CHAPTER 2

REVIEW OF LITERATURE

The term “infrastructure” was evolved during the Second World War by military strategists to indicate wide ranging elements of war logistics. Thereafter, economists introduced the term into the literature of development economics.

Though the concept of infrastructure has been extensively used in the literature on economic development, yet it has not been explicitly defined in a precise and generally acceptable manner.

The American Heritage Dictionary defines the term “infrastructure as the basic facilities and installations needed for the functioning of a community on society, such as transportation and communications systems, water and power lines, public institutions including schools, post offices and prisons.”

The Oxford Dictionary defines infrastructure as “basic structural foundation of a society or enterprise.”

According to Article 301 of the Constitution Infrastructure refers to “the facilities that facilitate the trade and removal of impediments that facilitate the trade, commerce and intercourse”.

According to A.N. Agarwal, “The term Infrastructure is an umbrella term for several activities, which include public works like railways, roads, major irrigation works etc. as also public utilities like power, telecommunications, tap water supply, sanitation and sewerage etc.” (Agarwal, A.N.)
A number of inter-changeable terms such as ‘Social Overhead’, ‘Economic Overheads’, ‘Overhead Capital’, ‘Basic Economic Facilities’ etc. have been used to denote services which one generally identifies with infrastructure.

The concept of overhead, which is often used as synonymous with the concept of infrastructure, was probably used for the first time by H.W. Singer who identified it with certain kinds of investments which are regarded necessary for development but which by themselves are not directly productive. To quote him, “Any economic system requires a certain number of installations or capital formation which is not itself directly productive, which is in the nature of an overhead cost…there are certain overhead installations which must be present to enable production to take place, but which do not themselves directly result in the production of useable goods.” (H.W. Singer, 1951)

As examples of such installations Singer mentioned a good educational system, health services, housing, transport, power and irrigation. Singer thus identifies two of the basic characteristics of infrastructural facilities. First, they are not directly productive, that is, they do not produce an output for consumption. Second, they are in the nature of overhead installations or costs which are necessary for continuation of directly productive activities.

Among the earlier authors Nurkse also elaborated the concept of infrastructure in his celebrated book ‘Problems of Capital Formation in Under-developed Countries’. Nurkse has used the word ‘Social Overhead Capital’, which, according to him, “form an
essential basis for small scale private investments in miscellaneous industries.” (Nurkse R, 1955)

In later contribution, Nurkse elaborated this concept further and evolved certain criteria according to which the various items are to be classified as overhead capital. To quote him: “Overhead investment aims at providing the services- transport, power, water supply- which are basic for any productive activity, cannot be imported from abroad, require large and costly installations and in the history of western economies outside England, have usually called for public assistance or public enterprise. Typically, overhead investments take a considerable time to reach maturity in growing economy.” (Nurkse R., 1961) The above quotations from Nurkse highlight several characteristics of infrastructure, viz., these are basic for any productive activity, cannot be imported, require large & costly installations, call for public assistance, have long maturity period, lumpiness and high operational capital intensity, & generate external economies.

In Rostow’s scheme of stages of economic growth, the economy has to have certain conditions before it is ready for takeoff. One of the pre-conditions for takeoff is the building up of social overhead capital. To quote him- “Technically this pre-conditioning embraces a buildup of transport sufficient to begin to make the markets of the economy interact quickly and efficiently and to make domestic raw material available at tolerable economic cost, an initial minimum quantum of power resources and other overhead capital.” (Rostow W. W., 1962)

Hirschman has used the concept of social overhead capital in a more general sense. He has defined it as “comprising those basic
services without which primary, secondary and tertiary activities cannot function”. (Hirschman, A.O., 1958) In this wider sense the term includes all public services from health to transportation, communication, power and water supply as well as such agricultural overhead capital as irrigation and drainage system. He has, however, also given a narrow or more restricted concept of infrastructure or what he calls the “hardcore” of overhead capital in which he includes transportation and power.

According to Rosenstein Rodan, the services of overhead capital are “indirectly productive and become available only after long gestation periods. Its most important products are investment opportunities created in other industries... Social overhead capital comprises all those basic industries like power, transport or communications which must precede the more quick yielding directly productive investments and which constitute the framework or infrastructure and the overhead costs of the economy as a whole. Its installations are characterized by a sizeable initial lump and low variable costs”. (Rosenstein Rodan, P.N.)

Infrastructure has been viewed by V. K.R.V. Rao as an essential instrument imparting elasticity to the supply factor. (Rao, V.K.R.V., 1968) He had emphasised this point particularly in the context of under-developed countries where it is not demand constraint but the low elasticity of supply, restricted mainly by an acute lack of infrastructure facilities, which acts as a bottleneck to growth. Even if there is increase in demand because of rise in incomes, the producers are not able to match the supplies because of lack of basic facilities.
2.1 INFRASTRUCTURE AND ECONOMIC DEVELOPMENT

According to Dr. V.K.R.V. Rao, "The link between infrastructure and development is not a once for all affair. It is a continuous process; and progress in development has to be preceded, accompanied and followed by progress in infrastructure, if we are to fulfill our declared objectives of a self-accelerating process of economic development." (Dutt and Sundaram, Indian Economy)

A number of research studies have been undertaken in the recent past on various aspects of infrastructure and its effects on development {Barry (1994), Bond Gary (1994), Chandavarkar (1994), Jamal-ud-din (1994), Kohli (1994 and 1995), CMIE (1995), CII (1995), Jha (1995), GOI (1996) and Nayak (1999)}. Some studies are devoted to the estimation of productivity of infrastructure investments while others are attempts to find a nexus between growth and investments on infrastructure. Though a positive and significant relationship between growth and investment on infrastructure has been established using time series data, scholars have failed to have a consensus view on the causality between these two factors. Whether increased infrastructure causes growth or growth causes increased infrastructure is yet to be fully established. However, a strong correlation exists between per capita GDP and availability of certain services such as telecommunications, power, roads, and access to safe drinking water etc. With the rise in per capita GDP, composition of infrastructure changes significantly. Basic infrastructure such as water and irrigation are more important in less developed countries whereas power and telecommunication play a vital role in highly developed countries. As the economy progresses, the share of agricultural
infrastructure shrinks and other infrastructure take their place for speedy development of industrial and service sectors.

It would be appropriate to discuss the role of infrastructure in the process of economic development. Development of infrastructure is the sine qua non of Economic Development as adequate infrastructure can help in accelerating economic growth. For ex-
development of agriculture and industries depends upon the development of power and electricity generation, transport and communications. Improved infrastructure also yields large benefits in terms of improving the lot of the poor and the population in general and helping in poverty reduction. For instance, construction of infrastructure would increase labour demand and their incomes. Also major expansion in the availability of safe water would considerably improve health among the poor. Efficient infrastructure not only add to the incremental added value from the infrastructure sector itself, besides increasing the additional output from blocked assets, it also increases employment, add to the international competitiveness of an economic activity leading to expanded exports, reduce input costs, and increase savings and investment levels. Alternatively, the effect of inadequate infrastructure is to raise the costs for industry, either directly or by creating greater uncertainties, which adds larger cost or time contingency margins.

Empirical studies quantifying the link between infrastructure and economic growth are as under- Studies linking aggregate infrastructure spending to the growth of GDP show very high returns in both time series and cross-section analysis with implied rates of returns computed at 60% for the US, 77% for Taiwan, China ,63% for a cross section of developing countries. (WDR, 1994)
Rao has summarized this relationship between infrastructure and various factors of production in the following words:

"The function of infrastructure is to release latent productivity in the factors of production singly and in coordination and bring about not only and increase in the output of individual factors and units of production but also a mutually additive effects through coordination in inputs, outputs, and space and time and thus maximize the overall rate of economic growth" (V.K.R.V. Rao)

One of the most significant contributions that infrastructure makes to economic development is, through its impact, on the availability and supply elasticity of factors of production and on the size of the market.

Infrastructure indirectly affects the supply of entrepreneurs by creating favourable investment climate and thus inducing the entrepreneurs to come forward and participate in directly productive activities. Therefore, development economists emphasise the role of transport and communication facilities in economic development.

Transport and Communication have a multi-dimensional role to play and they affect the economy in more than one ways. As Youngson remarks: "The more closely one examines the impact of transport improvement, the more clearly the one realizes how pervasive this impact is, in what a multiple ways transport system helps to determine the scope and direction of economic development and how important are transport improvements in creating new opportunities and new incentives." (Youngson, 1967)

Transport and communication facilities help greatly in widening the size of the market. This network increases the
geographical area which a producer can serve. Apart from the widening of the market a network of communication also plays an important part in familiarizing the investor or producer with the market conditions. Therefore, a cheap and extensive network of communications is the greatest blessing which any country can have from the economic point of view. (Lewis, 1966)

The development of transport and communication network, on the other hand, increases the accessibility to distant natural resources and helps in their extraction and utilization for productive purposes without which these resources will remain dormant and unutilized. Expansion of transport network has often been guided by the considerations of taking the raw materials to the centres of production. (Gadgil, 1971)

Further, a developed transport and communication network improves economic efficiency by increasing the mobility and elasticity of supply of labour and other factors of production. As Hagen rightly points out “in so far as, there is imperfect mobility, a recommendation for partial remedy is the improvement of transportation, communication and information.” (Hagen, 1975)

Furthermore, transport plays a very important part in opening up markets for local commodities without which their output could not be increased. Transport also provides access to trained manpower for repairs and maintenance jobs for farm machinery, etc. Lack of facilities for repairs and maintenance are known to be important constraints on mechanization of agriculture and setting up of industrial units in inaccessible areas.
The role of power in the process of economic development is very crucial. The use of modern technology makes heavy demand on different sources of energy, especially electricity. Power, is, therefore, regarded as the core of infrastructure and is justly given very high priority in the development plans of almost all the developing countries of today.

In addition to above, the process of development of infrastructure itself directly contributes to the growth of the economy. Huge sums of money have to be invested in the development of overhead capital which triggers off a multiplier effect on the rest of the economy through numerous forward and backward linkages.

Besides generating income, the creation and maintenance of infrastructure also generates a large volume of employment which is, often not, insignificant in comparison to the direct employment generation in the manufacturing activities.

Most of the development economists regard infrastructure as a necessary pre-condition and the strategy of development based on prior development of infrastructure has been advocated generally. Rostow is one of the exponents of the “pre-condition” theory. To quote him: “The whole set of changes in economy’s infrastructure, working force, its agriculture and foreign exchange earnings (borrowings) capacity can be generalized in the pre-supposition that before take-off can occur, there must be, in the widest sense, a certain minimum prior build up of social overhead capital if the necessary spreading effects from the take-off leading sectors are in fact to occur or if the take-off is not to be distorted or actually absorbed by the lack
of adequate flows of working (and fixed) capital in the form of agricultural products and inputs. (Rostow, 1964)

Nurkse has also advocated the strategy of building ahead of demand through he is known for his advocacy of balanced growth doctrine. To quote him, "Investment in such facilities is, therefore, absolutely unavoidable from the very start of the development programme." (Nurkse, 1961) In support of his contention, he gave the example of America which in the early nineteenth century distinguished itself above all by the way it was building up social overhead capital." (Nurkse, 1955)

So, it may be said that availability of infrastructure is a necessary condition for growth though it may not be a sufficient condition. According to Hagen: "the role of infrastructure facilities in development is coordinated with that of many other pieces of capital equipment and changes in management practices and institutions." Moreover, large infrastructure facilities have their place in the course of development but they deserve no special niche as absolute or near absolute pre-requisites of growth. (Hagen, 1975)

Hagen supports his contention by citing examples of Columbia where development of textiles and sugar production took place in the absence of infrastructural facilities and in Myanmar, in spite of development of all types of infrastructure facilities development did not take place. (Hagen, 1975)

H. B. Chenery gives the example of Southern Italy where heavy investments were made in overhead capital in the hope that development will automatically take place but the hopes were belied by experience. He argues that overhead approach either ignores the
other overhead approach either ignores the other structural changes that are needed in the rest of the economy or assumes that they will take place automatically. (Chenery, 1968) Bauer holds similar views and says that the suggestion that a ready made infrastructure is necessary for development ignores the fact that infrastructure develops in the course of economic progress, not ahead of it. (Bauer, 1973)

Habakkuk also questioned Social Overhead Capital as a precondition and points out that “in England, the principal changes in transport and agriculture took place during rather than before the period of accelerated growth. In many cases the increase in agriculture output and the creation of overhead capital are not conditions whose pre-existence explains the acceleration of growths they are part of the acceleration which needs to be explained.”

Infrastructure investments have been widely used as instruments of regional development policies and programs. Examples of infrastructure-led development at the sub-national level include the development of secondary cities in Malaysia and Thailand, transportation capacity development in the lagging Brazilian Northeast, increased connectivity and accessibility to reduce geographical isolation of the northeast peninsula of Malaysia, and the transmigration programs in Indonesia, from the densely populated inner island to the less developed outer islands, and in Nepal, from the interior mountain regions to the Terai plains (Lall 1996; Dignan et al. 1990). An explicit motivation behind these large investments derives from the view that infrastructure is an intermediate public good with an active part in the production process. Thus, increasing the stock of infrastructure in lagging regions, like increasing any other stock of capital will improve productivity of existing firms and attract
new firms, thereby helping these regions grow closer to more developed ones (Puga 2002). While research on links between infrastructure and economic growth dates back to Hirschman (1958) on theories of unbalanced growth and other development theories regarding the role of “economic and social overhead capital” in national and regional development (Nurske 1953, Nadiri 1970), renewed interest over the past 15 years is based on numerous econometric studies where infrastructure enters as an input in aggregate production functions. Aschauer’s (1989) work on the USA and Biehl’s (1986) paper on the European Community were among the first to use this approach and found that infrastructure investments have important productivity and growth effects. This sparked debates on the effects of reduction in infrastructure investments on productivity in the USA and other developed countries. For the USA, Morrison and Schwartz (1996) and Nadiri and Mamuneas (1994) find that infrastructure provision translates into cost savings, and Deno (1988) finds positive effects of infrastructure on profits of manufacturing firms in 36 metro areas. For Germany, panel estimates of a trans-log cost function for 11 federal states of (West) Germany for the period 1970–1988 show that public capital formation encourages private investment (Seitz and Licht 1992) and positively contributed to cost savings (Conrad and Seitz 1992). Data from Spanish regions for the period 1964–1991 also confirms that public capital (roads, water infrastructures, ports and urban structures) had a significant positive effect on value added.

So, it can be concluded both on ground of logic and history of economics development that minimum level of development of infrastructure is a pre-condition of economics development to make it
a smooth and continuous process. However, once that minimum level is achieved, greater policy choices are open to an economy to decide on the sequence and pattern of infrastructure as different between sectors of the economy as well as between the various components of infrastructure. It is only when a threshold level of infrastructure is built up that one can think of prioritizing the volume of investment and the type of infrastructure facility to be developed.

2.2 FINANCING STRUCTURE OF INFRASTRUCTURE PROJECTS

There is a growing realization in many developing countries of the limitation of governments in managing economic activities. Infrastructure facilities which have been the governments monopoly is now being opened up for private sector investment and management.

In developing countries, Infrastructure projects have a financing pattern of 20-30 per cent equity and 70-80 per cent debt. Power projects usually have a higher debt equity ratio of 70:30 and telecom lowest with 50:50.

Infrastructure projects require large investments, have long gestation periods and specific domestic markets. With the fall in government resources and rapid increase in demand for infrastructure, ability of government to spend on infrastructure has been severely constrained. These led to proportionately sharp reductions in government spending in infrastructure. For example, in Philippines, public investment in infrastructure fell from 5 per cent of GDP between 1979 and 1983 to less than 2 per cent during the remaining years of the 1980s. This forced particularly the Asian governments to rely increasingly on private capital. According to a World Bank
estimate 7 percent of the investment in infrastructure in developing countries came from private sector during 1994-95 and it was likely to double within a period of 5 years (IIR, p.54). Thus the scope of private financing of infrastructure investment is immense in developing countries.

According to WDR, the upsurge in private financing of infrastructure has come due to reasons like: Growing disenchantment of government and consumers with poor performance of public sector management of infrastructure; Fiscal constraints of traditional sources of funds in the form of budgetary support; Technological developments and changes enabling infrastructure services to be 'unbounded' and facilitating competition on certain bundles and reducing per unit cost; Developments in financial markets and innovations in financial instruments; and Demonstration effect of learning from the experiences of other countries.

Depending upon political commitment, strength of opposition to change, institutional capabilities, investors’ perceptions and the domestic economic and legal environment, the various options available and used for involving the private sector in infrastructure development projects have been illustrated in Fig 1. (Gary Bond and Laurence Carter, 1994)

**Option ‘A’:** Private Sector is allowed to enter part of the market to provide infrastructure service. Focus is on construction of new assets, such as independent power plants, cellular networks, or new ports. It is characterized by ‘contract based’ relationship. This contract based route is used widely. The exact nature of the contract used- BOT (Build- Operate-Transfer), BOOT (Build-Own-Operate-
Transfer), BOLT (Build-Operate-Lease-Transfer) and their many variations vary across sectors and countries. Under a BOT arrangement, the private investor builds and operates the asset for a specified period—the concession period—earns a return on his/her investment and thereafter transfers the asset to the Government. Such a structure works well for projects that can charge users and leaves the Government with the option of imposing a tariff. The BOT arrangement is widely used for long-lived assets like roads and highways, airports, bridges and so on. The BOOT scheme is a form of “Project Financing”, designed to attract private participation in financing, constructing and operating infrastructure projects. In a BOOT scheme a private project company builds a project, operates it for a sufficient period of time to earn an adequate return on investment and then transfers it to the government. The assets, contracts, inherent economic and cash flows are separated from its promoters or sponsors. The assets, contracts, inherent economic and cash flows are separated from its promoters or sponsors. The assets of the specific project serve as collateral for the loan and all loan repayments are made out of the cash flows of the project. The other form of financing is, corporate financing or balance sheet financing. Here the lenders consider the cash flows and assets of the whole company to service the debt and provide security. Power and roads are the two sectors with the largest number of projects. It still have to gain popularity in the telecom. The BOLT Scheme is just a financing technique without changing the procedure. This arrangement is presently being used for railways where the asset is created by the private sector and then leased out to the public sector for operation. The lease payments to the private sector are structured to liquidate the
debt and provide a fixed rate of return on equity. At the end of the lease, the assets are transferred to the government.

Initially, in the first option, focus remains on small projects, or on parts of a large project by 'unbundling' it. Unbundling of telecom services may take the forms of cellular, local telecom services, or main telecom operation. Unbundling often strengthens competitive pressures, facilitates private entry into parts of a market, and thus enables a more rapid capacity expansion. Thus, this approach involves relatively low political and regulatory costs, as existing assets remain under State ownership and control.

![FIG. 1 INFRASTRUCTURE PRIVATISATION - THREE WAYS](image)
**Option ‘B’:** Another route to full-fledged private participation is Divestiture. Divestiture is the process of selling state utilities to the private sector. Here unbundling is postponed to attract a strong response from private financiers. Divestiture would entail wholesale regulatory reforms and thus require considerable political will and costs. It broadens the scope of private entry and competition and may extend medium sized projects without much political opposition.

**Option ‘C’:** There is simultaneous unbundling, deregulation and divestiture. Private sector participation may extend to projects or sectors where even regulatory issues may be more difficult. It would require significant political commitment and institutional capabilities.

Though Options ‘B’ and ‘C’ have been adopted in countries like Chile and Argentina. Approach ‘A’ involving limited entry of private sector has been adopted by an increasing number of developing countries, including India.

### 2.3 SOURCES OF INFRASTRUCTURE PROJECT FINANCE

The various sources of infrastructure project finance may broadly be grouped as under:

**A. Promoters’ Equity**

Promoters/ Sponsors’ equity are the primary source of infrastructure finance. The promoters are those who launch the project, draw the feasibility report and get prepared the detailed project report. Government policy allows a debt-equity ratio of 4:1, however, the lending institutions advocate a Debt-equity ratio closer to 7:3 as a prudent measure for lending. Specialised infrastructure and mutual funds have come up to bridge the
equity gap in mega projects such as Global Power investment of GE Caps, the AIG Asian Infrastructure Fund, the Asian Infrastructure Fund of Peregrine Capital Ltd. and ICICI-Power promoted by ICICI Mutual Fund.

B. Market Borrowings

a. BONDS AND DEBENTURES

Debentures and Bonds are debt finance raised from the public by issue of offers. Debentures may be issued at par, premium or discount. The examples are Reliance Telecom’s convertible debentures and Tata’s Exchangeable Premium Bonds. The examples of PSU Bonds are Konkan Railway Bonds, SEB’s Bonds and Noida Toll Bridge Cos. Deep Discount Bonds.

In raising debt for financing power projects, the cost of funds should be the lowest so that the ultimate cost of electricity will be cheaper for consumers.

The decision of the project promoter to go for equity or debt finance depends upon various factors such as Government guidelines for power projects, incentives available and return on equity and also the cost of debt vis-avis equity.

b. EXTERNAL COMMERCIAL BORROWINGS (ECB)

These are defined to include commercial bank loans, buyers’ credit, suppliers’ credit, securitized instruments such as Floating Rate Notes, Fixed Rate Bonds, credit from official Export Credit agencies and Commercial Borrowings from private sector multi-financial institutions such as World Bank’s International
Financial Corporation (IFC), Asian Development Bank (ADB) etc.

ECBs are permitted for infrastructure projects up to 35% of their total project cost. ECBs are predominantly utilized for import of capital goods and services. More recently the Finance Ministry announced changes in the ECB policy. Although the Government tightened the ECB policy, it maintained preferential treatment which was accorded to infrastructure sector projects. The sum and substance of the amended ECB policy was that foreign funds could be raised for funding infrastructure projects without restrictions.

c. INSTITUTIONAL FINANCE

Institutional Finance refers to finance provided by various financial institutions. The examples are:

- Multilateral Development Banks
- Development Banks, e.g., IFCI, IDBI, ICICI
- Investment Institutions e.g., UTI, Mutual Funds, LIC, GIC, Venture Capital Funds, IDFC
- Credit & Guarantee Companies e.g., Exim Bank of India, ECGC
- Commercial Banks
- Investment Banks (Investment Banks unlike commercial banks enter into joint ventures to restructure, acquire or divest to issue debt/equity to raise finance for large projects as in power/telecom sector) e.g., ANZ Investment Bank, Barclays de Zoete Wedd (with Barclays Bank), Deutsche
Morgan Grenfell (through Deutsche Bank),
Goldman Sachs (tie up with Kotak Mahindra),
Hoarde Govett (through ABN Amro Bank), JP
Morgan (tie up with ICICI) etc.

Institutional Finance may take anyone of the following forms:

- Subscription to Equity
- Loan Capital
  - Direct Subscription to debts
  - Underwriting public Issue of Debts
  - Loan Assistance (Term Loans, Foreign Currency Loans)
  - Guarantees of Loans and Foreign Currency Loans
  - Guarantee of deferred payment for equipment

No individual Financial Institution can feed to power sector singly because of huge capital requirements and long gestation period of power sector. Therefore, the concept of Loan Syndication amongst the Financial Institutions is gaining momentum. This also helps in sharing the risk among the Financial Institutions apart from saving on efforts and cost because of appraisal done by the lead institution.

**d. OTHERS**

- Subsidies (including capital subsidy) and Grants from Central/State Governments.
• Foreign Aids and Donations
• Lease and Hire Purchase finance by Financing Intermediaries
• Investment by FII (Foreign Institutional Investor) FIIIs refer to institutions such as Pension Funds, Mutual Funds Investment Trusts, Asset Management Companies. These can invest in securities such as shares, debentures, warrants and schemes floated by domestic mutual funds.
• GDRs/ADRs, FCCBs (popularly known as Euro Issues) to Non Residents and treated as Foreign Direct Investment. GDR & ADRS are regarded as equity for purpose of debt-equity ratio.
• Miscellaneous like Deposits, FCDs, and loans by promoters, right shares to meet financial commitments, public issues of shares etc.

Private finance for infrastructure can be tapped from the commercial banks, stock markets or bond markets. But the experience suggests that the appetite of commercial banks for infrastructure projects is limited. In fact, it is the capital markets which have emerged as the major source of private finance for infrastructure. Between 1988 and 1992, developing countries raised $62 billion through privatisations. Asia raised $7 billion and is all set to increase its share. Bond markets are the other major source of private finance for infrastructure. They command large amounts of capital and are comfortable with maturities of 15 to 20 years, which tend to bother banks. The bonds, however, still not sovereign guarantees to succeed. The problem is that the governments are over burdened with their
debts and hence such sovereign guarantees are increasingly hard to come by. The first state to try out project financing was Gujarat (Sardar Sarovar Project) which came out with a Rs. 300 crore bond issue carrying a 19% yield. This method of financing had been copied by Karnataka in the Krishna Jala Bhagya Nigam and Maharashtra in the Krishna Valley development corporation. Other states like Andhra Pradesh tried out the build, operate and transfer (BOT) method for the Hyderabad Water Supply Project costing Rs. 500 crores. In the Pune Water Supply Project, the project had been worked out on a deferred payment basis, through 3 different parcels—Construction, Maintenance and Collection.

The Infrastructure Development Finance Company (IDFC) was set up with an authorized capital of Rs. 50 billion to infuse large investments in infrastructure sections.

2.4 REFORMS IN THE INFRASTRUCTURE SECTOR

The reforms that were initiated in the infrastructure sector from the beginning of 1991-92 included the following:

In the power sector, a package of incentives to attract private investment has been announced. This package included reduction of import duties on power equipment to 20 per cent, a five year tax holiday for new power projects; a guaranteed 16 per cent rate of return on paid up capital and provision of counter guarantees by the central government.

In 1994-95, a National Telecom Policy had been announced by the Government. This has allowed private participation in basic telecom services and foreign equity up to 49 per cent. Further telecom
projects would be treated as infrastructure and would now receive fiscal incentives like tax holiday was extended to infrastructure projects.

Permission was also granted to private air taxi companies to operate the domestic sector through the enactment of Air Cooperations Act, 1994. During 1994-95, six air taxi operators complying with the criteria prescribed with Air Craft Rules had started their operations.

In postal services also, the Government had agreed to give up its monopoly control by permitting the private sector to enter into the distribution of postal stationery on commission basis.

To promote private sector participation in the development and maintenance of roads, several measures had been announced in 1994-95, including declaration of the road sector as an industry to facilitate borrowing from the financial institutions; amendment in the National Highway Act to enable the levy of toll on road users and relaxation in Monopolies and Restrictive Trade Practices (MRTP) provisions to enable large firms to enter this sector. The Government also announced guidelines for private investment in highway development through Build Operate Transfer (BOT) route.

In ports, the private sector was being invited to participate in areas such as leasing of port equipment, setting up of private ports by coast-based industries, ship repair and maintenance and transportation within ports.

These measures reflect the Government’s commitment to open up the infrastructure sector for private sector participation, with a
view to improving their performance and to promote expansion of capacities in these critical sectors.

The other incentives include:

- A 5-year tax holding and a subsequent 30% reduced tax payment for companies undertaking maintenance and building of power, road, railways etc.

- A relaxed ECB norms to access foreign funds.

- Road Sector declared industry to facilitate borrowing ‘Path kar’ abolished.

- Amortization of license fee allowed.

- A 16% guaranteed return in power sector and projects up to 12,000 MW would not need the FIPB approval.

- Capitalization of IDC.

The major initiatives taken by the government to increase investment in the infrastructure sector are:

- 100% FDI had been permitted through the automatic route in power, and was being extended to other infrastructure sectors like roads, bridges and ports. Moreover, 100% FDI has been permitted through the approval route, the major exemptions being telecom, airline, banking, insurance and real estate.

- India had acceded to the Patent Co-operation Treaty under the Paris convention.

- The Government had bought out a special package for the IT sector and the telecom sector.

- The Government had cleared a legal loophole by amending the Electricity Act which would allow private sector to invest in
transmission though the overall control would remain with the Government.

- Foundation of the Capital Regulatory Commission and similar regulatory bodies at the state level would enable in ushering financial reforms in the power sector.

- The Union Finance Ministry had cleared the draft concession part for highway projects. The clearance of the pact would have the following implications:
  - Loan by the National Highways Authority of India to Project in the event of the revenue shortfall.
  - Detailed state support agreement for enforcement of axle load norms under the Motor Vehicles Act.
  - Political Force major compensation on the basis of 175% of equity at the time of termination.