced by political leadership. Given that poor governance, which tends to be persistent, in part, explains the slow growth of the hinterland states, the needed improvement in governance, business climate as well as physical infrastructure will be more difficult in the laggard states.

Even if serious reforms were undertaken in the laggard states, competition from the more advanced states will not make it easy for them to grow. Looking from the output side, the laggard states are typically distant from ports and airports. Transportation costs will come down as infrastructure is built up, but it is unclear whether the improvements will help them out-compete the fast growing peninsular states where many of the initial large scale infrastructure projects are being undertaken and where ancillary infrastructure exists. Even if India moves to using its unskilled labor, one might expect the effects to first be seen in the fast growing states (which have their own share of surplus labor in agriculture) before trickling down to the laggard states.

On the input side, even labor intensive unskilled manufacturing requires a skilled supervisory and managerial force. Despite the large number of graduates emerging from universities in India, the number of graduates with the skills to work in industry or the service sector is relatively limited. With the immense

demand for skilled workers in the export oriented services industry, wages of skilled workers have been going up very fast. Given the extremely competitive situation in labor intensive industries, highly paid supervisory skilled workers are affordable only if they are used very economically relative to the use of unskilled labor. Here again, the fast moving states where the business and political climate is more conducive to scale have an advantage. That the advanced skill intensive part of the Indian economy may be bidding up scarce skills in such a way as to slow the growth of labor intensive manufacture and the exit of surplus labor from agriculture, need not imply that the economy is using resources inefficiently. The immediate adverse consequences of this peculiarly Indian externality are however more likely to be political. For if this process continues, the fast growing states will not only suck the more mobile skilled labor from the slow moving states leading to a further hollowing out of prospects but also the divergence in growth rates will increase further. Put another way, the convergence phenomenon that typically take place across countries may be impeded in the India of the future by one big difference – the common and mobile pool of skilled labor. The very fact of skill based development in the fast growing states may impede labor intensive development because of the rise in the price of skilled labor. That would reduce the profitability of labor intensive and tradable manufacturing. In an era of global supply chains with wafer thin profit margins; this might be a substantial impediment to the growth of labor intensive manufacturing in the lagging states.

The solution is not to impede the growth of fast movers but to enhance the availability of the resource in the scare supply. While the earlier emphasis on funding tertiary education at the expense of primary education may well have been an aberration, India may now have too little tertiary education of the right kind at this juncture. India does produce an immense number of degree holders, but there are serious doubts about the quality of education many receive. The number of high quality institutions is still very small. In the same way as industry was de-licensed, India needs to de-license higher education, remove the barriers to starting new institutions, as well as encourage foreign direct investment here. From a policy perspective, the irony is that in order to promote unskilled labor intensive activities in the future, a great deal of attention may need to be paid to fostering the supply of skilled labor.

It may well be that new institutions of higher education are easier to start in the fast growing states. If so, limits on access to out of state students (or a refusal to recognize results from other state examinations) need to be reduced and educational standards harmonized across states, so that truly all India market for higher education can be created. This will then create a pool of skilled workers who will be essential to enhance the growth of the now laggard states.

The developmental process in the early 1980s and the liberalization process since then, have unleashed tremendous economic opportunities. Thanks to the pre-existing pattern of specialization in favor of skill based production, the

process has unleashed the gale winds of divergence. A unitary India, centralized politically and uniformly mediocre in economic performance has given way to multiple Indias with performance more related to the capabilities of individual states and the opportunities they create.

Ideally of course, the laggard states would reform on their own, push for scrapping archaic labor laws, improve infrastructure and the business climate and utilize their vast pools of underemployed low cost labor to attract investment in labor intensive manufacturing and agri-business. They would thereby catch up with the leading states in India.

Section 4.5: Economic Reforms in Progress

4.5.1 Objectives of Development Revisited

There is a high degree of consensus amongst economists, political scientists and others on what the goals of Indian economy are. All of them want an accelerated economic growth and, at the same time, do want to see that the benefits of growth are equitably shared. The expression 'growth with social justice' in a way summarizes the objective.

4.5.2 Public Private Participation

In the early stages of development planning, government was viewed as the principal actor in development, exercising strict control over private investment, ensuring a dominant role for the public sector in all important industries. Trade policy tended to be inward oriented focusing on industrial development through import substitution which was encouraged through a tight control over imports and maintenance of high tariffs. The limitations of this strategy became evident by the end of 1970s and early 1980s when it became clear that these policies reduced efficiency and competitiveness and growth was much lower than targeted. While government was over-active in industry, it was under-active in many areas, especially relating to social development and this was reflected in very slow pace of improvement in critical social indicators. Some efforts were made to reform the system in the second half of 1980s to address the shortcomings in our development strategy. However, it was not until 1991 that a wide ranging program of economic reforms aimed at de-controlling and de-bureaucratization of the economy was initiated.

One of the strengths of our economy is that we have a strong and vibrant private sector, including large, middle sized and small enterprises. Our agriculture has always been based on individual farmers with a predominance of small and

marginal farmers. Our development strategy must be oriented to enabling our broad based and varied private sector to reach its full potential for raising production, creating jobs and raising income levels in society. A vigorous private sector, operating under the discipline of competition and free markets, will encourage efficient use of scarce resources and ensure rapid growth at least cost.

One aspect of development economics relates to the role of the State. It has to be recognized that there has been a significant change in the climate of opinion regarding the respective roles of government and markets. In the fifties and sixties, the dominant view in the literature on development economics was that government had an important role to play and that it should undertake activities that would compensate for 'market failure'. Market failure was perceived as the inability of markets to allocate resources for investment optimally over time, because of 'myopic' nature of markets. The literature also emphasized the importance of coordinated and consistent set of investment decisions. It is this line of reasoning that led most developing countries to formulate economy-wide plans.

However, four decades of development experience have shown that there can be 'government failure' as well. The regulatory state in many countries have resulted not only in economic losses due to misallocation of resources arising from faulty investment decisions but also in diversion of resources to rent seeking activities because of the very regulations themselves. If there is a lesson to be drawn from the development record of the last four decades (1950 till 1990), it is that there can be both 'government failure' and 'market failure' and that the critical issue is not so much the presence or absence of State intervention but the extent and quality of that intervention. The reform process and the 'new economic policy' build on this experience.

The changing role of government is reflected in the Eighth Five Year Plan, which mentions that planning in India will be increasingly 'indicative'. The Eighth Five Year Plan has identified the principles governing public sector investment. These are:

- The public sector should make investment only in those areas where investment is of main infrastructural in nature and where private sector participants are not likely to come forth to an adequate extent within a reasonable time perspective.

- The public sector must withdraw from the areas where no public purpose is served by its presence.

- The principle of market economy should be accepted as the main operative principle by all public sector enterprises unless the commodities

and services produced and distributed are specifically for protecting the poorest in the society.

Public Private Participation (P3) has been an established business model in infrastructure sector. PPP encompasses long term contractual partnerships between the public and private sector agencies to finance, design, implement and operate infrastructure facilities that traditionally have been the domain of public sector. This is also an acceptable model for projects having interface with energy and environment, involving multilateral funding. In energy sector in India, there are a number of examples of P3. Mahanagar Gas, a city gas joint venture in Mumbai, is one good example in Oil & Gas Sector. Multilateral lending institutions like Asian Development Bank (ADB) and United Nations Development Program (UNDP) are actively involved in P3 model of ventures. There are a number of successful P3 stories funded by UNDP in India, documented in UNDP, 2004. United Nations General Assembly in Resolution 58/129 sent a message that, 'issues facing the developing world were too important and too great in scope for government to address them in isolation; they required new partnership to be forged with the private sector. Public and private sectors should strengthen partnership to implement the principles and criteria for sustainable development.'

According to a joint report by Government of India and ADB, as of December 2006, as many as 86 PPPs had been awarded mainly in roads and ports. The World Bank statistics show that during a 15 year period from 1990, as much as $ 51 billion of public and private investment has been invested into various projects. (Taneja, 2007)

4.5.3 Conditions Preceding Reforms of 1991

The proximate genesis of the new economic policy and reform process lies in the situation that the nation and the economy had to face in the mid 1991. The balance of payment situation had deteriorated so sharply and the foreign exchange reserves had fallen so low that the possibility of default in payment was imminent. Orthodox and unorthodox measures had to be taken urgently to restore credibility. On the domestic side while the Indian economy had done extremely well in terms of real growth between 1985 and 1990, the fiscal situation had also deteriorated sharply. The budget deficit as well as the overall fiscal deficit had sharply increased contributing, on the one hand, to large increases in money supply and, on the other, to sharp increases in interest payments. Fiscal deficit of the Centre and the States taken together which was about 7.5% of the GDP in the late 1970s had increased to about 11% by 1991. The fiscal deficit of the Central Government alone which was below 6% in the late 1970s had increased to 8.5% during the same period. Consequently, interest payments in the Central Government's budget had become the single largest expenditure item rising from 2% of GDP in 1980-81 to near 4% of GDP in 1990-91. The country thus entered the 1990s with a fiscal deficit that was simply not sustainable.

The policy measures that were introduced to contain the balance of payment deficit were basically orthodox. Apart from the exchange rate adjustment which became necessary because of the rise in the real effective rate between 1990 and 1991; the measures taken were aimed at directly containing import growth. Most of these measures were draconian in character. As a consequence of the various measures taken, India had the lowest trade deficit in 1991-92 in more than a decade. On the domestic side, the commitment to contain fiscal deficit to almost 6.5% of GDP in 1991-92, to a further reduction to 3 to 4% of GDP over the next three years was made as early as February 1991. Such a commitment was necessary not only to ensure international credibility but also to put the fiscal system in order.

The policy changes brought into force since July 1991 fall broadly into two categories. The first set of measures is part of what is normally known as stabilization policy. The second set of measures came under the category of structural reform policies. While the stabilization policies are intended to correct the lapses and put the house in order in the short term, the structural reform policies were intended to accelerate economic growth over the medium term. Structural reform policies cannot succeed unless a degree of stabilization has been brought about. But stabilization by itself will not be adequate unless structural reforms are undertaken to avoid the recurrence of the problems faced in the recent period. Structural reforms were broadly in the area of industrial licensing and regulation, foreign trade and investment and financial sector. There is considerable unanimity among the economist about the need to reduce and as far as possible eliminate barriers to entry and expansion of firms. In relation to foreign trade policy, the aim was to liberalize the regime with respect to imports and try to bring about a closer link between exports and imports. Yet another objective was to reduce the tariff rates. A progressive reduction becomes essential in order to avoid a high cost economy. As regards foreign investment, the new policy measures certainly make a break with the past. In Oil and Gas sector, it was an imperative necessity to mobile overseas capital and technology. In an era in which capital is mobile and moving across boarders in a big way and where technology transfer is through investment, India could not afford to close the country to the flow of foreign investment. Finally, in relation to the financial sector it has to be noted that while there has been a considerable widening and deepening of the Indian financial system, many inefficiencies have crept into the system during the past 15 years. An administered interest rate structure had put the whole system in a straight jacket. The extent of cross subsidization in lending rates had undermined the profitability of the banking system. Due to various pressures, the quality of loan assets had also deteriorated. With low profitability, the banking system in particular had not been in a position to provide adequately for loan losses. The capital of the Indian banking system was woefully inadequate. Thus a reform of the financial system to provide greater autonomy to the institutions both in terms of interest rate structure and operational matters had become necessary.

4.5.4 Objectives of Reforms in Oil Sector

There is a common thread running through all the measures in the 'new economic policy' in Oil sector introduced since 1992-93. The basic objective is to improve the efficiency of the system, while meeting the energy requirement of the development process and mobilizing capital and technology needed. The thrust is towards creating a more competitive environment as a means to improve the productivity and efficiency of the sector. This is to be achieved by removing the barriers to entry, bringing about market determined pricing and eliminating centralized state planning. While the industrial policy seeks to bring about a greater competitive environment domestically, the trade policy seeks to improve international competitiveness subject to the protection offered by tariff. Private sector is being given a larger space to operate. In these areas, the public sector will have to compete with private sector even though the public sector may continue to play the dominant and strategic role. What is sought to be achieved is an improvement in the functioning of the various entities whether they are in the private or public sector by injecting element of competition.

Section 4.6: Quick Results of Reforms

For last quarter of the century, India's economy has grown at an average rate of nearly 6% per annum. Considering that India's economy hardly grew in the first half of the 20th century and then following independence, grew at a sluggish rate of some 3 to 4 percent per annum, this recent growth rate is quite remarkable. Table 4.1 and 4.2 below clarify that economic growth in India accelerated noticeably around 1980. However the rate of growth of industrial production from 1980 onwards was not all that impressive. Nevertheless, the growth in the 1950s was from a very low starting point and the performance since 1980 has been a significant improvement over the decade of stagnation that went before.

The overall rate of investment in the economy improved from 1980 onwards (the trend actually began in the second half of the 1970s) and, fluctuations notwithstanding, has remained in the range of 22-23 percent per annum. The growth in investments was fuelled in the 1980s by both growing public investments and private corporate investments, and in the 1990s, as public investments declined, by a variety of growing private investments. As to productivity, especially total factor productivity in manufacturing, the data suggest that there was a surge in the 1980s and then, though still improving, experienced some deceleration in the growth rate in the 1990s.

It is important to reiterate that higher economic growth from 1980 onwards, was at least in part a result of the changing composition of the GDP, namely improvements in the rate of investment and in the efficiency of the economy,

especially of the industrial economy. Second, some non-quantifiable component of the improvements in the growth from 1980 onwards was clearly a function of building on a good foundation: accumulating technology, entrepreneurship and management, trained workers, a sufficient tax base, dense supplier network and adequate demand in the economy.

Table 4.1: Some Basic Growth Data: 1950 – 2004

(All figures in percentage per annum)

	1950-1964	1965-1979	1980-1990	1991-2004	1980-2004
GDP growth	3.7	2.9	5.8	5.6	5.7
Industrial growth	7.4	3.8	6.5	5.8	6.1
Agricultural growth	3.1	2.3	3.9	3.0	3.4
Gross investment / GDP	13	18	22.8	22.3	22.5

Table 4.2: Patterns of Capital Formation, by Sector: 1970 – 2002

(Percentage of GDP)

Period	Total Gross Capital Formation	Private Corporate Sector	Public Sector	Household Sector
1970-1975	18.2	2.8	7.7	7.7
1975-1980	22.5	2.3	11.0	10.0
1980-1985	21.9	4.5	10.2	7.2
1985-1990	23.7	4.5	10.5	8.7
1990-1995	23.7	6.0	9.1	8.6
1995-2000	24.8	8.0	7.0	9.8
2000-2002	25.3	6.0	6.1	13.2

Political economic analysis in the literature holds the view that what eventually triggered the upward shift in the growth rate of the Indian economy around 1980 was a slow but sure adoption of a new model of development. The political leadership during the first half of the 1980s abandoned the commitment to redistribution and got themselves recommitted to 'growth first' model of development. This led the policy process to tilt in favor of big business, against labor and to restructure the State's own role in the economy towards growth promotion.

The economic reforms undertaken since 1991 have influenced both India's industrial policy and external economic relations. The variety of industrial policy reforms – further de-licensing, removal of MRTP constraints, tax concessions,

opening of yet newer areas hitherto reserved for the public sector – are best viewed as continuation of reforms well underway during the 1980s.

A significant element of discontinuity was in the area of India's external economic relations, including, the trade, foreign investment and financial relations. Starting in 1991, import quotas were removed (fully only in 2001), tariffs came down slowly but surely, currency was devalued, the foreign investment regime was liberalized and various restrictions on external financial transactions were eased.

Leading policy makers hold the view that the reforms were expected to generate faster industrial growth and greater penetration of world markets in industrial products, but performance in this respect has been disappointing. The 'disappointment' of course has to be kept in perspective: at six percent annual growth, India is still among the world's fastest growers; exports have grown steadily; and the balance of payment situation has improved considerably since the reform. And yet, industrial growth in the 1990s and beyond did not improve over the 1980s; growth in total factor productivity in the post reform period was somewhat lower than in the 1980s; the modest export growth continued to be surpassed by growing imports and public investment declined while the share of public debt in the GDP continued to grow.

As Table 4.3 below suggests private investments, including corporate investments, have for the most part remained buoyant in the post reform period, but public investments have declined. Private corporate investment shot up rapidly after the reforms but peaked in the mid-1990s. Since then the rate of growth of corporate investments has declined but still remained at a level generally higher than in the earlier periods. Capital formation in the household sector by contrast has grown rapidly since the mid 1990s.

Table 4.3: Some Post Reform Economic Indicators

Year	GDP Growth	Industrial Growth	Capital Formation		Electricity Generated Growth	International Trade	
	Percent	Percent	Percent GDP: Private Sector	Percent GDP: Public Sector	Percent	Percent GDP: Export	Percent GDP: Import
1990-91	5.6	7.0	13.9	9.0	9.6	6.2	9.4
1991-92	1.3	- 1.0	12.9	9.2	4.0	7.3	8.3
1992-93	5.1	4.3	14.2	8.2	4.8	7.8	10.2
1993-94	5.9	5.6	13.4	8.0	5.0	8.1	9.6
1994-95	7.3	10.3	13.2	8.8	6.1	8.1	10.9
1995-96	7.3	12.3	16.7	7.7	5.8	8.9	12.0
1996-97	7.8	7.7	15.9	6.9	3.5	8.6	12.3
1997-98	4.8	3.8	15.3	6.4	3.4	8.5	12.2
1998-99	6.5	3.8	15.1	6.5	4.6	8.3	11.5
1999-00	6.1	4.9	15.6	6.2	5.0	8.4	12.4
2000-01	4.0	7.0	15.9	6.0	4.6	9.9	12.7
2001-02	4.4	3.7	16.2	5.9	4.0	9.4	11.8
2002-03	5.8	6.3	16.6	5.6	5.0	10.6	12.7
2003-04	8.5	6.6	16.8	6.0	6.5	10.8	13.3
Average	**5.7**	**5.9**	**15.1**	**7.2**	**5.1**	**8.6**	**11.4**

Growth of income in a developing country like India is mainly driven by: a) growth arising out of industrial activity; b) investment in income yielding assets (capital formation); c) availability of economic infrastructure like rail, road, port facilities, energy (coal, power and oil); and d) income from external sector arising from net export.

Industrial output creates and distributes income amongst factors engaged in production process. Therefore, industrial growth is generally considered as symptom of growth with distributive equity. Of course, there can be concentration of income and output in the hands of few in a capitalistic production process. But in case of India, that tendency was prevented by multiple socialistic policies like: a) MRTP; b) public ownership of productive assets; c) reservation for small scale industries; d) labor legislations protecting workers wages and rights etc.

Secondly, capital creation is the something like laying the foundation for future production. Capital formation takes place by savings, borrowings, corporate reserves and depreciation. Growth in capital formation is an indication of economy's production capacity. Income from capital is of course a function of productivity, which is measured by incremental capital output ratio.

Thirdly, economic infrastructure enables capital and other factors of production to get into active production process. Growth in those infrastructures is indication of the ability of the economy to make use of the production capacity and generate output.

Fourthly, net export (export minus import) income adds to country's domestic income. Further, growth in import also adds to the country's capital formation, to the extent the imported items are capital items.

Table 4.3 above indicates that India's economy has done well in all the above four parameters. It is however not easy to point out the impact of reform on all these. Still, in general terms the table speaks volume about the management of the economy with central and dominant feature being reforms.

Reforms of the last one and half decade have resulted in growth and distribution of income amongst various strata of society. These also have created buoyancy and plenty in the availability of goods and services. There also have taken place an avalanche of information, advertisement and publicity through mass media, information technology and brand building exercises. All these factors in a symbiotic alchemy have created a consumerist and high aspirant segment of society, the consumers of next generation. This section of society measures success more unapologetically in terms of consumption. Ambition is much more clearly arrayed along the axis of economic up gradation, rather than moving up the social ladder. Even when the desire is of social recognition, it is usually expressed in terms of wanting to be some one with a lifestyle others envy. Consumer study has come across a family living in an illegal slum under threat of demolition using electricity illegally thinking about getting a computer for their child.

'Consumer ambition in this class is of two kinds. One set of people seek escape from a sense of insecurity and crave some form of stability. And there is another growing segment that seeks urgent, discontinuous growth, the desire to vault over the next step and land quickly into one's final destination. This often involves a pragmatic acceptance of the legitimacy of using all means available. It also involves an incredibly accommodating network of invisible community, which works noiselessly together.' (Desai, 2006)

Section 4.7: Growth strategy in X Five Year Plan: 2002-2007

At the heart of the X Five Year Plan strategy is a view of the development process in terms of efficiency. Considerable emphasis has been placed on policy and procedural reform and improved governance to achieve a significant improvement in overall efficiency. It is increased efficiency that is expected to make the acceleration in growth envisaged in the Plan feasible.

The X Plan adopts a seven pronged approach in its policy framework: (i) enhancing the efficiency of capital use; (ii) greater openness; (iii) widening and deepening of capital markets; (iv) stepping up agriculture and rural development; (v) competitive industrial policy environment; (vi) building social and economic infrastructure; and (vii) reforms in governance. In each of these areas, there is a conscious emphasis on policy changes which could involve re-prioritization and even a radical break from the past:

With a view to enhance efficiency, X Plan envisages:

a) full productive use of the existing capital stock;
b) energizing idle capacity in the public sector through a moratorium on new infrastructure projects and privatization of non-strategic public sector enterprises;
c) legal and procedural changes covering bankruptcy and foreclosure for quick transfer of capital assets in the private sector;
d) lowering of tariff on imports;
e) creation of capacities specifically for export markets;
f) rationalization of the domestic tax structure and simplified access to export promotion incentives to correct for the anti export bias in policies and
g) to enable a greater integration with the international economy.

In the financial sector, the Plan envisages regime changes to allow for the flow of long term risk capital. Reforms in the debt market and equity markets are regarded as central to the convergence of long term saving and investment horizons in the economy.

The Plan identifies the need to raise productivity of land and water resources for agricultural development. Accordingly, it aims for a major revival of public investment in irrigation and water management, rural infrastructure, research and development, product diversification and freer trade.

Indian industry will shoulder a large share of the drive to accelerate overall growth by expanding at above-trend rates of 10 percent per annum during the Plan period, extending the external liberalization to State level industrial enterprises to make them internationally competitive.

The Plan envisages human development through three critical dimensions, i.e., longevity, education and command over resources – education for all, improvement in the health status of the population, shelter for all by 2012, building the economic infrastructure by intensifying power sector reforms in States and empowering them with adequate legislation and financial support, expansion of hydro electric and atomic power capacity, tariff fixation on commercial and technical grounds by an independent authority in order to improve the financial constraints on the performance of railways, up-gradation of the road network to international standards, reform of state road transport operations, rural road connectivity, expansion in civil aviation and a telecommunication policy.

Reform of governance is a cornerstone of the X Plan. Reform of the civil service, corporate governance and consumer protection are regarded as essential for increasing efficiency and accountability.

The imperatives for poverty reduction and employment generation impart urgency to achieving annual growth rate of the economy at 8 percent as a necessary minimum.

Section 4.8: Performance of Economy from 2004 onwards

2004-05 is the penultimate year of X Plan period. Policy measures envisaged and reform process undertaken during the Plan period has got a reflection the performance of 2004-05. Noteworthy features of India's macro economic performance in 2004-05 are:

a) Improvement in investment climate and pick up in industrial and service sector activity
b) Emergence of buoyant exports as a driver of demand in a large spectrum of industries
c) Modest consolidation in the fiscal position
d) Successful management of liquidity in the backdrop of continuing capital flows
e) Healthy investor confidence, as India received more than a quarter of the global portfolio flows to emerging market economies in 2004, though India's share in foreign direct investment continued to be low around 3%
f) Foreign exchange reserves reached US $ 141.5 billion at end March 2005

Indian economy today is characterized by an environment of confidence, positive business expectations, a renewal of rule based fiscal consolidation, stable and

orderly financial markets and institutions and progressive integration with global economy.

For more than two decades, from 1980 to 2003, India's GDP growth averaged around 6% per year, which suddenly shot up after 2003 to average 8.6% in the next four years. (Aiyar, 2007)

Amongst many factors that might have contributed to cause this rare feat, the growth of manufacturing needs highlighting. Services grew fast by 8-9 percent in the 1990s, but industry grew only 5.7 percent. A sign of the times was that computer software boomed, but computer hardware did not. Many analysts felt India lacked a comparative advantage in industry and could not compete with China, at least not till its labour laws were amended.

But after 2002, India suddenly experienced a spurt in brain intensive manufacturing, involving design, customization and innovation. The pharmaceutical industry had moved from reverse engineering to full blooded molecular research. The auto industry, which requires constant design improvements, took off. So did capital goods, which needs customization. India became a global R&D hub. Total factor productivity shot up. Meanwhile interest rates fell and Indian access to global capital markets improved. This made Indian manufacturing competitive. So, during 2002 to 2007, industrial growth improved to an average of 8 percent and hit 11.5 percent in 2006-07, with manufacturing growing by 12.5 percent. The manufacturing spurt buttressed the earlier services spurt and so GDP growth crossed 8 percent.

Section 4.9: Energy needs of a growing Economy (IX Five Year Plan: 1997-2002)

IX Plan document is the only one, amongst all Plans, to have a great analytical and policy oriented research on energy sector in general and oil sector in particular. One perspective that one gets from the IX Plan document is that the planners and policy makers might have attached overriding importance to this sector due to two reasons: a) the country after achieving considerable level of development felt the crunch of energy. Realization dawned on policy makers that the ambitious development process of the country could be hindered, if energy sector does not support it. The issue of energy security came to forefront of policy making on the eve of IX Plan. Secondly, energy sector, especially Oil and Power were in the forefront of reform agenda.

On the eve of IX Plan period, the elasticity of total primary energy consumption with respect to GDP at constant prices works out to be 0.78 as compared to 1.25 for commercial energy for the period 1953-96. The elasticity of total final energy consumption works out to 0.67 as compared to 1.14 for final commercial energy

consumption for the same period. However, there have been changes in the pattern of consumption of energy overtime as well as in the fuel wise elasticity. The changes in the pattern of energy consumption / GDP elasticity are given in Table 4.4 below:

Table 4.4: Energy Consumption / GDP Elasticity

	Primary Energy		Final Commercial Energy Consumption			
Period	Total	Commercial	Coal	Petro Products	Electricity	Total
1953-60	0.87	1.62	1.22	2.14	2.98	1.46
1960-70	0.68	1.13	0.32	2.69	3.06	1.13
1970-80	1.06	1.59	0.99	2.09	2.06	1.52
1980-90	0.69	1.13	0.42	1.10	1.58	0.95
1990-96	0.65	0.97	0.22	1.15	1.28	0.87
1953-96	0.78	1.25	0.57	1.74	2.11	1.14

Source: IX Five Year Plan

A declining trend was observed in the point-to-point elasticity of energy consumption with respect to GDP in the decades of the eighties and nineties. X Plan document mentions that the elasticity for primary commercial energy consumption for the 1991 - 2000 periods is less than unity. (Section 7.3.9, Chapter 7, Vol. II) This has to be considered with due care since the past trends in the consumption of commercial energy do not really represent the growth of demand for such energy, but merely reflect the growth of its actual availability in view of the prevailing energy shortages. However, a declining trend in energy consumption – GDP elasticity does include the increasing efficiency of energy use in the economy.

The economy is progressively becoming oil intensive in view of the increasing share of natural gas and petroleum products in the final commercial energy use. This is due to the increasing use of oil products in sectors like household and transport. The transport sector has become more oil intensive on account of larger than anticipated share of road transport in freight and passenger traffic in preference to railways and a mushrooming growth in personalized transport modes like car and two wheelers.

The trend in relative share of products like LPG, SKO, MS and diesel during last 4 decades are given in Table 4.5 below:

Table 4.5: Percentage share of select oil products in total consumption

Percentage

	LPG	SKO	MS	Diesel
1975-76	1.50	13.83	5.68	29.38
1980-81	1.31	13.68	4.93	33.48
1990-91	4.39	15.30	6.44	38.40
2000-01	7.15	11.30	6.61	37.95
2004-05	9.14	8.42	7.39	35.53
2005-06	9.21	8.36	7.73	35.88

Source: CMIE, Energy, February 2007

It is significant to note that there is a sustained and perceptible increase in percentage use of LPG. This has happened due to two reasons: a) availability of LPG has improved after it was extracted from natural gas from 1981-82, supplemented by imported LPG from 1985-86. b) Large use of LPG replacing SKO from 1999-2000 onwards.

Share of petrol has gone up in 1990s primarily due to exponential growth in the use of car for personalized transport. Share of diesel has gone down, as diesel to an extent has been replaced by electricity in rail transport and by naphtha in power generation.

Section 4.10: Priority area for Oil Sector in successive Five Year Plans

4.10.1 Eighth Five Year Plan (1992-97)

The major objectives for petroleum and natural gas sector during the Eighth Plan included maximization of indigenous production of crude oil and natural gas, a reasonable level of accretion of new hydrocarbon reserves through intensification of exploration activities, augmentation of domestic refining capacity with emphasis on cost-effective de-bottlenecking or expansion of existing refining capacity, encouragement to private sector participation etc.

Demand for petroleum products

The actual consumption of petroleum products was 79.16 million tonnes as against the Eighth Plan projected demand of 81.19 million tonnes in 1996-97. The compound average annual growth rate during the Eighth Plan period was 6.8% as against the projection of 6.9% envisaged at the time of the formulation of the Eighth Plan. The cumulative consumption of petroleum products during the Eighth Plan was however lower at 341.69 million tonnes than the projected demand of 346. 78 million tonnes due to lower than anticipated increase during the first two years of the Plan. These consumption figures include product sales through parallel marketing system (PMS). The share of imports of petroleum products by private sector was less than 3%. The consumption of petroleum products during the Eighth Plan is given in the table below:

Table 4.6: Consumption of Petroleum Products

Million Tonnes

Product	1991-92	1996-97	
	Actual	Target	Achievement
Light Distillates	10.12	18.52	14.54
Middle Distillates	34.40	48.83	49.06
Heavy Ends	12.45	13.84	15.56
Total	56.97	81.19	79.16

While the indigenous production of crude oil declined, the growth rate of demand for petroleum products was rising at a fast pace. This led to higher volumes of imports of petroleum products during the Eighth Plan. The import dependence in respect of crude oil to meet the demand of petroleum products went up from about 50% in 1992-93 to 60% in the terminal year of the Eighth Plan.

Domestic Crude Oil Production

The Eighth Plan had emphasized the need for maximization of domestic crude oil production. However, against a total planned production of 197.3 million tonnes during 1992-97, the crude oil production was only 154.28 million tonnes. The terminal year production was only 32.9 million tonnes as against the target of 47.08 million tonnes. The medium sized oil fields to be developed under Joint Ventures were expected to produce about 11 million tonnes of crude oil during the Plan period. The full production from these fields was expected to materialize only in the Ninth Plan period on account of delay in award of contracts. The details of crude oil production during the Eighth Plan are given in Table 4.7 below:

Table 4.7: Crude Oil Production

Million Tonnes

Organization	1991-92	1996-97		Cumulative	Eighth Plan
	Actual	Target	Achievement	Target	Achievement
(1)ONGC					
On shore	8.86	14.13	8.50	61.77	43.75
Off shore	18.96	29.25	20.18	118.96	94.57
Total ONGC	27.82	43.38	28.68	180.73	138.32
(2) OIL	2.53	3.70	2.87	16.59	13.97
(3) JVC / Pvt	-	-	1.35	0	1.99
Total	30.35	47.08	32.90	197.32	154.28

Gas production and utilization

Consequent to the lower domestic production of crude oil, the gas production was also lower than the Plan target. In addition, there was a shortfall in the production of free gas also on account of delays in the development of gas fields. Against the Eighth Plan target of 125.42 billion cubic meter (BCM), the actual gas production was 101.71 BCM. Accordingly, dispatches to downstream users of gas fell short of the target. The overall management of the domestic gas sector improved during the Eighth Plan with better utilization of the produced gas and minimization of flaring. The level of gas flaring was reduced from about 10.3% of the total production at the beginning of the Eighth Plan to about 4.9% in the terminal year of the Eighth Plan. The production of natural gas during the Eighth Plan is given in Table 4.8 below:

Table 4.8: Natural Gas Production

Billion Cubic Meters

Organization	Cumulative Target	Actual Achievement
ONGC		
(i) On land	28.64	19.32
(ii) Off shore	87.34	74.08
Sub Total	115.98	93.40
OIL		
(i) On land	9.44	7.47
JVC	-	0.84

POL Import

The import of crude oil increased from 24 million tonnes in 1991-92 to 33.9 million tonnes in 1996-97 and that of petroleum products from 6.51 million tonnes to 16.86 million tonnes in the corresponding period. The import bill for crude oil and petroleum products is given in Table 4.9 below:

Table 4.9: Net Imports Value of Crude Oil and Petroleum Products

Rs Crores

Item	1991-92	1996-97	Cumulative Eighth Plan	
Net Imports	Actual	Target	Target	Actual
(a) Crude Oil	7,869	4,408	18,332	60,573
(b) POL Products	5,261	12,892	56,328	40,399
Grand Total	13,130	17,300	74,660	1.00,972

At the time of commencement of the Eighth Plan, the total POL import bill was estimated to be Rs 74,660 crore. However, the actual total POL import bill during Eighth plan period was Rs. 1, 00,972 crore.

4.10.2 Ninth Five Year Plan (1997-2002)

The share of petroleum products and natural gas in the total final energy consumption increased significantly during 1997 to 2002. This share was about 35 percent in 1980s. It increased to about 54 percent in 1996-97. Natural gas is a clean and environment friendly fuel and as a result, its use in the years to come could increase.

The country was heavily dependent on imports of crude oil and petroleum products and this dependence would increase in the years to come. As a result, there was to be substantial foreign exchange outgo. Raising of domestic oil production, setting up of refineries, laying pipeline for transportation of gas as well as oil products would raise the requirement for investible resources in the Ninth Plan. The priority areas in the oil sector were as follow:

- The indigenous crude oil production was required to be augmented by acceleration of exploration efforts in deep off-shore, un explored / less explored off-shore as well as on-shore areas, improving reservoir management and enhanced oil recovery (EOR). A New Exploration Licensing Policy (NELP) with certain fiscal and financial incentives was announced to boost investment in exploration. This could help in accretion of the hydrocarbon reserves. The average recovery factor in India was low by international standards. An improvement in the recovery factor would give additional amount of oil without corresponding accretion of reserves. Simultaneously, exploration and development projects would require to be taken up in other countries as well as to increase equity oil abroad.

- A large amount of gas was being flared till the late 1980s. However, in recent years flaring declined. Gas utilization was to improve further with the commissioning of gas compression and evacuation facilities as well as augmentation of existing pipeline network.

- In order to meet the increasing demand for oil products, additional infrastructure, viz, port handling facilities for crude oil and petroleum products, pipelines, tankers, rail wagons etc were to be established and this would involve large financial requirements. Joint ventures among public sector undertakings as well as between the public and private sector undertakings could go a long way to finance these activities.

- In the wake of the ongoing liberalization program, the petroleum industry (both upstream and the downstream) was thrown open to private sector participation (both Indian and foreign). The response, particularly in the down stream sector, was encouraging.

- The prices of oil products continued to be largely administered. In view of the greater need for raising the resources for expansion of oil sector as well as large scale private sector participation, it was important that the present administered pricing regime was dismantled at the earliest. The initial steps in this direction were already taken and these needed to be carried through to the logical conclusion. Since the country was a net importer of crude oil as well as petroleum products, border process should be the guiding principle in fixing the prices of crude oil as well as petroleum products in the economy.

- In view of the severe foreign exchange constraints that the country had been facing, the conservation of petroleum products received high priority since early 1970s. It is important that these efforts continued in the Ninth Plan. This would also help in ensuring greater energy security. The transport sector being the largest user of petroleum products needed special attention.

- The existing infrastructure facilities for handling petroleum products were inadequate. In order to handle the additional imported and indigenous crude oil, petroleum products and natural gas, including Liquefied Natural Gas (LNG), the infrastructure requirements for ports, tankers, rail loading, pipeline and product tankage, would need to be enhanced substantially.

- Most of the oil importing countries pursue a national policy to maintain a strategic reserve as an insurance against contingent situations like war, natural calamities and also for hedging against violent price fluctuations in the international market. Similar strategies would need to be taken up expeditiously as the gap between domestic production and demand was widening sharply. The present strategic tankage is for 12 days storage of crude oil and petroleum products import. The capacity needs to be increased by at least 15 days of import requirements during the Ninth Plan.

Energy Strategy in the IX Plan

The energy strategy for the future could be divided into short term strategy, medium term strategy and long term strategy. The various components of short / medium term strategy could be:

- Rationalizing the tariff structure of various energy products, particularly the prices charged by State Electricity Boards from the various categories of consumers. This is an important component, if not a pre-requisite for the restructuring of the SEBs in order that they become bankable and credit worthy. The SEBs have to be restructured so as to permit them to operate on commercial lines.
- Dismantling of the Administered Pricing Mechanism (APM) in a fairly short time frame
- Strengthening of the institutional reforms that have been initiated during the Eighth Five Year Plan, i.e., deregulation etc.
- An optimum utilization of existing assets
- Efficiency in production system and reduction in transformation losses, including those in traditional forms of energy sources
- Promoting R&D, transfer and use of technologies for environmentally sound energy system, including new and renewable energy sources
- Improving energy efficiency in accordance with national socio-economic and environmental priorities
- Promoting appropriate energy efficiency and emission standards to reduce adverse impact on the environment
- Adoption of energy efficient technologies in major energy intensive industries like iron, steel, chemicals, petroleum, pulp, paper and cement
- The energy challenges need to be tackled in such a way that social, environmental, economic and security problems are ameliorated and not aggravated, as is typically the case with conventional energy strategies which either ignore these problems or do not deal with them adequately. Therefore in the medium to long term, it is necessary to adopt measures that will reduce the energy intensity of the economy, some of which are listed below:

- Demand management through greater conservation of energy, optimum fuel mix, structural changes in the economy, an appropriate modal mix in the transport sector, i.e., greater dependence on rail than on road for the movement of goods and passengers and a shift away from private modes to public modes for passenger transport, greater reliance on co-generation, recycling, changes in design of different products to reduce the material intensity of those products, etc.

- There is a need to shift to less energy intensive modes of transport. This would include measures to improve the transport infrastructure viz., roads, better design of vehicles, use of compressed natural gas and synthetic fuel, etc. Similarly, better urban planning would also reduce the demand for energy use in the transport sector.

- There is a need to move away from depletable to inexhaustible resources, viz, solar, wind, bio-mass energy etc.

- Greater emphasis has to be laid on the exploitation of hydro-electric power, particularly for meeting peak demand.

- Greater attention will have to be paid to research, development, transfer and use of energy efficient technologies and practices in the supply as well as the end-use sectors. Attention will also have to be paid to factors like rehabilitation of displaced people, environmental considerations, etc, while adopting these technologies.

Strategy for Oil & Natural Gas Sector in IX Plan

The petroleum and natural gas sector has played a crucial role in the economic development of the country since independence. The share of petroleum products and natural gas in the total final energy consumption has been increasing over the years and was 54% in 1996-97. The country is heavily dependent on imports of crude oil and petroleum products and this dependence will increase in the years to come. This underscores the need for increasing indigenous production. The National Oil Companies (NOCs) have made continuous efforts for discovery of oil and gas in order to meet ever rising demand in the country. Natural gas will become the most favored source of energy due to its nature as a clean and environment friendly fuel. The available options for maximizing the share of gas in energy through domestic as well as imported sources to meet the energy demand are being examined. The petroleum and natural gas sector was opened up for private participation at the beginning of the Eighth Plan. As of now, exploration, production, refining and marketing are open for private participation. The Restructuring Group for Oil Sector (R-Group) has estimated an investment of about US $ 100 billion in the petroleum and natural gas sector up to 2010 for ensuring the security of oil and

gas supplies to various sectors of the economy. It was against this background that major incentives were announced by the petroleum and natural gas sector to attract a larger degree of private participation. A New Exploration and Licensing Policy (NELP) have been announced recently by the Government to boost investment in exploration for increasing the level of hydrocarbon reserve accretion to enhance the domestic oil and gas production.

Pricing (IX Five Year Plan)

The principles of pricing adopted for energy products have greatly influenced the pattern of growth of the energy sector in the country. The economic implications of energy pricing are multi-dimensional:

- They have a direct bearing on the efficiency of allocation of resources within the energy sector as well as in the overall framework of the economy. This includes the impact of energy prices on inter fuel substitution.
- The end use efficiency in the sector is directly influenced by energy prices. Pricing of resources that are used in energy production is also important in view of the efficient use of these resources.
- The pricing system determines the viability of the sector and its financial autonomy.
- In a country where income disparities are wide, energy prices could lead to distributive implications unless adequate safeguards are built in.
- Continuation of APM is coming in the way of large scale private participation.
- Abolition of APM will make Indian Petroleum sector globally competitive
- Contain Oil Pool deficit
- Deregulation of import (Import of Kerosene, LPG was deregulated in VIII Plan period)

The price of diesel linked to import parity was announced by Government in September 1997. The selling price of all grades of diesel would now be based on import parity to be fixed on a monthly basis.

Privatization (IX Five Year Plan)

Petroleum and Natural Gas sector was opened up for private participation at the beginning of VIII Plan. As of now, exploration, production, refining and marketing are open for private participation. The Restructuring Group (R – Group) has estimated an investment of about US $ 100 billion in the Petroleum & Natural Gas sector up to 2010 for ensuring the security of oil and gas supplies for various sectors of economy.

Government of India has thrown up major segments for private investment.

- Setting up of new grass root refineries by private sector either on their own or as joint ventures with downstream sector PSUs
- Setting up lube refineries by private sector
- Parallel marketing of petroleum products by private sector
- The Oil sector PSUs are also being permitted to form JVs among themselves and with Indian and foreign companies
- Parallel marketing of a number of petroleum products by private sector has been permitted and imports have been de-canalized. Due to constraints at ports and inland transport facilities, parallel marketing has succeeded only to a limited extent so far.

4.10.3 Tenth Five Year Plan (2002-07)

In terms of action Plan, X Plan is an extension of IX Plan. The additional three features of X Plan are:

1. X Plan recognized that 'Indian Oil Industry will have to play the role of a frontline industry in the country's march towards becoming an economic super power. To successfully fulfill this role, the industry will have to become internationally competitive and endeavor to become a global player.' (Section 7.3.55, Chapter 7, Vol II)
2. X Plan envisaged the role of a statutory regulatory authority for the downstream oil and natural gas sector, after dismantling the administered pricing mechanism. (Section 7.3.57 & 89, Chapter 7, Vol II)
3. X Plan makes a mention of restructuring of Oil PSUs so that they can compete with private and multinational companies. Following restructuring, disinvestment in or privatization of some of these companies

through a transparent process would be undertaken. (Section 7.3.58 & 88, Chapter 7, Vol II)

Besides above additional approaches to the downstream Oil sector, X Plan also makes a mention of 'India Hydrocarbon Vision -2025', a document prepared by Government, laying down the framework of the approach and policies that shall guide Oil sector till 2025.

Summary

To summarize, India's development history has a unique feature that it is experimental and experiential. Its path and tenor is guided by philosophy that is rooted deep into India's socio-economic reality. It goes to the credit of Indian policy makers that despite having some ideological proclivity, they have not lost sight of the national vision. Keeping the vision in mind, they have tempered their ideology with pragmatism and experience. In the history of India's economic development, we do not see a rigid theory of development at work. In stead, we find a home grown development theory, which has taken quite its own course as it faces the challenges and finds solution.

"The story of Indian economic policy from independence to the present day is one of evolution and continuity – not of revolutionary or sharp turns in direction. It reflects Indian realities. Its size, diversity and democratic aspirations and indeed compulsions, all make for compromise, eclecticism and even incompatible cohabitation." (Patel, 2002)

India's oil policy has also treaded the path of experiment with a national vision of providing energy to the development process of the country. Oil Sector has found a place of special significance in the development policy from the beginning. Firstly, Oil is an essential ingredient in the country's development process. Secondly, the country did not have the requisite capital, technology and talent to explore oil in the beginning of the development era. Thirdly, India is not endowed with oil resources as much it would require for its consumption. Fourthly, when time came for the sector to open up to private investment and to foreign market, India did it with due care to its delicate market condition. Fifth and finally, Oil sector is so much entwined with other sectors in the economy that any step taken in Oil sector has got far reaching consequence some where else in the economy. Foreign connectivity was there with Oil sector from the beginning. Private public participation was an accepted mode of supply chain in Oil sector from the beginning. But still, there were a lot of reform measures undertaken in the Oil sector during last 13 years, which has been detailed in Chapter V. The impact of the reforms in other economic sectors has been examined in Chapter VI.

Recap: Chapter IV

Oil Sector (referred to as 'mineral oil' in Industrial Policy Statements) was in the exclusive list of industries which were reserved for Public Sector in Industrial Policy Resolution 1948 (IPR 48). IPR 48 was adopted by Parliament on April 6, 1948. IPR 48 reserved for Government the manufacture of arms and ammunitions, the production and control of atomic energy and the ownership and management of railway transport. Another six industries were set aside as the exclusive responsibility of the state, inclusive of Mineral Oil.
Recap contd...

India's Oil Policy within the overall framework of India's development policy had its own course, at times making Oil Sector an exception. When in 1947, India woke to freedom; the bulk of her oil requirement was being imported. Even III Five Year Plan (1961-66) states, 'there is at present no production of oil within the country except for a small quantity obtained from the Digboi area in Assam.' Marketing of oil in India was done by three multinational companies, namely, Burmah Shell, Standard Vacuum and Caltex.

There was no legislation in India regulating crude oil mining prior to independence, though there were legislations on mining since 1894. It was only after independence that the Indian Bureau of Mines (IBM) was set up in 1948 as the central agency for coordinating mineral leases and the mineral policies of different states. The Central Government enacted the Mines and Minerals (Regulation and Development) Act 1948, which came into force in October 1949. The Petroleum Concession Rules, 1949 were framed under this Act.

During 1957 to 1959, the policy makers at the highest level in India came to a realization that the multinational oil companies are charging high price of oil to Indian consumers through a pricing method known as 'Valued Stock Account' (VSA). Basically, it is same as import parity price, but the FOB price considered was of Mexican Gulf, as there was no Platts posted price of refined products in the Persian Gulf. The multinational Oil companies were loading excessive charges in the price build up, which was not audited by any Government agency, not even by their internal auditor. It came to light that the multinational oil companies earned higher profits in India than anywhere else in the world.

IX Plan document is the only one, amongst all Plans, to have a great analytical and policy oriented research on energy sector in general and oil sector in particular. One perspective that one gets from the IX Plan document is that the planners and policy makers might have attached overriding importance to this sector due to two reasons: a) the country after achieving considerable level of development felt the crunch of energy. Realization dawned on policy makers that the ambitious development process of the country could be hindered, if energy sector does not support it. The issue of energy security came to forefront of policy making on the eve of IX Plan. Secondly, energy sector, especially Oil and Power were in the forefront of reform agenda.

Petroleum and Natural Gas sector was opened up for private participation at the beginning of VIII Plan. The Restructuring Group (R – Group) has estimated an investment of about US $ 100 billion in the Petroleum & Natural Gas sector up to 2010 for ensuring the security of oil and gas supplies for various sectors of economy.