

Private Participation in Infrastructure



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Foreword

It is generally recognised that lack of infrastructure is one of the major constraints on India's ability to sustain a high rate of growth in GDP, which is necessary to make a significant difference to quality of life and elimination of poverty over the next ten years.

The Eleventh Five Year Plan has set an ambitious target of increasing total investment in infrastructure from around 5 per cent of GDP in the base year of the Plan (2006-07) to 9 per cent by the terminal year (2011-2012). In absolute terms, this implies an increase from a level of Rs. 8,87,794 crore (\$222 billion) in the Tenth Plan to an investment requirement of Rs. 2,056,150 crore (\$514 billion) during the Eleventh Plan. As compared to 4.5 per cent in 2003-04, the investment in infrastructure as a percentage of GDP has crossed 7.5 per cent in 2008-09.

Achieving the increase in investment in infrastructure targeted in the Eleventh Plan presents many distinct challenges. In particular, the ability to finance infrastructure through the budget is limited, given the many other demands on budgetary resources. The Eleventh Plan projections imply that only about 70 per cent of the infrastructure needs can be met from public resources or the remaining 30 per cent will have to come from private investment in infrastructure in various forms, including Public Private Partnership (PPP). Such private participation would not only provide the much needed capital, it would also help to lower costs and improve efficiencies in a competitive environment.

This volume which was originally published in June 2009 was brought out to disseminate information relating to the current status of private participation in infrastructure and the initiatives already in place in pursuance of the objectives of the Eleventh Plan to attract private investment of the above order to fund public infrastructure projects. A revised updated version is now being released.

Montek Singh Ahluwalia

January 15, 2010

(Montek Singh Ahluwalia)

Executive Summary

This volume provides an overview of private participation in different infrastructure sectors over the past decade and also indicates the projected investment during the Eleventh Five Year Plan (2007-12).

For bridging the infrastructure deficit and for sustaining a growth rate of 9 per cent per annum, the Eleventh Five Year Plan envisages a total investment of Rs. 20,56,150 crore (\$514 billion) in infrastructure as against Rs. 8,87,794 crore (\$ 222 billion) realised during the Tenth Plan. However, this ambitious target cannot be met with public resources alone. The Eleventh Plan, therefore, projects that 30 per cent of the required investment will be made through private sector participation. This implies private investment of about Rs. 6,19,591 crore (\$ 154.17 billion) as compared to Rs.1,75,203 crore (\$ 43.8 billion) during the Tenth Plan.

With a view to creating an enabling environment for private participation, the government has taken a number of initiatives. These include creation of an institutional framework starting with the apex Committee on Infrastructure under the chairmanship of the Prime Minister. The Government has since constituted a Cabinet Committee on Infrastructure for steering the policy framework, approving projects and monitoring implementation. A mechanism for the appraisal and approval of Public Private Partnership (PPP) projects has also been institutionalised. Since some of the infrastructure projects may not be commercially viable, the government has initiated a scheme for providing financial support of upto 20 per cent of the capital costs of such projects. The Government has also set up the India Infrastructure Finance Company for providing upto 20 per cent of

the project costs by way of long-term debt, half of which could be provided in the form of subordinated debt which typically serves as quasi-equity.

A significant feature of the policy framework is the adoption of model documents such as concession agreements and other bid documents for award of PPP projects. Since PPP projects typically involve transfer or lease of public assets, delegation of governmental authority for recovery of user charges, operation and/or control of public utilities/services in a monopolistic environment and sharing of risk and contingent liabilities by the government, they should be regarded as public projects where accountability would continue to rest with the government. The PPP modality is only a device for getting private investment into public projects with the objective of enhancing public welfare. As such, the reliance on standard documents and processes is expected to facilitate decision-making and project award in a manner that is fair, transparent and competitive.

Opening up of the telecom sector to private investors has led to intense competition which in turn has resulted in a growth rate that is among the best in the world and competes with China. It has also led to the continued reduction in tariffs which are now perhaps the lowest in the world. During 2008-09, 63.2 per cent of the total investment in the telecom sector was contributed by the private sector. The ultimate aim of private participation benefiting the consumer with good quality service at competitive rates has thus been realised in telecom sector.

Private investment in airports, highways and ports has also been significant. International

airports at Hyderabad and Bangalore have been commissioned in 2008 and the airports at Delhi and Mumbai are undergoing a major programme of expansion and redevelopment.

Construction of National Highways has shown considerable progress with a total expenditure of Rs.17,571 crore in the year 2008-09, of which about Rs. 8,200 crore was by way of private investment. Private investment in the highway sector is expected to rise sharply, as a large number of projects are in the pipeline. In the ports sector, 12 port terminals are being developed through the PPP mode and 23 port terminals are likely to be awarded in the year 2009-10.

In the power sector, during the period between 1999-00 and 2008-09, the private sector contributed 6,571 MW or 14.5 per cent of the total generation capacity addition of 45,295 MW. Following the pro-active policies of the Central Government, several private

sector power projects are currently under different stages of execution, and as compared to the Tenth Plan, private investment in the power sector is projected to double and reach a level of about Rs. 1,85,500 crore during the Eleventh Plan period.

During the past five years, investment in infrastructure has risen from 4.9 per cent of GDP in 2002-03 to over 7.5 per cent of GDP in 2008-09. However, there is much to be done for reaching the target of 9 per cent by the year 2011-12. In sectors such as telecom, power, highways, ports and airports, the policy and regulatory framework is already in place and speeding up of the award and implementation process would accelerate the pace of investment. In the case of railways and urban infrastructure, however, the policy framework for private investment requires greater attention. There is also an urgent need for further reforms in regulation of infrastructure sectors.



1. Private Participation in Infrastructure

Introduction

1.1 Inadequate infrastructure constitutes a significant constraint on India's growth potential. The National Development Council (NDC), in its meeting held on May 20, 2006, recognised that improvement in physical infrastructure has emerged as a high priority area and that increased private participation would be necessary for mobilising the resources needed to bridge the infrastructure deficit. The Eleventh Five Year Plan document, therefore, recognises that adequate, cost-effective and quality infrastructure is a pre-requisite for sustaining the growth momentum and that investment in physical infrastructure would have to be increased from about 5 per cent of GDP during the Tenth Plan (2002-07) to 9 per cent of GDP by the terminal year of the Eleventh Plan period (2007-12).

1.2 Infrastructure development is capital intensive and requires huge resources. However, public resources available for investment in physical infrastructure are limited, as social sectors have a priority in the allocation of budgetary resources. Moreover, bulk of the investment in infrastructure sectors such as irrigation and water resource management, inland waterways, dredging at ports and in the economically or situationally disadvantaged regions would have to come from the public sector. It is, therefore, essential to rely on private participation for funding the financially viable infrastructure projects in order to bridge the financing gap.

1.3 In view of the above, the Government has been promoting investment in infrastructure sectors through a combination of public investment, private investment and Public Private Partnerships (PPPs). As a result, PPPs are increasingly becoming the preferred mode for construction and operation

of commercially viable infrastructure projects in sectors such as highways, airports, ports, railways and urban transit systems.

1.4 The Tenth Five Year Plan (2002-07) recognised that infrastructure would be a critical constraint needing large investments. The Plan envisaged development of credible PPP models and backing these with adequate public resources in terms of long-term debt and viability gap support. During this period, the Railways initiated the Own Your Wagon Scheme (OYWS) and Build, Operate, Lease, Transfer (BOLT) so as to mobilise private sector funds. Rail-Port connectivity was also planned through PPP mode. The NHAI experimented with BOT and Annuity modes for construction and operation of national highways. In the port sector, the areas



identified for private sector participation during the Tenth Plan included leasing of port assets, construction and operation of container terminals, leasing of equipment for cargo handling, pilotage and captive facilities for port based industries.

1.5 The investment in infrastructure during the Tenth Plan was Rs. 8,87,794 crore which constituted 5.07 per cent of GDP. This included Rs. 1,75,203 crore of investment by the private sector. To overcome the infrastructure deficit, the Eleventh Plan has projected an investment of Rs. 20,56,150 crore which would imply an investment of 7.6 per cent of GDP during the Eleventh Plan and 9 per cent of GDP in the terminal year of the Plan (2011-12). This includes public sector investment of Rs. 7,65,622 crore in the Central sector and Rs. 6,70,937 crore in the State sector, leaving the balance of Rs. 6,19,591 crore, to be invested by the private

sector. Private capital would thus fund 30 per cent of the total investment during the Eleventh Plan, as compared to 20 per cent realised during the Tenth Plan. The total investment in infrastructure from 1999-2000 onwards and investment in infrastructure as a percentage of GDP are shown in Figures 1 and 2 respectively.

1.6 The transition from traditional procurement to PPPs involves a change of procedures, perceptions and mindset. The key to making PPPs acceptable is to create an environment where PPPs are seen as a way of attracting private investment into public projects in a transparent and fair manner with the objective of enhancing welfare.

1.7 This volume provides an overview of the policies initiated and the progress made in attracting private investment in development of infrastructure.

Figure 1: Investment in Infrastructure

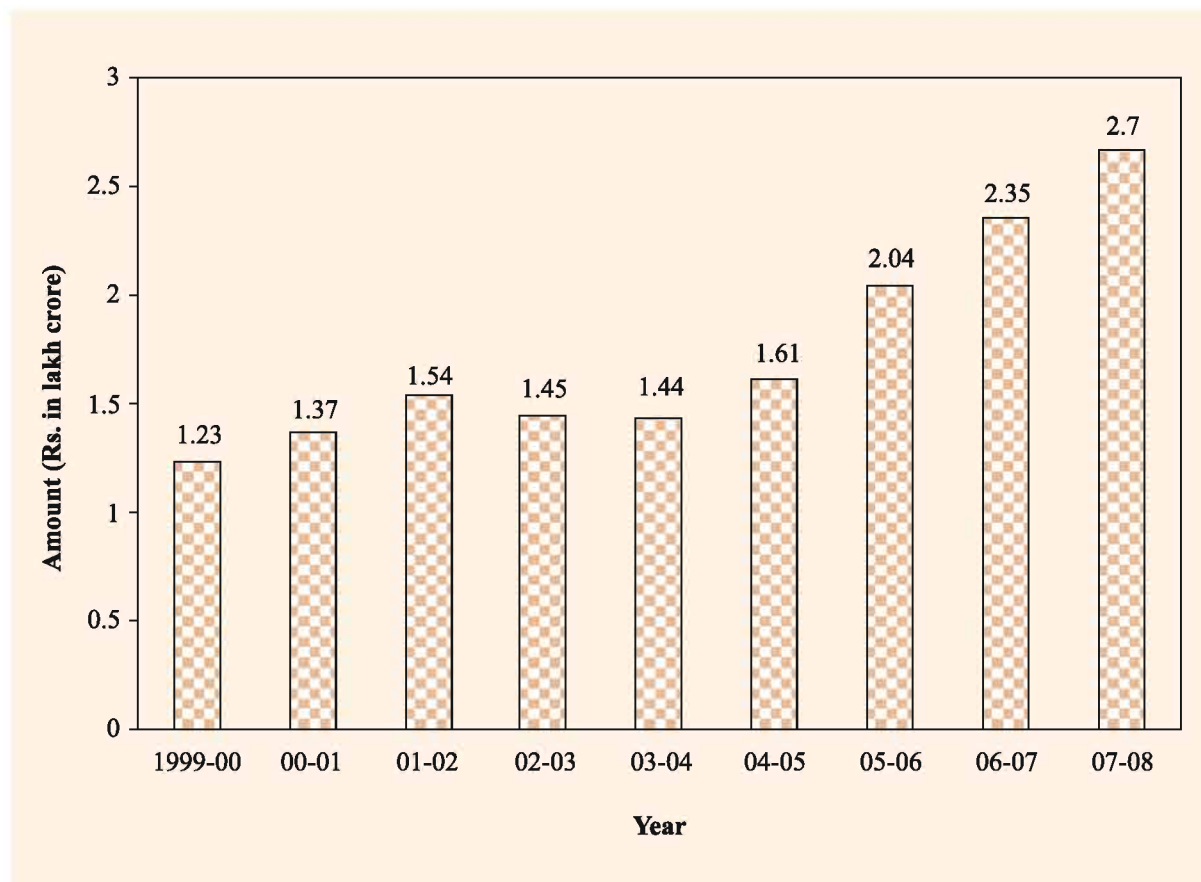
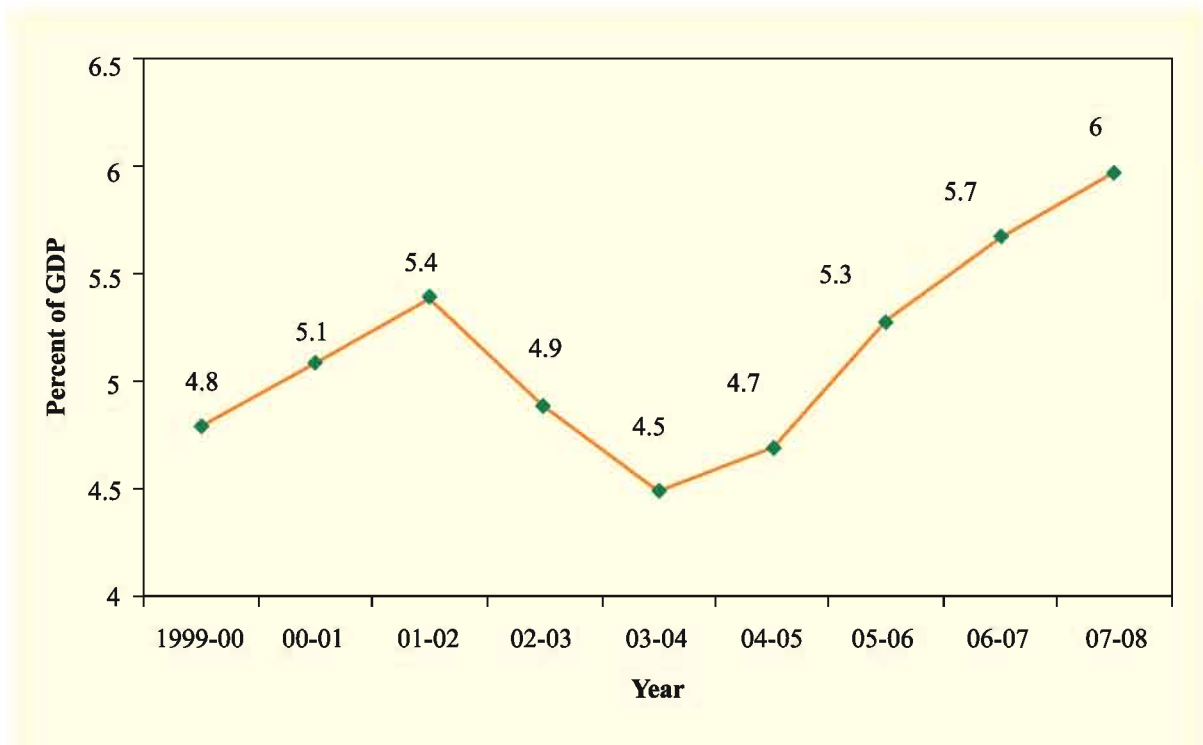


Figure 2: Infrastructure Investment as per cent of GDP



Policy initiatives to promote private participation

1.8 The Government has taken a number of initiatives to promote the development of infrastructure in general and private

participation in particular. Some of these initiatives are outlined below.

The Committee on Infrastructure (CoI)

1.9 The Committee on Infrastructure (CoI) was constituted on August 31, 2004 under the



chairmanship of the Prime Minister. Its members include the Finance Minister, the Deputy Chairman, Planning Commission and the Ministers in-charge of infrastructure ministries. The objective of CoI is to initiate policies that would ensure time-bound creation of world class infrastructure, develop structures that maximise the role of PPPs, and monitor the progress of key infrastructure projects to ensure that established targets are realised. The CoI has held several meetings and given direction to the entire policy framework for accelerating the growth in infrastructure sectors. It has also initiated institutional, regulatory and procedural reforms. The CoI is serviced by the Planning Commission through the Secretariat for CoI.

Cabinet Committee on Infrastructure (CCI)

1.10 The Cabinet Committee on Infrastructure (CCI) was constituted under the chairmanship of the Prime Minister on July 6, 2009. CCI approves and reviews policies and projects across infrastructure sectors. It

considers and decides financial, institutional and legal measures required to enhance investment in the infrastructure sectors. It lays down annual parameters and targets for performance of all infrastructure sectors and reviews their progress.

Public Private Partnership Appraisal Committee (PPPAC)

1.11 With a view to streamlining and simplifying the appraisal and approval process for PPP projects, a Public Private Partnership Appraisal Committee (PPPAC) has been constituted consisting of Secretary, Department of Economic Affairs as its chairman and Secretaries of Planning Commission, Department of Expenditure, Department of Legal Affairs and the concerned Administrative Department as its members. The project proposals are appraised by the Planning Commission and approved by the PPPAC. Until December 2009, the PPPAC had approved 144 projects involving an investment of Rs. 1,30,915 crore. A list of



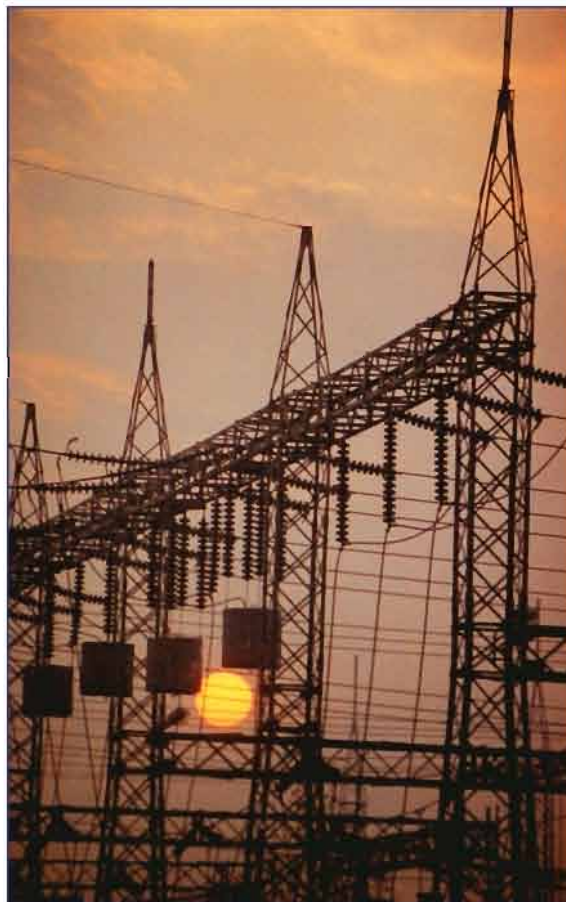
approved projects, which are in different stages of award and implementation, is at Annex-I.

Empowered Committee/Institution (EC/EI)

1.12 An institutional framework comprising an inter-ministerial Empowered Committee has been established for the purpose of appraising and approving projects for availing the VGF grant of upto 20 per cent of the cost of infrastructure projects undertaken through PPP. Until December 2009, it had approved 55 projects in the State Sector involving a total capital investment of Rs. 39,736 crore. A list of approved projects, which are in different stages of implementation, is at Annex-II.

Viability Gap Funding (VGF)

1.13 Recognising that the externalities engendered by infrastructure projects cannot always be captured by project sponsors, a Viability Gap Funding (VGF) Scheme was notified in 2006 to enhance the financial viability of competitively bid infrastructure projects which are justified by economic returns, but do not pass the standard thresholds of financial returns. Under the scheme, grant assistance of upto 20 per cent of capital costs is provided by the Central Government to PPP projects undertaken by any Central Ministry, State Government, statutory entity or local body, thus leveraging budgetary resources to access a larger pool of private capital. An additional grant of up to 20 per cent of project costs can be provided by the sponsoring Ministry, State Government or project authority. In the case of national highway projects, the entire VFG is provided by NHAI from the cess revenues transferred to it by the Government. The aforesaid VGF support for each project is determined through competitive bidding. Upto December 2009,



199 projects had been approved by the PPPAC and EC/EI with a capital investment of Rs. 1,70,651 crore.

India Infrastructure Finance Company Limited (IIFCL)

1.14 India Infrastructure Finance Company Limited (IIFCL) was set up as a non-banking company for providing long-term loans for financing infrastructure projects that typically involve long gestation periods. IIFCL provides financial assistance of up to 20 per cent of the project costs, both through direct lending to project companies and by refinancing banks and financial institutions. Upto one-half of the lending by IIFCL can also be in the form of subordinated debt, which often serves as quasi-equity. IIFCL raises funds from domestic and overseas markets on the strength of Government guarantees. Until December 2009, IIFCL had



raised Rs. 18,126 crore and had approved 125 projects with a total investment of Rs. 1,72,497 crore, of which IIFCL lending will be Rs. 21,001 crore. It had disbursed Rs. 7,110 crore upto December 2009. Of the 125 projects sanctioned by IIFCL, financial closure has taken place in 121 projects involving an investment of Rs. 1,58,003 crore.

1.15 Recognising that some infrastructure projects undertaken through the PPP mode may be experiencing difficulty in reaching financial closure, the Government authorised IIFCL to raise Rs. 10,000 crore through tax-free bonds to help refinance bank lending of longer maturity to eligible infrastructure projects, particularly in highways and ports sectors. Depending upon the need, IIFCL would be permitted to raise further resources for supporting a PPP programme of Rs. 1,00,000 crore in the highways and port sectors.

Advisory Services

1.16 Implementation of PPP projects requires appropriate advisory services in terms of

preparation of project agreements, structuring of projects, etc. Planning Commission has operationalised a scheme for technical assistance to project authorities by providing consultants for projects. Ministry of Finance has also created an India Infrastructure Project Development Fund (IIPDF) to provide loans for meeting the development expenses, including the cost of engaging consultants for PPP projects.

Tax Exemption

1.17 The Government has provided several incentives such as tax exemption and duty free imports of road building equipment and machinery to encourage private sector participation. Also, 100 per cent exemption on income tax is available to eligible infrastructure projects for a period of 10 years.

Model Documents

1.18 PPP projects typically involve transfer or lease of public assets, delegation of governmental authority for recovery of user

charges, operation and/or control of public utilities/services in a monopolistic environment and sharing of risk and contingent liabilities by the Government. The terms of the project agreements as well as the bidding process for award of concessions are usually complex because of the nature of risks and involvement of many stakeholders such as project sponsors, lenders, government agencies, users and regulatory authorities.

1.19 The use of standard documents streamlines and expedites decision-making by the authorities in a manner that is fair, transparent and competitive. The adoption of model documents such as concession agreements and other bid documents for award of PPP projects has, therefore, been mandated as the preferred approach. All projects that are based on model documents benefit from fast-track appraisal and approval. The Model Concession Agreements (MCAs) published by the Planning Commission for various sectors are listed in Box 1.

Box 1: Model Concession Agreements

- *National Highways*
- *State Highways*
- *Operation & Maintenance of Highways*
- *National Highways (Six Laning)*
- *Urban Rail Transit Systems*
- *Operation of Container Trains*
- *Non-metro Airports*
- *Greenfield Airports*
- *Re-development of Railway Stations*
- *Port Terminals*
- *Procurement-cum-Maintenance Agreement for Locomotives*

1.20 Standardised guidelines and model documents that incorporate key principles and best practices relating to the bid process for PPP projects have also been developed. Guidelines for the pre-qualification of bidders along with a Model Request for Qualification (RFQ) document have been approved by the





Committee on Infrastructure and issued by the Ministry of Finance for application to all PPP projects. Guidelines for inviting financial bids on the basis of a Model Request for Proposal (RFP) document have also been published. Similar model documents for procuring the services of consultants and advisers have also been published. The model bidding documents approved and published so far are listed in Box 2.

Box 2: Bidding Documents

- *Model Request for Qualification (RFQ) for PPP projects*
- *Model Request for Proposal (RFP) for PPP projects*
- *Model Request for Proposal (RFP) for Appointment of Technical Consultants*
- *Model Request for Proposal (RFP) for Appointment of Legal Advisers*
- *Model Request for Proposal (RFP) for Appointment of Technical Consultants for Transmission Projects*

1.21 The Eleventh Plan vision of private investment in the infrastructure sector will

require significant improvements in the quality of governance. The Government has constituted independent regulators in the power, telecom and civil aviation sectors. Tariffs in the port sector are also fixed by an independent authority. The role of independent regulators is particularly evident in the infrastructure sectors where economic policy changes have led to a shift from the earlier system, where infrastructure was provided almost exclusively by the public sector, to a system where private suppliers of infrastructure services are actively encouraged. For initiating further improvements in the regulatory structures and practices, the government has approved a paper titled “Approach to Regulation”, which has since been published by the Planning Commission.

Guidelines, Reports and Manuals

1.22 The Government has identified several areas for reform of policies and processes. A number of Guidelines, Reports and Manuals have been issued in pursuance of the initiatives described above. The Guidelines are listed in Box 3.

Box 3: Guidelines

- *Financial Support to PPPs in Infrastructure (VGF Scheme)*
- *Formulation, Appraisal and Approval of PPP Projects (PPPAC)*
- *Financing Infrastructure Projects through the India Infrastructure Finance Company Ltd.*

1.23 Based on inter-ministerial deliberations, a number of Reports have been prepared and their recommendations adopted. These are listed in Box 4.

Box 4: Reports

- *Financing of the National Highways Development Programme*
- *Financing Plan for Airports*
- *Financing Plan for Ports*
- *Restructuring of NHAI*
- *Monitoring of PPP projects*
- *Projections in the Eleventh Five Year Plan: Investment in Infrastructure*
- *Delhi-Mumbai and Delhi-Howrah Freight Corridors*
- *Road Rail Connectivity of Major Ports*
- *Customs Procedures and Functioning of Container Freight Station and Ports*
- *Simplification of Customs Procedures in Air Cargo and Airports*
- *Measures for Operationalising Open Access in the Power Sector*
- *Tariff setting for Port Terminals*
- *Reducing Dwell Time in Ports*
- *Norms and Standards for Capacity of Airport Terminals*
- *Road Safety and Traffic Management*
- *Selection of Consultants: Best Practices*
- *An Approach to Regulation in Infrastructure*
- *Frequently Asked Questions on RFQ Documents*

1.24 The MCAs specify the Standards and Specifications to which the projects should be constructed and maintained. These are contained in Manuals for Standards and Specifications. Planning Commission has published Manuals of Specifications and Standards for Two-Laning of Highways and for Four-Laning of Highways through PPPs.

1.25 The entire effort, as brought out in the paragraphs above, has been towards creation of an enabling framework within which PPP projects can be awarded and implemented smoothly without compromising on government and user interests. The progress of private participation in various infrastructure sectors is briefly described in the sections that follow.





2. Highways

Action Plan

2.1 In January 2005, the Committee on Infrastructure adopted an Action Plan for development of the National Highways network. Pursuant to the Action plan, an ambitious Financing Plan for National Highway Development Programme (NHDP) covering a total length of 45,974 km and an investment of Rs. 2,20,000 crore upto 2012 was adopted, and is at different stages of planning and implementation. Out of 45,974 km envisaged under the Financing Plan, the projects to be undertaken through PPP would cover 39,694 km (86 per cent). The progress of award of contracts and completion of work is shown in Figure 3 and the total expenditure incurred is depicted in Figure 4.

Public Private Partnership in National Highways

2.2 Upto December 2009, a total of 117 projects with an investment of Rs. 63,768 crore have been awarded for implementation through PPP concessions. In addition, 81 projects with an investment of Rs. 76,341 crore have been approved by PPPAC and are at different stages of bid process. Programme-wise details are provided below.

Four-laning of the Golden Quadrilateral and NS-EW Corridors (NHDP I & II)

2.3 The NHDP Phase I comprises the Golden Quadrilateral (GQ) linking the four

Figure 3: NHDP: Progress of contracts awarded and length completed

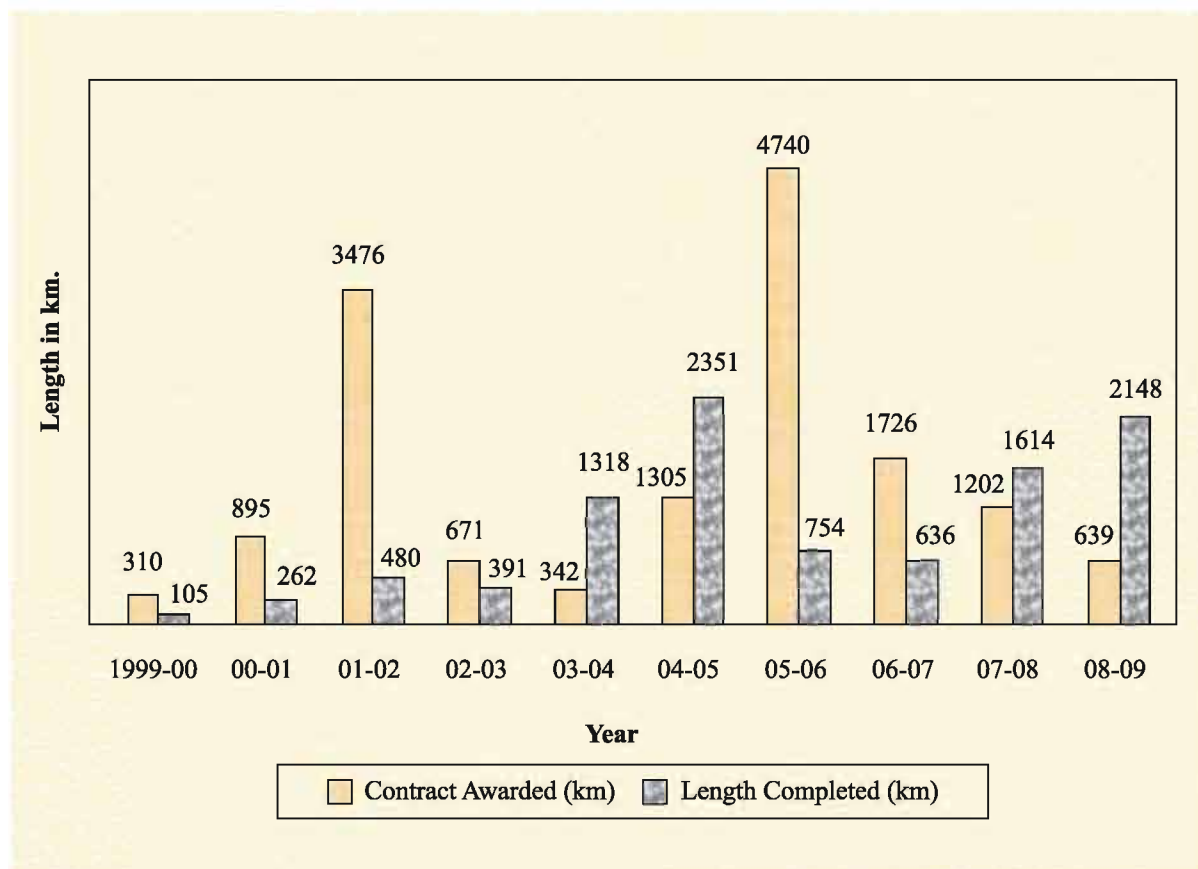
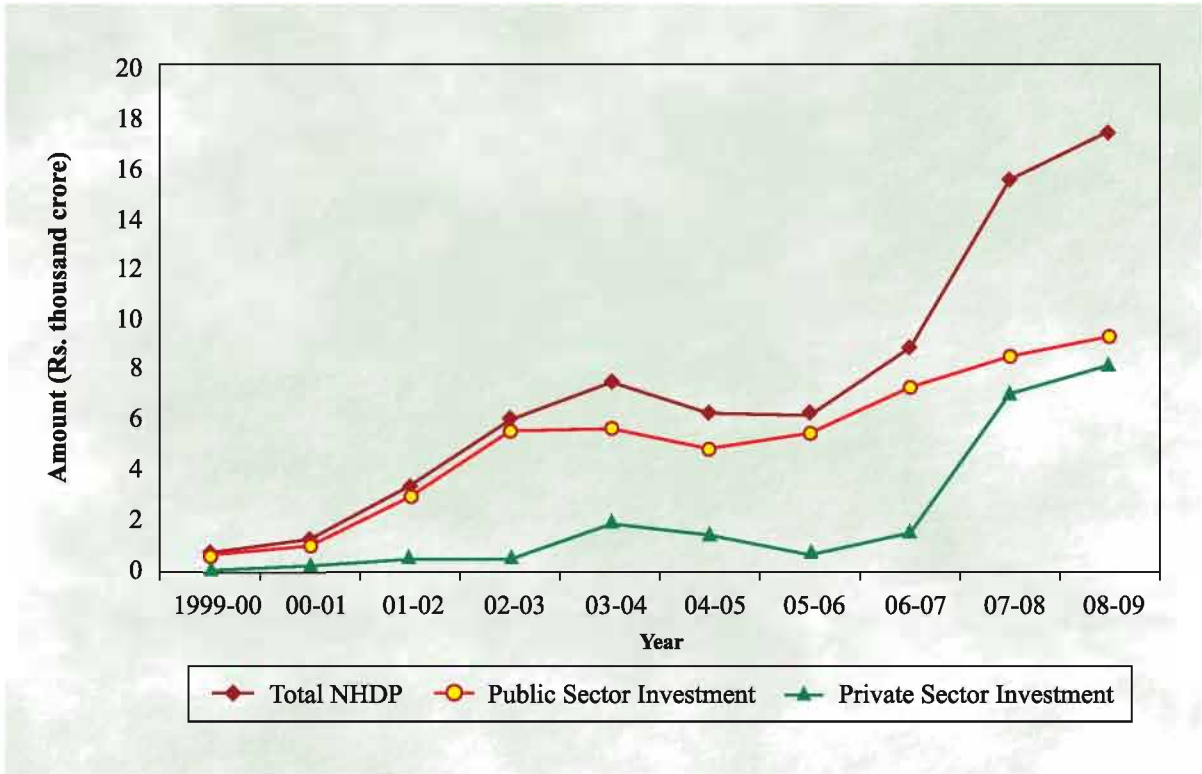


Figure 4: NHDP: Expenditure Incurred



metropolitan cities in India i.e. Delhi-Mumbai-Chennai-Kolkata. The NHDP Phase II comprises the North-South corridor connecting Srinagar to Kanyakumari including the Kochi-Salem spur and the East-

West Corridor connecting Silchar to Porbandar, besides port connectivity and some selected projects. Under NHDP Phase I (GQ), 9 projects on BOT (Toll) basis with an investment of Rs. 3,598 crore and 8 projects





on BOT (Annuity) basis with an investment of Rs. 2,354 crore have been completed. Under NHDP Phase II, 18 projects with an investment of Rs. 7,258 crore on BOT (Toll) basis have been awarded, of which 12 projects have been completed. Another 5 projects with an investment of Rs. 2,673 crore on BOT (Annuity) basis have been completed and 11 projects with an investment of Rs. 4,179 crore are under implementation.

Four-laning of 12,109 kms (NHDP-III)

2.4 The Government has approved four-laning of 12,109 km of high density national highways, connecting state capitals and providing connectivity to places of economic, commercial and tourist importance through the PPP mode. 50 projects with an investment of Rs. 31,803 crore on BOT (Toll) basis have been awarded and, of these 7 projects have been completed. 4 projects with an investment of Rs. 1,980 crore on BOT (Annuity) basis have also been awarded. In addition, PPPAC has approved 46 projects with an investment of Rs. 40,523 crore and these are at various stages of the bid process.

Two-laning of 20,000 km (NHDP-IV)

2.5 With a view to providing balanced and equitable distribution of the improved/widened highways network throughout the country, NHDP-IV envisages upgradation of 20,000 kms into two-lane highways. Feasibility studies have been commissioned for 52 projects (about 6,513 km) to be undertaken on PPP mode. One project with an investment of Rs. 195 crore has already been awarded.

Six-laning of 6,500 kms (NHDP-V)

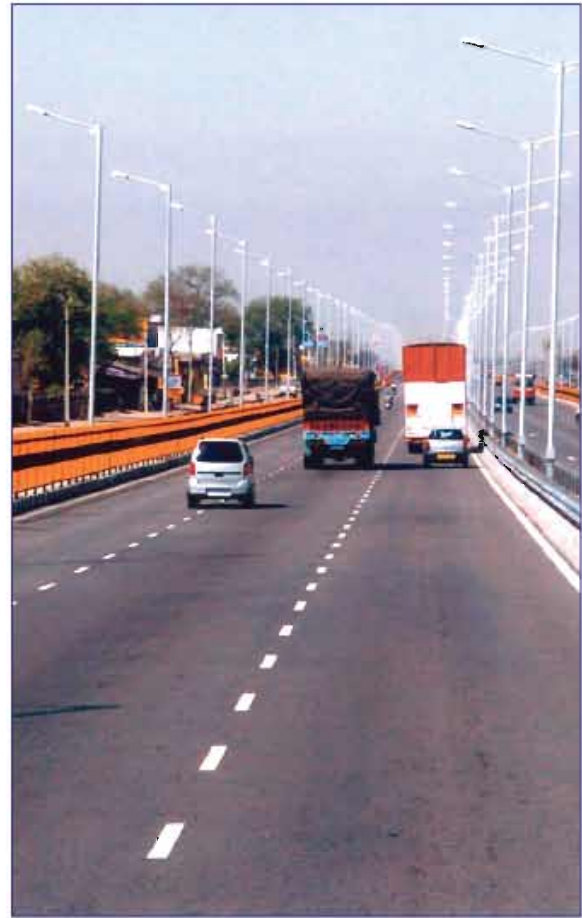
2.6 The Government has approved 6,500 km for six-laning of the four-lane highways comprising the Golden Quadrilateral and certain other high density stretches through PPP. 8 BOT (Toll) projects with an investment of Rs. 8,073 crore have been awarded, of which 2 projects have been completed. In addition, PPPAC has approved 14 projects with an investment of Rs. 21,121 crore for implementation on PPP mode. All these projects are at various stages of the bid process.

Development of 1,000 km of expressways (NHDP-VI)

2.7 With the growing importance of large cities in India, particularly those located within a few hundred kilometers of each other, expressways would be both viable and beneficial. Government has approved 1,000 km of expressways to be developed on BOT basis, at an indicative cost of Rs.16,680 crore. These expressways would be constructed on new alignments. A feasibility study for Vadodara-Mumbai (400 km) Expressway has already been awarded and the process of alignment study and award of feasibility studies for another 600 km of Expressways, (Kolkata-Dhanbad, Bangalore-Chennai and Delhi-Meerut) has also been initiated.

Other Highway Projects (NHDP-VII)

2.8 The development of 700 km of ring roads, bye-passes, grade separators and service roads is considered necessary for full utilisation of highway capacity as well as for enhanced safety and efficiency. A programme for development of such projects at an



indicative cost of Rs.16,680 crore has been approved. Concession for an elevated road (19 km) from Chennai Port to Maduravoyal in





Tamil Nadu costing Rs. 1,655 crore has been awarded on PPP mode. In addition, the Eastern Peripheral Expressway in the National Capital Region, with an investment of Rs. 2,676 crore, has also been approved by PPPAC.

Program for 2009-10

2.9 NHDP projects are expected to get a significant fillip during the year 2009-10. A large number of Feasibility Reports and bid documents are ready and it is expected that an accelerated roll out of projects would be feasible during the current financial year, i.e. 2009-10. A list of road projects likely to be awarded in the period January - March 2010 is at Annex-II. This includes 109 projects covering a length of 10,836 km.

State Highways

2.10 The Eleventh Plan emphasises the PPP approach for meeting the large financing requirements of state highways. For this purpose, a Model Concession Agreement for State Highways has been published by the Planning Commission, besides other model bid documents mentioned above. Further, grant assistance upto 20 per cent of the project cost is available under the VGF scheme for financing state sector road projects. Several State Governments such as Gujarat, Madhya Pradesh, Rajasthan, Andhra Pradesh, Karnataka, Maharashtra have taken initiatives to strengthen and upgrade the state highways through PPP. A list of state highway projects, for which VGF has been approved, is included in Annex-III.



3. Railways

Overview

3.1 The Indian Railways (IR) is a critical component of India's transport network. With a total route length of 63,221 km, IR holds the distinction of being the world's second largest rail network under a single management and the principal mode of transportation for bulk freight and long distance passenger traffic. IR is expected to carry about 1,100 million tonnes of freight traffic annually by the end of the Eleventh Five Year Plan (2011-12). Figure 5 shows the growth in passenger and freight traffic on Indian Railways.

Turnaround of Indian Railways

3.2 IR has made one of the most impressive turnarounds during the past few years. Figure 6 depicts the growth in gross revenue receipts of the Indian Railways.

3.3 Freight and passenger traffic have been growing at an average rate of nine and eight

per cent respectively over the last five years and revenue has grown even faster. This is in sharp contrast to the historical trend rates of growth at three to four per cent per annum. This turnaround has been possible mainly on account of improved resource management through increased wagon load, faster turnaround time and a rational pricing policy.

Private investment in Railways

3.4 IR has initiated a number of measures to attract private sector investment in the following areas:

Introduction of competition in container movement

3.5 With increasing containerisation of cargo, the demand for its movement by rail has grown rapidly. Until 2006, container movement on IR was the monopoly of a public sector entity, the Container Corporation

Figure 5: Originating Passenger and Freight Traffic on Indian Railways

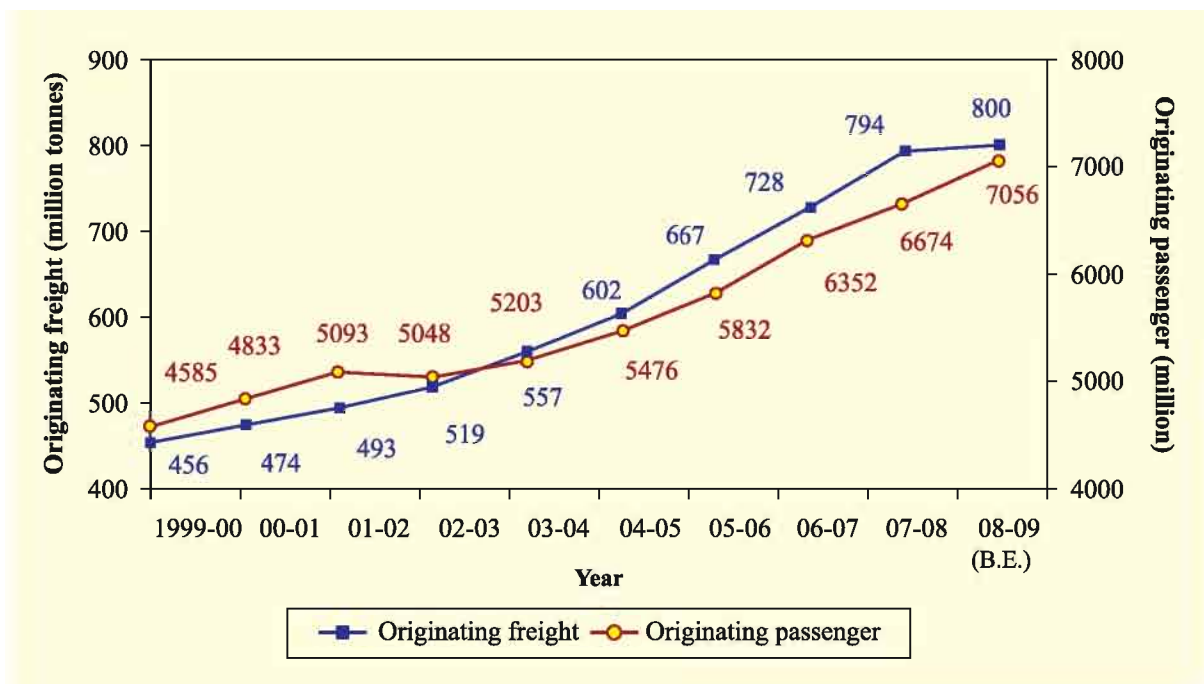
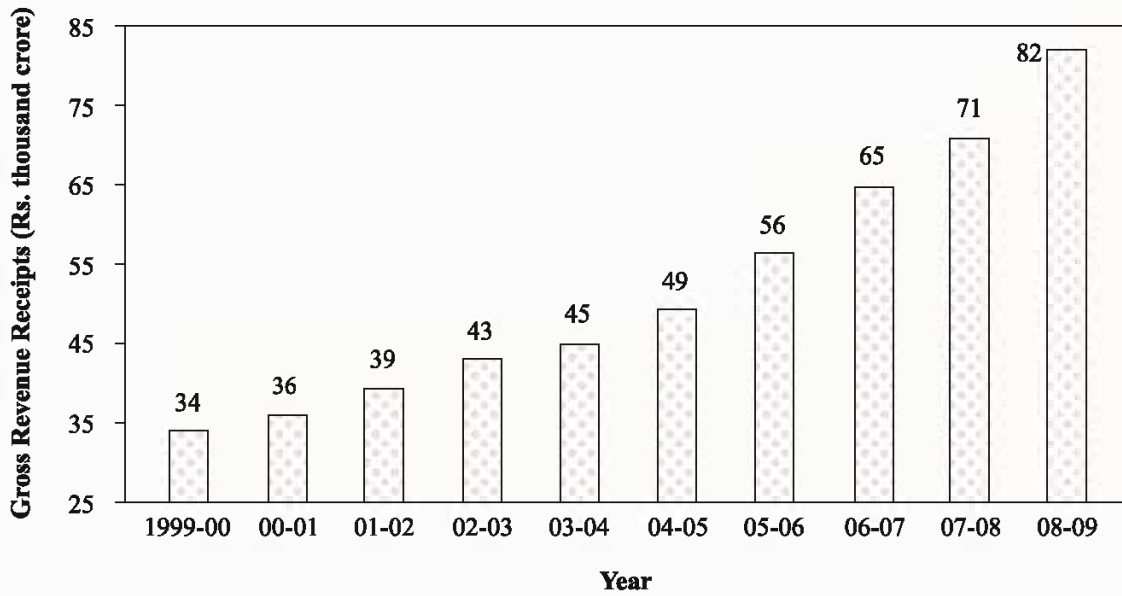


Figure 6: Indian Railways: Growth in gross revenue receipts



of India (CONCOR). Container movement has since been thrown open to competition and fourteen private entities have been granted concessions for running container trains. Ten out of fourteen concessionaires have already commenced their operations. As of December 2009, 87 rakes (container trains) have been procured by operators other than CONCOR, which already has 209 rakes. Three new Inland Container Depots (ICDs)

have also been commissioned by competing operators. In the two years of operation of the scheme, the private operators have acquired a 25 per cent share of the market and they continue to show a positive growth even in the face of economic downturn.

Dedicated Freight Corridor

3.6 IR lays great emphasis on the need to augment its freight carrying capacity. Two

Dedicated Freight Corridors on the 1,279 km Ludhiana Sonnagar (Eastern) and the 1,483 km Tuglakabad/Dadri Jawaharlal Nehru Port (Western) routes respectively are being developed with an estimated cost of about Rs. 50,000 crore. These corridors will enable the running of longer and heavier trains of 25-tonne axle load with larger moving dimensions including double stack container trains comparable to international standards. The Dedicated Freight Corridor Corporation of India Limited



(DFCCIL), a special purpose vehicle, has already started work on the project. The financing arrangements for the project currently envisage an external assistance of Rs. 17,000 crore from JBIC and Rs. 11,000 crore from the World Bank. These loans would cover about half of the estimated capital cost and the remainder will have to be raised from other sources. The Ministry of Railways would explore the possibilities of attracting private investment in some segments of the project.

Development of Railway Stations

3.7 Most of the railway stations and passenger terminals on the IR network were built several decades ago and are in need of redevelopment. The Government has, therefore, identified 26 stations in the metropolitan cities and major tourist centres for development as world-class stations through the PPP route. Part of the real estate potential of these stations would be exploited for financing these projects. The preparatory work for New Delhi and Patna stations is already in an advanced stage.

Development of Logistic Parks

3.8 Multi-Modal Logistic Parks (MMLPs) offer promising possibilities for private investment. Such parks could either be built independently at strategic locations or in Special Economic Zones, particularly along the Dedicated Freight Corridors. In March 2009, the Ministry of Railways had invited Expressions of Interest for the development of MMLPs through PPP.

Mumbai Suburban Metro Project

3.9 The Suburban Railway System in Mumbai is the most complex, densely loaded and intensively utilised system in the world. Spread over 319 route km, the system operates about 2,226 trains and caters to 6.3 million commuters per day. The Ministry of Railways has commissioned a feasibility study for introduction of a 60 km elevated, fully air-conditioned rail system between Churchgate and Virar stations. The project is proposed to be implemented through PPP on Design, Build, Finance, Operate and Transfer basis.





4. Ports

Overview of the Port sector

4.1 The port sector is crucial for economic growth and trade expansion. Almost 95 per cent by volume and 70 per cent by value of the country's international trade is conducted through its 12 major and 187 minor/intermediate (non-major) ports. Collectively, the major ports handle about 75 per cent of the country's maritime cargo.

4.2 According to the Financing Plan for Ports, development of Major Ports would require an investment of Rs. 57,452 crore between 2006-07 and 2011-12 while development of other ports (i.e. ports not owned by the Central Government) would require Rs. 35,933 crore over the same period, aggregating to Rs. 93,385 crore. Of this, an investment of approximately Rs. 68,835 crore is envisaged from PPPs.

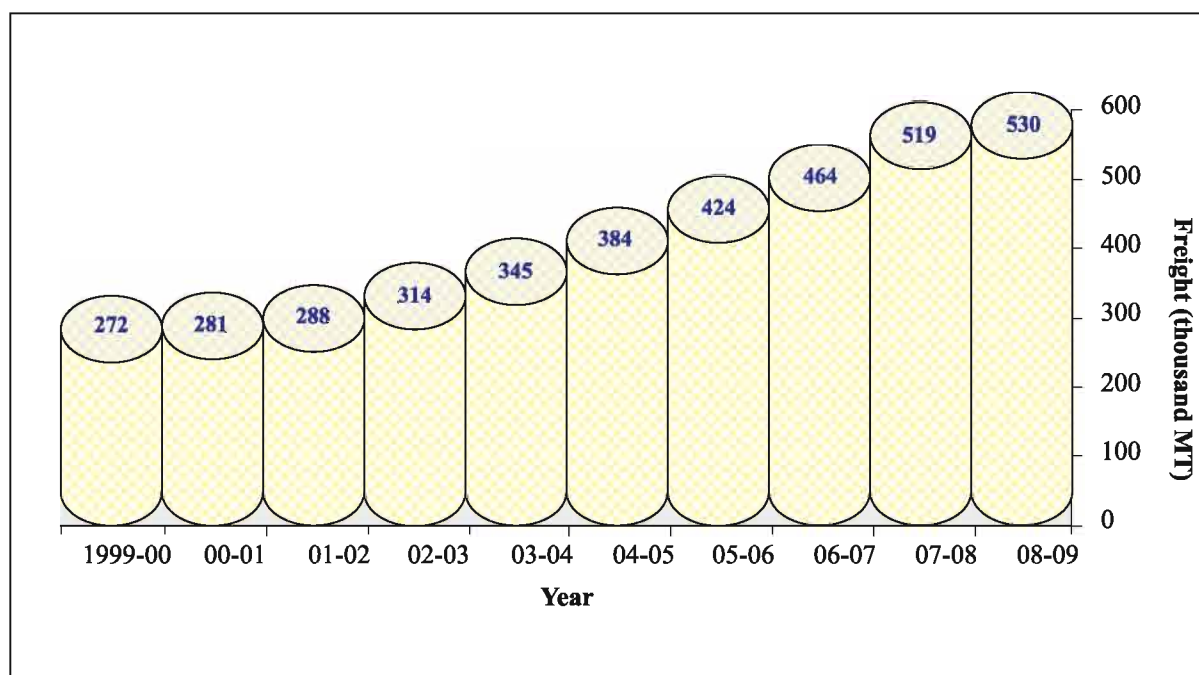
4.3 In recent times, India has witnessed a significant increase in cargo traffic. Against a

compounded annual growth rate (CAGR) of 6.74 per cent during the post-liberalisation period (1991-92 to 2003-04), traffic growth at Major Ports has risen to around 10 per cent since 2003-04. Moreover, growth in cargo traffic across all ports has been approximately 19 per cent for the last few years. By the end of the Eleventh Plan, the total traffic at ports has been projected at 1,009 MMT, out of which 708 MMT will be handled at Major Ports. As such, capacity augmentation and modernisation of ports has assumed great importance. Figure 7 shows the growth of traffic at Major Ports.

Plan for capacity augmentation and enhanced efficiency

4.4 To cope with the burgeoning traffic of international trade, the Government has undertaken several initiatives to bring the port sector at par with global standards. Efforts are

Figure 7: Growth of traffic at Major Ports





underway not only to create additional capacity, but also to increase the efficiency of existing capacity. Thus, the reduction in dwell time and transaction costs have been assigned high priority. High-level Inter-Ministerial



Groups have submitted their recommendations which are being implemented. A plan for improving rail-road connectivity of Major Ports was formulated by a high-level committee and most of the projects are in an advanced stage of implementation. The plan stresses upon the need for four-lane road and double-line rail connectivity for all Major Ports. Furthermore, several measures to simplify and streamline procedures related to customs and other clearances have also been implemented. While recognising that the shipping industry is moving towards larger vessels, a plan for dredging of Major Ports has also been formulated and dredging projects are in different stages of approval and implementation.

4.5 The twelve Major Ports have prepared 20-year perspective plans with the assistance of international experts. The overall aim is to transform Indian ports into world-class facilities suited to the requirements of the growing economy. This exercise has provided a fresh outlook to port development, facilitated comparison with international

benchmarks and enabled transfer of knowledge across the Major Port authorities.

4.6 Compared to the actual traffic of 424 MMT at the Major Ports in 2005-06, the projected traffic to be handled in the year 2011-12 would be 708 MMT. Keeping in view the need to provide for buffer capacity and seasonal variations, a capacity of 1,002 MMT would be required at Major Ports by 2011-12, as compared to the existing capacity of 456 MMT in 2005-06. A capacity addition of 546 MMT would, therefore, be required during the period 2006-07 to 2011-12.

Private sector investment

4.7 The Government has encouraged private sector participation in port development and operations. Foreign Direct Investment upto

100 per cent is permitted under the automatic route for port development projects. Since the mid-nineties, several major ports have assumed the role of landlord ports, and as such, international operators are invited to submit competitive bids for building and operating port terminals on a revenue share basis.

4.8 Foreign players including Maersk (JNPT), P&O (JNPT & Chennai), Dubai Ports International (Kochi & Vizag) and Port of Singapore Authority (Tuticorin) have already established themselves in the Indian port sector. Future expansion in the sector is also being pursued through private participation.

Investments in Major Ports

4.9 Out of the total planned investments of Rs. 57,452 crore, likely investments through

Table 1: Ongoing PPP projects in the port sector

SI. No	Port	Nature of Project	Project Cost (Rs. crore)	Scheduled Completion Date
1	Cochin	Container Terminal	2,118	August 2010
2	Cochin	LNG Re-gasification Terminal (Captive)	3,195	March 2012
3	Ennore	Coal Terminal	348	June 2010
4	Ennore	Iron ore terminal	480	June 2010
5	Kandla	Multipurpose Cargo Berths	755	September 2011
6	Mormugao	Coal Terminal	334	March 2012
7	Mumbai	Container terminal	1,460	December 2011
8	New Mangalore	Iron Ore Berth	177	July 2011
9	New Mangalore	Coal Terminal (Captive Jetty)	230	2010
10	Paradip	Deep Draught Iron Ore Berth	591	April 2012
11	Paradip	Deep Draught Coal Berth	479	June 2012
	Total		10,218	

the PPP mode are estimated at Rs. 38,079 crore. The investments are being undertaken for the upgradation/construction of berths, deepening of channels and procurement/replacement of equipment. Table 1 shows the port terminal projects undertaken at the Major Ports through the PPP mode.

4.10 The Department of Shipping is planning to award 30 Port Terminal projects through PPP during 2009-12. A list of these projects is at Annex IV.

Investments in Other Ports

4.11 Other ports are expected to play a significant role in handling maritime cargo. Traffic at other/private ports has grown at 11.74 per cent per annum and its share in total traffic is expected to reach 30 per cent by 2011-12. By that time, these ports are expected to more than double their capacity from 228 MMT to upwards of 575 MMT. The total investment envisaged in other ports amounts to Rs. 35,933 crore with private sector contribution estimated at Rs. 28,664 crore. Some of the noteworthy private initiatives are as follows:

a) **Pipavav Port:** Located in the Saurashtra region of Gujarat, Pipavav is a privately owned port and has a large container terminal. Developed at a cost of Rs. 595 crore, the port handles a variety of bulk cargo ranging from coal & steel to fertilizers. Currently, its bulk cargo handling capacity stands at 15 MMT.

b) **Gangavaram Port:** Located in Andhra Pradesh, the port has a depth of up to 21 meters. As such, it is capable of handling Super cape-size vessels of up to 200,000 DWT. Construction at the site commenced in 2005 and trial operations started in August 2008. The port is being built in 4 phases with a total investment of Rs. 2,000 crore in Phase-I. The port has a cargo handling capacity of 30 MMT in its first phase which consists of five berths. A total of 29 berths are proposed to be constructed at the port. The port currently handles bulk cargo in the form of limestone, coal, steel products and petrochemicals.

c) **Simar Port:** Located in Gujarat the project is a greenfield venture being constructed at a cost of Rs. 2,100 crore. The





port is expected to attain capacity aggregating 9.8 MMT by 2010.

d) **Gopalpur Port:** Located in Orissa, the project is being developed at an estimated cost of Rs. 1,700 crore. By 2012, the project will be an all-weather facility with a capacity of 20 MMT.

e) **Mundra Port:** Developed at a cost of Rs. 1,056 crore, Mundra Port in Gujarat is the largest private port in India. The port provides cargo handling as well as other value added port services. The port currently has a capacity of 100 MMT and handles bulk, liquid and containerised cargo.

f) **Dhamra Port:** Located in Orissa, the port is being developed at a cost of Rs. 2,469 crore. The port is expected to be ready for commercial operation by March 2010. The estimated capacity of Phase-I is 25 MMT. Overall, the port is scheduled to have 13 berths with a capacity of 83 MMT.

g) **Kirtania Port:** The port is to be developed in Orissa at an estimated cost of Rs. 2,000 crore. The project will be constructed in three phases with the first phase to be completed by 2010 with four berths capable of handling 14 MMT of bulk cargo.



5. Civil Aviation

Overview

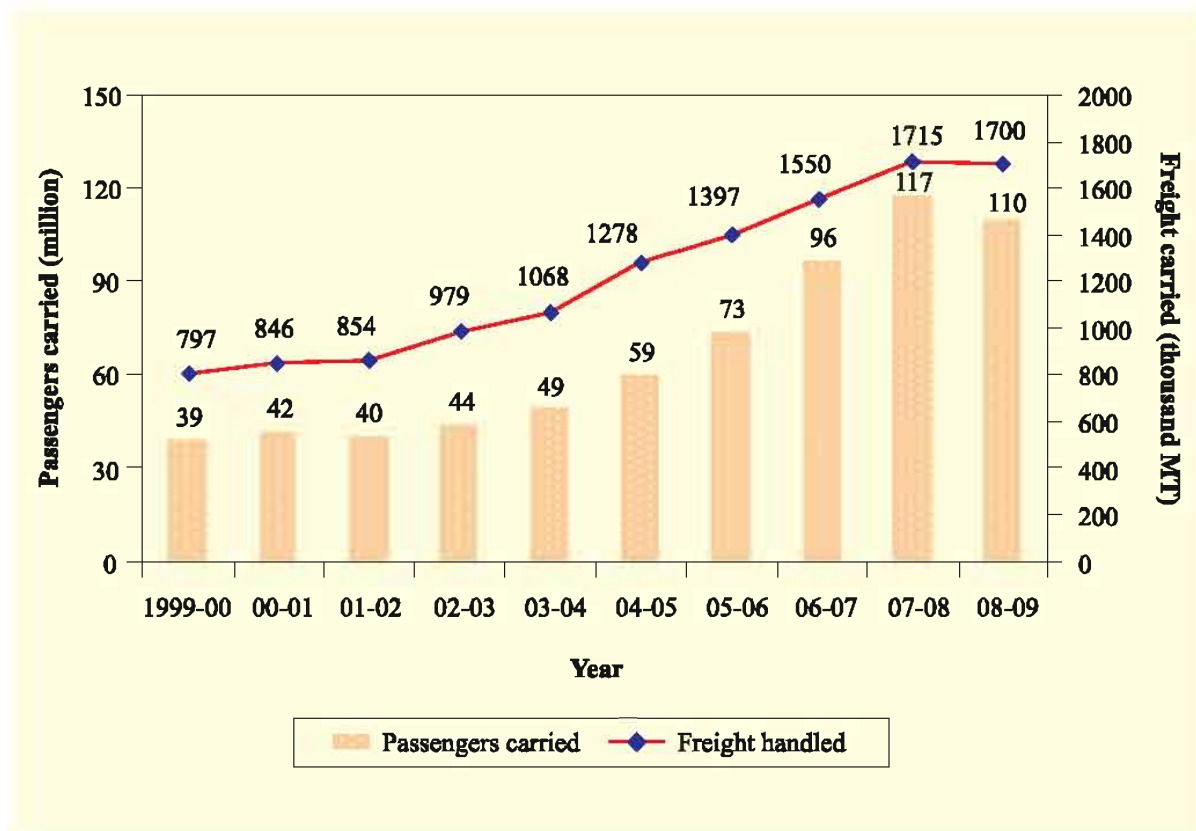
5.1 Air passenger growth in India has been one of the highest in the world, and is expected to surpass countries like China, France and Australia in the years to come. India's civil aviation market has grown at a compound annual growth rate (CAGR) of 18 per cent, and was worth US\$ 5.6 billion in 2008. The Centre for Asia Pacific Aviation (CAPA) has forecast a total market of more than 100 million passengers by 2010. In addition, around 3.4 million tonnes of cargo per annum is expected to be handled by 2010. The growth in air traffic from 1999-00 to 2008-09 is shown in Figure 8 below.

Private Participation

Development and modernisation of Metro airports

5.2 Keeping in line with its policy of liberalisation, the Government has decided to modernise the major international airports and attract private participation in order to induct the much needed capital for expansion and modernisation of metro airports to world class standards. Four metro airports at Delhi, Mumbai, Bangalore and Hyderabad are being developed and operated by private entities through PPP concessions while Kolkata and Chennai are being developed by the Airports Authority of India (AAI).

Figure 8: Passengers and Freight carried by air transport





Delhi International Airport

5.3 The Indira Gandhi International Airport (IGIA) at New Delhi was handed over to a private entity in May 2006 for development and operation of the airport. Modernisation work at IGI Airport started in January 2007 and is likely to be completed in 2010 at a total cost of Rs. 8,975 crore. It will have a capacity for handling 37 million passengers per annum.

Mumbai International Airport

5.4 The Chatrapathi Shivaji International Airport (CSIA) at Mumbai was handed over to a private entity in August 2006 for development and operation of the airport. Modernisation work at the CSI Airport has started and is likely to be completed in 2012. The integrated airport terminal would be capable of handling 40 million passengers per annum.

Hyderabad International Airport

5.5 Rajiv Gandhi International Airport, a

PPP project, was commissioned in March, 2008 with an investment of Rs. 2,920 crore. The airport can handle 12 million passengers a year. The capacity of this airport would be increased to 40 million passengers a year in the second phase.

Bengaluru International Airport

5.6 Bengaluru International Airport, a PPP project, was commissioned in 2009 with an investment of Rs. 1,930 crore. The airport was originally designed to handle 3.5 million passengers a year, but was redesigned to handle 12 million passengers per year.

Development and modernisation of Non-metro airports

5.7 The Government has decided to modernise 35 non-metro airports to world class standards. The runways, terminal buildings and equipment are being upgraded by AAI as part of this initiative. The city-side development of these airports would be undertaken through various forms of Public Private Partnerships.

5.8 New terminal buildings are being constructed at Ahmedabad, Amritsar, Aurangabad, Agatti, Bhopal, Bhubaneswar, Chandigarh, Dehradun, Goa, Jaipur, Lucknow, Indore, Khajuraho, Madurai, Mangalore, Port Blair, Ranchi, Raipur, Rajkot, Trivandrum, Trichy, Udaipur, Varanasi and Vishakhapatnam airports. Modification and expansion of existing terminal buildings is being undertaken in Agra, Coimbatore, Dimapur, Guwahati, Imphal, Jammu, Nagpur, Patna, Pune and Vadodara. Airside works including expansion and strengthening of runway for wide-bodied aircraft operations, extension and new construction of apron for more parking spaces for aircrafts, link taxiways and parallel taxi tracks are being undertaken at these airports, and have already been completed in some cases.



5.9 At about 24 of these non-metro airports, city-side development through PPPs is proposed to be taken up. The maintenance and commercial exploitation of the new terminal buildings are proposed to be outsourced to credible private entities so that passenger amenities at these airports are

maintained at world class levels. Many of these airports have surplus land that can be used to provide cargo facilities and other passenger amenities. Initially, two airports at Udaipur and Amritsar have been taken up and the bidders have been short-listed.



5.10 A Model Concession Agreement for development of non-metro airports has also been prepared and published. This was extensively discussed in an Inter-Ministerial Group and thereafter approved by the Empowered Sub-Committee of the Committee on Infrastructure.

Greenfield Airports

5.11 The Policy for Greenfield Airports was approved by the Government in April 2008 to enable greenfield airports to be set up on PPP basis. Foreign Direct Investment up to 74 per cent is permitted through automatic approvals. Planning Commission has developed a Model Concession Agreement for greenfield airports to enable the State Governments to take up the development of such airports through PPP.

5.12 In the past, government policy relating to greenfield airports was restrictive and aimed at protecting the financial viability of existing airports. However, the spurt in traffic has led to a liberalised approach towards setting up of greenfield airports with a view

to expanding the airport infrastructure. Upto December 2008, the Central Government had approved 10 greenfield airports. These include airports at Goa, Navi Mumbai, Kannur, Bijapur, Simoga, Hassan, Gulbarga, Sindhudurg, Dabra and Durgapur. Table 2 shows the status of development of greenfield airports as on December 31, 2008.

Airport Economic Regulatory Authority

5.13 The Parliament has enacted a law for setting up the Airport Economic Regulatory Authority (AERA) to approve tariffs of aeronautical services and to monitor performance standards of airports. The Authority is now operational.

Other policy Initiatives

5.14 Other initiatives which have facilitated private sector participation include the permission to private transport carriers to operate in the domestic and international sectors progressively and the adoption of the open sky policy.



Table 2: Status of Greenfield Airports

S.No.	Name of airport	State	Status
Projects commissioned			
1.	Bangalore International Airport	Karnataka	Commissioned in May 2008
2.	Hyderabad International Airport	Andhra Pradesh	Commissioned in March 2008
Approval granted by the Central Government			
3.	Mopa Airport	Goa	Planning stage
4.	Navi Mumbai International Airport	Maharashtra	Planning stage
5.	Kannur Airport	Kerala	Planning stage
6.	Bijapur Airport	Karnataka	Awarded
7.	Simoga Airport	Karnataka	Awarded
8.	Hassan Airport	Karnataka	Awarded
9.	Gulbarga Airport	Karnataka	Awarded
10.	Sindhudurg Airport	Maharashtra	In-principle approval accorded
11.	Dabra Airport, Gwalior	Madhya Pradesh	In-principle approval accorded
12.	Durgapur Airport	West Bengal	In-principle approval accorded
Proposals under consideration with the Government			
13.	Greater NOIDA International Airport	Uttar Pradesh	Under Consideration
14.	Chakan International Airport	Maharashtra	Under Consideration
15.	Karaikal Airport	Puducherry	Under Consideration
16.	Airport at Jhajjar	Haryana	Under Consideration
17.	Ludhiana	Punjab	Under Consideration
18.	Paladi- Ramsinghpur	Rajasthan	Under Consideration
19.	Ankleshwar, Bharuch	Gujarat	Under Consideration
20.	Ramnad, Rameshwaram	Tamil Nadu	Under Consideration



6. Telecom

Overview

6.1 India has the third largest telephone network in the world, with 543.20 million connections. The gross revenues for the sector have grown to Rs 1,30,000 crore which account for 3 per cent of the national GDP. This rapid growth in the telecom network has resulted in an overall teledensity of 46.23 per cent at the end of November 2009. This is more than the 2010 target of achieving 15 per cent teledensity by 2010 as envisaged in the New Telecom Policy (NTP) 1999. This growth is attributable not only to proactive and positive policy measures of the Government but also to competition coupled with quantum improvements in technology, both of which have led to rapid expansion of networks and reduction in tariffs. The growth in teledensity is shown in Figure 9 below.

6.2 The opening up of telecom sector has led to large inflows of investment. The total investment has expanded to Rs. 99,600 crore in the Tenth Five Year Plan period largely because of a sharp increase in private investment that rose from about Rs. 14,800 crore in the Ninth Plan to Rs. 54,400 crore in the Tenth Plan. For the same period, the public investment declined from Rs. 88,800 crore to Rs. 45,200 crore. The expansion in telecom services is thus driven by the private sector, with public sector contributing only about one-fourth of the growth. For the Eleventh Plan period, it is expected that the private sector will contribute Rs. 1,77,686 crore which will account for 68.75 per cent of the total investment of Rs. 2,58,439 crore. The growth in investment over the past ten years may be seen in Figure 10.

Figure 9: Teledensity in India

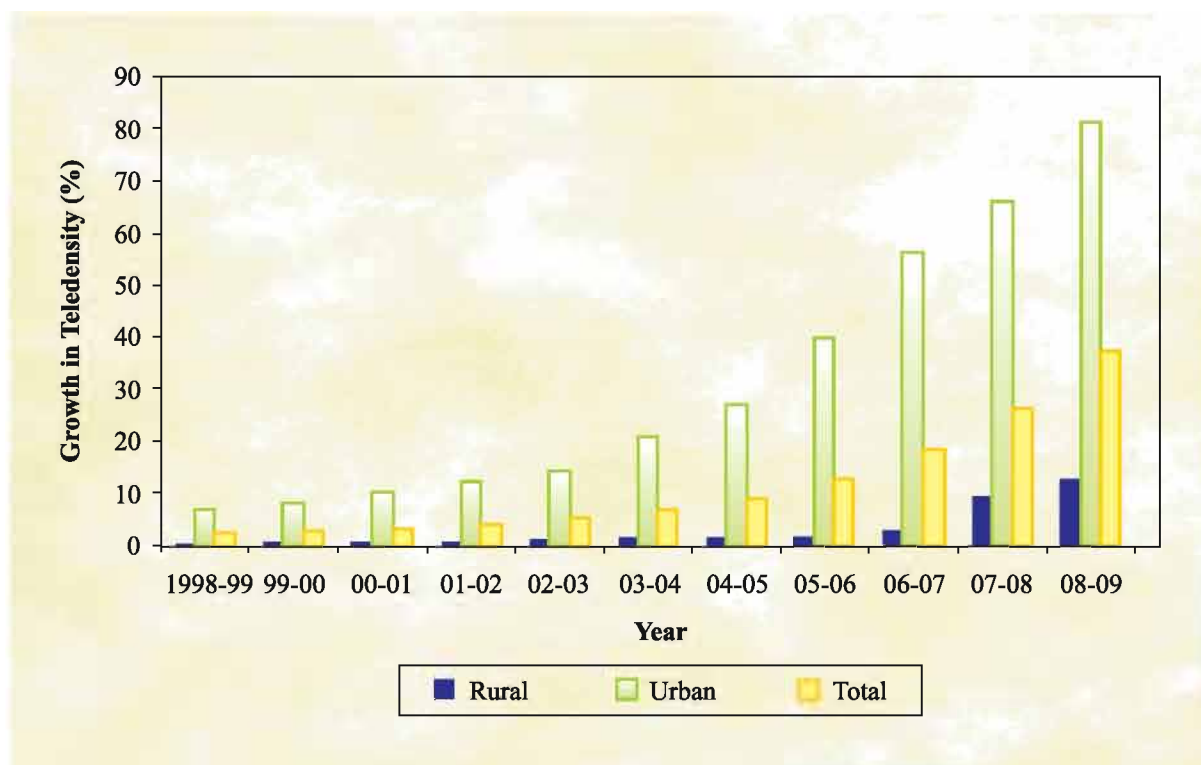
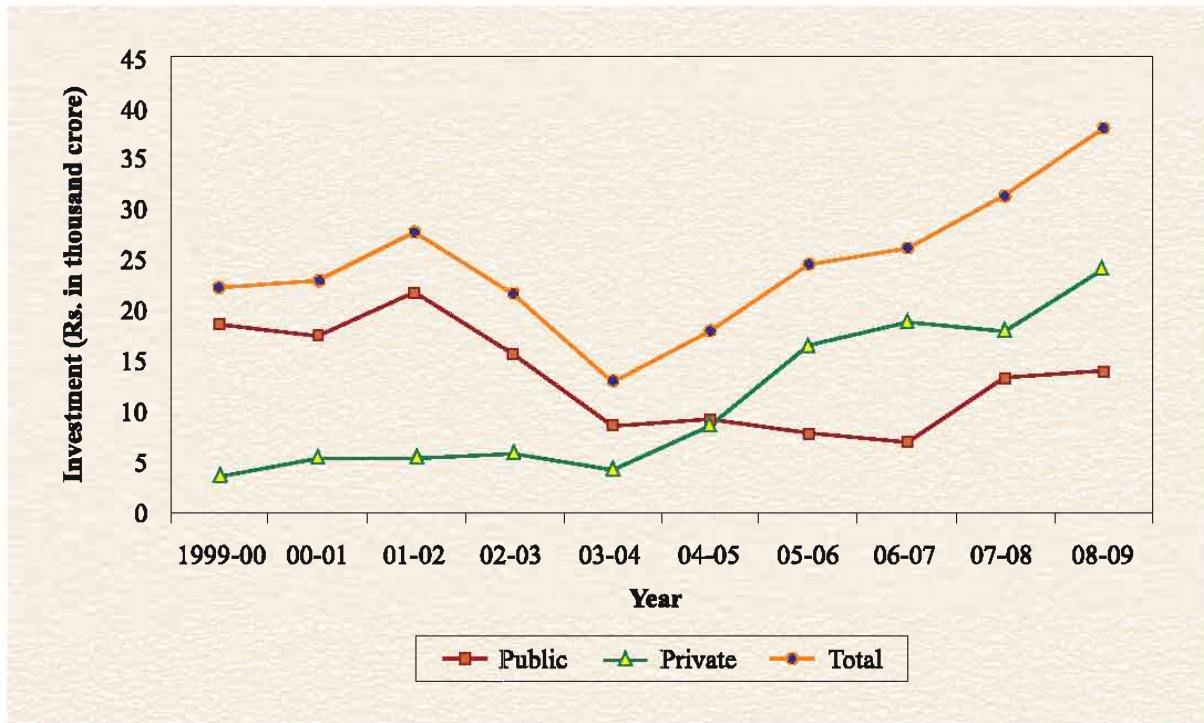


Figure 10: Investment in Telecom Sector (Rs. cr.)



Private Investment

Mobile Telephony

6.3 India has the second largest wireless network in the world after USA. Of the fifteen odd players in the sector, only two are public sector entities. The subscriber base has increased from 3.37 crore at the end of March 2004 to 50.60 crore by the end of December 2009. The share of wireless in the total number of phones is 93.15 per cent as on November 30, 2009 in which the private

sector share is about 85 per cent. Wireline connections consist of 3.71 crore subscribers. The top three private sector providers, viz., Bharti, Reliance and Vodafone account for 58.4 per cent of the total wireless customer base of 50.60 crore as on November 30, 2009.

Wire Line

6.4 The total subscriber base of fixed (Wireline) lines stood at 3.71 crore as on November 30, 2009. The incumbent public sector entities, viz., BSNL and MTNL have a

market share of 75.98 per cent and 9.41 per cent respectively in the subscriber base, while all the five private operators together have a share of 14.61 per cent. The market share of public and private sector enterprises in the total Gross Revenue (GR) from telecom services is 23.09 per cent and 76.91 per cent respectively in the quarter ending September 2009.



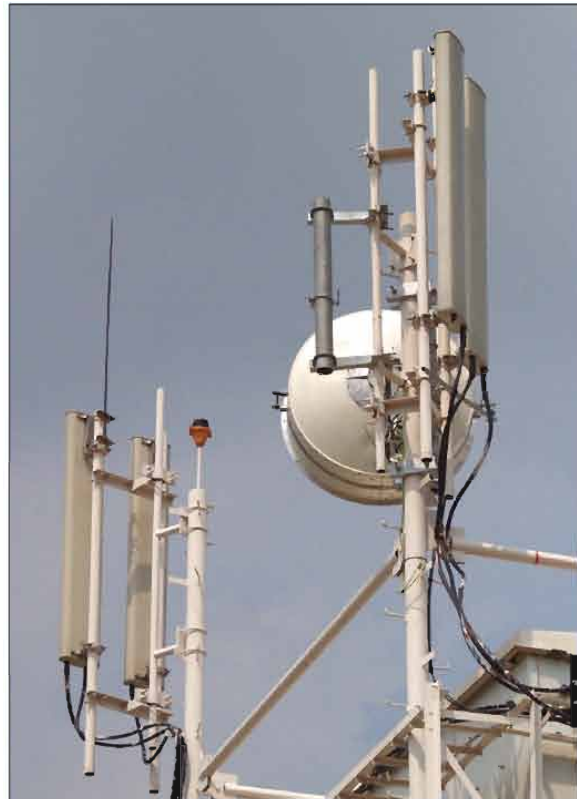
Third Generation (3G) Mobile Services

6.5 To resolve congestion in 2G mobile services and to stimulate competition in the market, 3G value added services, enabling live TV, high-speed mobile broadband, movie downloads and other gen-next services, have been introduced in India. The auctioning for the spectrum would be conducted in four stages. BSNL and MTNL have already launched 3G services in 13 cities, including Delhi and Mumbai.

Broadband Services

6.6 As against 50,000 subscribers at the end of 2004, there were 14.63 million internet subscribers at the end of September 2009. Of these, 7.21 million were broadband subscribers with a download speed of 256 Kbps or more, catered to by 84 broadband service providers. Of the 84 broadband service providers, 15 providers (with more than 10,000 subscribers each) together had the bulk share of 98.64 per cent of the total subscriber base. In terms of technology usage, of the 7.21 million broadband subscribers, 86.55 per cent are DSL-based, 7.28 per cent use the Cable Modem, 4.42 per cent Ethernet LAN, 0.53 per cent Optic Fibre, 0.90 per cent Wireless, and 0.32 per cent Leased Line, while 0.01 per cent use other technologies.

6.7 The Government announced the Broadband Policy in 2004 and the Broadband Regulations came into effect on January 1, 2007. However, the growth of broadband has been slower than projected due to lack of access network to support higher bandwidth at affordable prices and limited availability of the copper loop in local networks in DSL-based technologies. Unless optical fibre cable networks are laid on large scale, it will be difficult to provide high speed internet access. With the opening of access network to the wireless access technologies such as 3G and



WiMAX, it is likely that wireless broadband will provide wider coverage but not necessarily at the very high speeds enabled by optical fibre networks.

Foreign Investment

6.8 Policy measures like enhancement of FDI limits from 49 per cent to 74 per cent have been announced. The enhancement of FDI limit has facilitated an increase in inflow from Rs. 570 crore in the year 2004-05 to Rs. 11,727 crore in the year 2008-09 and Rs. 10,277 crore in the year 2009-10 (upto October).

Competition

6.9 To summarise, the competition in this sector has been quite intense and as a result, the consumer and the economy have benefited significantly from private participation. It has resulted in investment in technology to maintain or advance the leadership position of private players, improved the quality of services provided and has also reduced the cost of services to the customers.



7. Power Sector

Overview

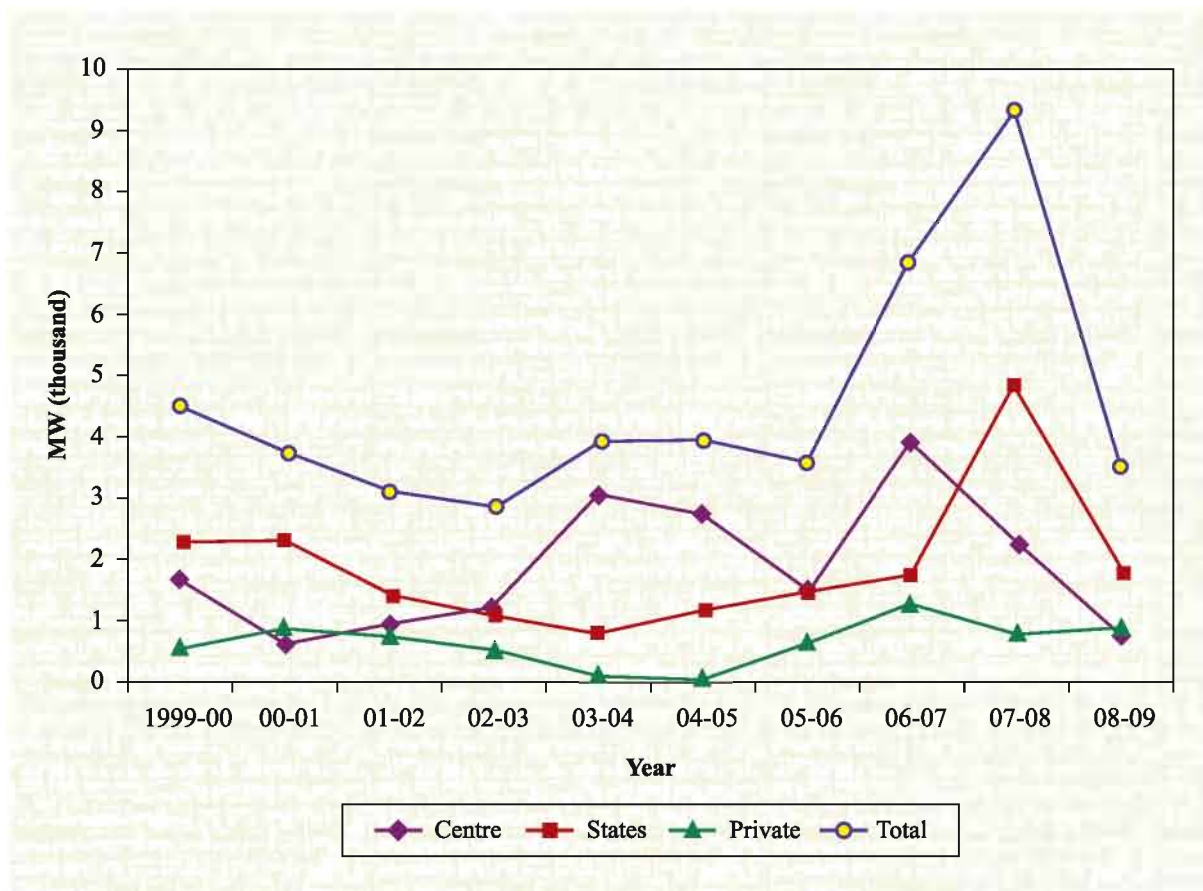
7.1 India is the fifth largest producer of electricity in the world. Public sector undertakings (PSUs) of the State governments and the Central government account for 51.5 per cent and 33.1 per cent of the generation capacity respectively with 15.4 per cent contributed by the private sector.

Transmission functions are performed almost entirely by PSUs and distribution remains in the control of state-owned monopolies, except in Orissa, Delhi, Mumbai, Ahmedabad, and Surat where private distribution companies operate. During the period between 1999-00 and 2008-09, the private sector contributed 6,571 MW or 14.5 per cent of the total capacity addition of 45,295 MW.

Policy initiatives to encourage private participation

7.2 To attract large-scale private investment, the Central Government has taken a number of steps, including permitting the private sector to set up coal, gas or liquid-based thermal, hydel, wind or solar projects with foreign equity participation up to 100 per cent under the automatic route. The bulwarks of the new policy framework are the Electricity Act 2003, National Electricity Policy 2006, Tariff Policy 2006, Rural Electrification Policy 2005, New Hydro Policy 2008, and the Mega Power Projects 2008. The Central Government has notified the National Load

Figure 11: Capacity Addition in Power Sector





Despatch Centre Rules, 2004. The Central Electricity Regulatory Commission (CERC) has also notified several important regulations, including the regulations on tariffs, open access in transmission and licensing of transmission service providers and traders, and the Indian Electricity Grid Code, 2006. The Appellate Tribunal for Electricity was set up in 2004 to hear appeals from Central and State Electricity Regulatory Commissions.

Standard documents and procedures

7.3 To encourage power projects through the PPP mode, standardised bidding processes and model documents, which include the Request for Qualification (RFQ), Request for Proposal (RFP) and RFP for Technical Consultants in Transmission Systems, have been developed. The Model Transmission Service Agreement is expected to be finalised soon.

Generation

7.4 During the Tenth Plan, the total

investment in power sector was Rs. 2,91,850 crore. The projected investment during the Eleventh Plan period is Rs. 6,66,525 crore out of which Rs. 1,85,512 crore or 27 per cent is expected to be contributed by the private sector. In physical terms, a target of 78,700 MW has been fixed for the Eleventh Plan, which is nearly four times the realised capacity addition of 16,000 to 21,000 MW across the previous three Plan periods. In the first two years of the current Plan, additional capacity of 17,148 MW has already been realised with an additional 4,873 MW of captive capacity. The status of generation projects of the Eleventh Plan as on August 31, 2009 is given in Table 3.

7.5 Since 2003, 30 private power projects with a total capacity addition of 22,038 MW have achieved financial closure. In 2008-09, the private sector has contributed 883 MW of the total capacity addition of 3,454 MW. In terms of their efficiency improvements, private thermal power plants could realise improvements in their plant load factor from 68.9 per cent in 1999-00 to 95.1 per cent in

Table 3: Status of Projects (MW)

Status	Centre	States	Private	Total
Commissioned	4,740	8,028	4,372	17,140
Under construction	16,482	13,327	15,425	45,234

2008-09, which compares favourably against the plant load factors of 71.2 per cent and 84.3 per cent of States' and Central power plants respectively.

7.6 India's total installed capacity of nuclear power is 4,120 MW or 2.8 per cent of the total installed capacity. The option of PPPs in nuclear power generation is being explored to support the target of generating 20,000 MW of nuclear power by 2020. Some domestic companies have also expressed their interest in setting up nuclear power plants.

Ultra Mega Power Plants (UMPPs)

7.7 Launched in 2005, nine UMPPs each with an initial capacity of 4,000 MW are expected to attract Rs. 160-200 billion of

private investment. The details of the four UMPPs that have been awarded are given in Table 4 below. Bidding in respect of Sundergarh (Orissa), Cheyyur (Tamil Nadu), Girye (Maharashtra), Tadri (Karnataka) and Akaltara (Chhattisgarh) is expected to be conducted shortly.

Captive and Merchant Power Plants

7.8 There has been a steep increase in the number of captive plants with installed capacity of 1 MW or more. It is estimated that 45,000 MW or 25 per cent of the total installed capacity is generated by this sector. Captive generators are also being encouraged to supply their surplus power to the grid. By August 2009, 19,500 MW of captive generating capacity was connected to the grid.



Table 4: Status of UMPP Programme

UMPP	Bid Tariff (Rs./kwh)	Expected Commissioning
Mundra, Gujarat	2.26	2012
Sasan, Madhya Pradesh	1.20	First 2 units in April 2012
Krishnapatnam, Andhra Pradesh	2.33	September 2013 to October 2015
Tilaiya, Jharkhand	1.77	2015

The Central Government has earmarked coal blocks, with reserves of 3.2 billion tons of coal, for allotment to merchant and captive plants. About 10,000 MW is expected to be developed through merchant power plants in the Eleventh Plan period.

Transmission

7.9 The total length of the transmission lines of 220 kV and above was 2,30,494 ckms as on December 31, 2009. The inter-regional power transfer capacity of 20,800 MW as on July 2009 is expected to be further enhanced to 32,650 MW by 2012 through the creation

of 'Transmission Super Highways'. The guidelines for private sector participation in transmission sector, issued in January 2000, envisage two routes for private sector participation: Joint Venture (JV) route, wherein the CTU/STU shall own at least 26 per cent equity and the balance shall be contributed by the JV partner; and Independent Private Transmission Company (IPTC) route, wherein 100 per cent equity shall be owned by the private entity.

Inter-State Transmission Systems

7.10 The first public-private joint venture,





namely, the Tala Transmission System with route length of around 1,200 km was developed in 2006-07 through a joint venture between Powergrid and a private entity at a cost of Rs. 1,100 crore. Powergrid is also facilitating the Western Region Transmission Lines Strengthening Scheme-II at an estimated cost of Rs. 1,600 crore through 100 per cent private sector participation under IPTC route.

Intra-State Transmission Systems

7.11 Private participation through PPP mode in intra-State transmission systems has also been initiated with the RFP having been issued for the evacuation of electricity from the 2×660 MW thermal power plant at Jhajjar in Haryana. Some other states are also exploring the possibilities of attracting private investment in transmission.



8. Urban Infrastructure

Overview

8.1 The urban sector which was contributing only 29 per cent to India's GDP in 1950-51 is presently contributing 62-63 per cent and is likely to contribute 75 per cent to the GDP by 2021. Due to the burgeoning urban population, the big cities viz., metropolitan (million plus) and mega cities are under severe infrastructure strain. Overall, the urban dwellers in the country have low access to infrastructure services such as water supply, sanitation, power supply and solid waste disposal. The strategy for urban development includes dismantling of public sector monopoly over urban infrastructure and creating an environment conducive for the private sector to invest. Consistent with this strategy, the Government has initiated the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), with a provision of Rs. 50,000 crore over a seven year period beginning 2005-06. One of the objectives of the Mission is to leverage and incorporate

private sector efficiencies in the development, management, implementation and financing of projects through PPP arrangements, wherever appropriate.

Private Participation in Urban Infrastructure

Water Supply & Sewerage

8.2 A number of water supply and sewerage projects involving an estimated cost of Rs. 1,684 crore are being implemented through the PPP mode in Maharashtra, West Bengal and Tamil Nadu. These projects are listed in Table 5.

8.3 The project at Salt Lake, Kolkata is being implemented on BOT basis for construction of 1 million gallon capacity reservoir, associated pipe lines, laying of about 10,000 meter of sanitary sewer lines and management of the project. The project at

Table 5: PPP Projects in Water Supply & Sewerage

Sl. No	Name of Project	State	Project Cost (Rs. crore)	Nature of Contract
1.	Water Supply & Sewerage Project, Salt Lake, Kolkata	West Bengal	63	BOT
2.	Water Supply Project, Chandrapur	Maharashtra	160	Management contract
3.	Seawater Desalination Project, Chennai	Tamil Nadu	510	DBOOT
4.	Water Management Contract Project, Latur	Maharashtra	201	Management contract
5.	Water Supply Project, Nagpur	Maharashtra	650	Performance-based contract
6.	Water Treatment & Supply Project, Haldia	West Bengal	100	BOT
		Total	1,684	

Haldia includes construction of 25 MGD water treatment plant on BOT basis and O&M of the water supply system. While projects in Maharashtra at Chandrapur and Latur are in the nature of management contracts, the water supply project at Nagpur involves upgrading of capacity besides operation and management. The Seawater Desalination Project, Chennai involves setting up of 100 MLD plant on Design, Build, Own, Operate and Transfer basis for a concession period of 25 years.

Solid Waste Management

8.4 Several municipal bodies have successfully attracted private sector participation in solid waste management (SWM). Some of these projects are listed in Table 6 below.

8.5 The SWM project at Alandur disposes 256 MT/day of garbage which is projected to reach 327 MT/day by 2013. The SWM facility at Haldia presently disposes solid waste, biomedical waste and municipal waste on bulk scale and door to door collection of waste within municipal area is expected to start soon. The SWM projects in Tamil Nadu and Haryana, indicated in the above table, have been approved under the JNNURM and will be completed by 2010. In addition, the Centralized Biomedical Waste Treatment Facility at Surat has been given to a private

entity on management contract. It covers 638 hospitals, 165 pathology labs, 900 clinics and 219 other units and is operating on BOOT basis.

Urban Transport

8.6 Private sector can provide better transport systems in urban areas, construct and maintain modern bus terminals, commercial complexes, over bridges, city roads etc., which are vital urban infrastructure. Some municipal bodies as listed below have successfully implemented such projects:

(i) ***Surat Municipal Corporation:*** Surat Municipal Corporation (SMC) has started operation of city bus services through private agencies in Surat city with a fleet of 200 buses since 2007.

(ii) ***Indore Urban Infrastructure Projects:*** Indore Municipal Corporation has taken many initiatives in augmenting its urban infrastructure through PPP where projects like construction of dividers, installation of railing and greenery, construction of bus stops at Indore, construction of over-bridges and traffic direction boards and construction of multi-storey parking are planned to come up. An efficient city bus service with 6 private partners and city administration is already functioning in Indore city since January 2006.

Table 6: PPP Projects in Solid Waste Management

Sl. No	Name of Project	State	Project Cost (Rs. crore)
1	Integrated Solid Waste Management Project, Alandur	Tamil Nadu	44
2	Waste Management Facility, Haldia	West Bengal	54
3	Solid Waste Management Scheme, Chennai	Tamil Nadu	246
4	Solid Waste Management Scheme, Coimbatore	Tamil Nadu	97
5	Solid Waste Management Scheme, Madurai	Tamil Nadu	74
6	Solid Waste Management Scheme, Faridabad	Harayana	77
	Total		592



Currently, 110 modern, low floor buses are running on 26 different routes with an investment of more than Rs. 40 crore. The operations are managed through a GPS-based on-line bus tracking system.

Metro Rail Projects

8.7 The following PPP initiatives have been taken for provision of metro rail systems in different cities.

(i) ***Delhi Metro:*** The Delhi Metro project is being implemented through Delhi Metro Rail Corporation (DMRC) which is a joint venture between the Central Government and the Government of Delhi. The first Phase of the project covering 65 kms (3 lines) has been commissioned at a cost of Rs. 10,571 crore. Further, construction works have been taken up for the second Phase with extensions to Noida, Gurgaon, Ghaziabad and Faridabad at an estimated cost of over Rs. 15,400 crore. In addition to the above, the construction of an airport express link to IGI has been taken up by DMRC at an estimated cost of Rs. 3,076 crore which covers the cost of structures. The work on installation of systems, including the

supply of rolling stock and operation of the Airport Express Line have been awarded on PPP basis to a private entity which would invest about Rs. 2,500 crore.

(ii) ***Hyderabad Metro:*** The bidding process for the 71 km fully elevated Hyderabad Metro Project (3 lines) costing about Rs. 12,132 crore is under way.

(iii) ***Mumbai Metro:*** The 11 km Line-I of the Mumbai Metro project costing of Rs. 2,356 crore has been awarded to a private entity on PPP basis. An upfront grant of Rs.650 crore is to be paid by the Government for this project. In addition, Line-II costing about Rs. 7,660 crore has been awarded.

(iv) ***Bangalore High Speed Project:*** Government of Karnataka (GoK) has decided to undertake development of a High Speed Rail link (HSRL) connection between Bangalore City Centre and Bangalore International Airport (33.65 Km) through Public Private Partnership on Design, Build, Finance, Operate and Transfer basis. The estimated cost of the project is Rs 5,767 crore. GoK has initiated the process for pre-qualification of bidders.



9. Social Sectors

9.1 The Eleventh Plan lays special emphasis on the development of social sectors in view of their impact on human development and quality of life. Healthcare and education are among the thrust areas of the Eleventh Plan. The physical targets set in the Plan cannot be met out of public resources alone. It is, therefore, imperative that resources have to be attracted from the private sector to ensure that the targets, in physical and financial terms, are met by the end of the Eleventh Plan period.

9.2 The limitations associated with the public sector mode of delivery suggest that private partnership through PPPs should be explored in different forms. Adopting the PPP route would also smoothen out the lumpiness of the finances required for creating a large infrastructure in a short period and enable the creation of a large number of institutions within the limited availability of funds. Besides attracting private investment, the



advantage of adopting the PPP model lies in harnessing private sector efficiencies.

9.3 The Department of School Education &





Literacy is in the process of setting up 2,500 model schools in the PPP mode. The Ministry of Labour has decided to set up 1,500 ITIs through PPPs. Similar initiatives are being considered in other sectors also.

9.4 Several State Governments are experimenting with delivery of health services through different models. For instance, the states of Goa, Rajasthan, West Bengal, Tripura, Tamil Nadu, Orissa, Uttar Pradesh, Madhya Pradesh, Haryana and Arunachal Pradesh have taken up some projects in the PPP mode to improve their health services. A few states such as West Bengal, Nagaland, Tamil Nadu, Punjab, Rajasthan and Andhra Pradesh have also adopted the PPP mode in the education sector.

9.5 In the social sectors, it may not be possible to adopt the user-charge based concessions although they may not be completely ruled out. However, annuity-based concessions could attract considerable amount of investment. The main advantages of adopting the PPP approach in the social

sectors would be enlargement of investment, reduction in costs, savings in time, improvement in efficiencies and better quality of performance.



Annexes

PPPAC Approved Projects

(Refer para 1.11)

(upto December 2009)

SI. No	Name of Project	Project Cost (in Rs. crore)
Highways		
BOT (Toll)		
Andhra Pradesh		
1	Four-laning of Chilakalurpet - Vijayawada stretch including Guntur Bypass and Mangalagiri Bypass	572
2	Four-laning of Hyderabad - Vijayawada Package II	492
3	Four-laning of Hyderabad - Vijayawada Package I	968
4	Four-laning of Machilipatnam - Vijayawada section	468
5	Four-laning of Tirupati - Tirutnani - Chennai section	802
6	Four-laning of Cuddapah - Kurnool section	1,567
7	Four-laning of Armur Adloor - Yellareddy section	491
8	Six-laning of Chilakaurpet - Nellore section	2,164
9	Six-laning of Vijayawada - Eluru - Rajahmundry section	2,088
10	Four-laning of Hyderabad - Yadgiri section	515
Assam		
11	Four-laning Baitha - Chairtali - Tezpur section	1,204
Bihar		
12	Patna - Buxar section	1,620
13	Bakhtiyarpur - Khagaria section	1,704
14	Four-laning of Gopalganj - Chapra - Hazipur (Package 1)	923
15	Four-laning of Gopalganj - Chapra - Hazipur (Package 2)	923
16	Four-laning of Khagaria - Purnea section	1,254
17	Four-laning of Muzaffarpur - Sonbarsa section	933
Delhi/Haryana		
18	Six/Four-laning of Delhi - Haryana Border to Rohtak section	486
Goa		
19	Four-laning of Goa/Karnataka Border - Panaji section	382

Sl. No	Name of Project	Project Cost (in Rs. crore)
20	Four-laning of Maharashtra/Goa Border-Panaji-Goa/Karnataka Border	1,872
Gujarat		
21	Six-laning of Surat-Dahisar section	1,406
22	Four/Six-laning of Gujarat/Maharashtra Border-Surat-Hazira Port section	1,509
23	Four-laning of Godhra to Gujarat/MP Border	717
24	Four-laning of Ahmedabad to Godhra section	1,009
25	Four/Six-laning of Gandhidham (Kandla) to Mundra Port	954
26	Six-laning of Samakhiali-Gandhidham section	805
Haryana		
27	Six-lane Elevated Highway and its approaches on Delhi-Agra section at Badarpur	1,918
28	Panipat-Jalandhar Section	2,209
29	Six-laning of Gurgaon-Kotputli-Jaipur section	1,674
30	Development of Eastern Peripheral Expressway (NE-II) around Delhi (Haryana & UP)	2,334
31	Six-laning of Delhi-Agra section	1,918
32	Four-laning of Rohtak to Hissar section	695
33	Four-laning of Rohtak to Bawal section	650
34	Four-laning of Rohtak to Panipat section	812
35	Four-laning of UP/Haryana border-Yamunanagar-Saha-Burwala-Panchkula section	667
Himachal Pradesh		
36	Four-laning of Parwanoo-Solan section	536
Jharkhand		
37	Four-laning of Ranchi-Rargaon-Jamshedpur section	1,436
Karnataka		
38	Access Controlled Highway on Bangalore - Nelamangala section	445
39	Four/Six-laning of Bangalore-Hoskote - Mulbagal section	565
40	Four-laning of Nelamangala Junction to Devihalli section	441

SI. No	Name of Project	Project Cost (in Rs. crore)
41	Four-laning of Devihalli- Hasan Section	440
42	Four-laning of Kundapur -Surathkal section and Mangalore-Karnataka/ Kerala Border section	616
43	Six-laning of Belgaum-Dharwad Section	638
44	Widening and Strengthening of Existing 2 Lane Carriageway from Hospet to Bellary-SFC Project	174
45	Four-laning of Bijapur-Hungund section	748
46	Four/Six-laning of Hungund - Hospet section	946
47	Six-laning of Hyderabad-Bangalore section	680
48	Six-laning Tumkur to Chitradurga section	839
Kerala		
49	Four-laning of Walayar to Vadakkancherry section	597
50	Six-laning of Vadakkancherry to Thrissur section	514
51	Four-laning of Kuttipuram - Edapally section	1,158
52	Four-laning of Kannur - Vengalum (Kozhikode) section (Package 1)	1,144
53	Four-laning of Vengalum - Kuttipuram section (Package 2)	1,108
54	Four-laning of Cherthala-Ochira section (Package-1)	1,286
55	Four-laning of Cherthala - Thiruvanthapuram section (Package 2)	1,241
56	Four-laning of Trivendrum - Kerala/TN Border, including Trivendrum By-pass (Package 1)	822
Madhya Pradesh		
57	Four-laning of Khalghat to MP/ Maharashtra Border	549
58	Six-laning of Indore-Dewas section	409
59	Four-laning of Indore-Jhabua-Gujarat/MP Border section	1,175
Maharashtra		
60	Four-laning of MP/Maharashtra Border-Dhule section	744
61	Six-laning of Pimpalgaon-Nashik-Gonde section	752
62	Four-laning of Pune-Sholapur section	922
63	Four-laning of MP/Maharashtra border - Nagpur section	1,134

Sl. No	Name of Project	Project Cost (in Rs. crore)
64	Four-laning of Pune - Sholapur section	810
65	Four-laning of Talegaon - Amravati section	619
66	Six-laning of Pune - Satara Section	1,725
Orissa		
67	Four-laning of Panikoili - Rimuli section	369
68	Four-laning of Panikoili - Rimuli section	717
69	Four-laning of Rimuli - Roxy - Rajmunda section	654
70	Four-laning of Talcher - Dubari - Chandikhole section	784
71	Four-laning of Bhubaneshwar - Puri section	459
72	Six-laning of Chandikhole - Jagatpur - Bhuvaneshwar section	951
Punjab		
73	Four-laning of Amritsar - Pathankot section	704
74	Six/Four-laning Zirakpur - Parwanoo section	295
75	Four-laning of Jalandhar - Amritsar section SFC	292
Rajasthan		
76	Four-laning of Jaipur - Reengus section	343
77	Six-laning of Kishangarh - Beawar section	722
78	Six-laning of Kishangarh - Udaipur section	3,076
79	Four/Six-laning of Jaipur - Tonk - Deoli section	1,184
80	Strengthening of 2 - Lane Carriageway from Beawar to Gomti section-SFC Project	201
81	Six-laning of Udaipur - Ahmedabad section	1,750
Tamil Nadu		
82	Four-laning of Salem to Ulundurpet section	941
83	Four-laning of Pondicherry to Tindivanam section	285
84	Four-laning of Trichy City to Dindigul section	576
85	Four-laning of Trichy city to Karur Road section	516
86	Six-laning Chennai - Tada section	353

SI. No	Name of Project	Project Cost (in Rs. crore)
87	Four-laning of Karaikkudi - Ramanathapuram road section	599
88	Four-laning of Trichy - Karaikudi section	804
89	Four-laning elevated road form Chennai Port gate No.10 to Maduravoyal	1,345
90	Four-laning of Coimbatore - Mettupalayam section	500
91	Six-laning of Krishnagiri - Walajhapet section	1,490
92	Four-laning of Nagapatnam - Thanjavur section	619
93	Four-laning of Kerala/Tamilnadu Boarder - Kanyakumari Section (Package II)	841
94	Four/ Two-laning of Dindugal Theni Section & Mumlli - Theni section	813
95	Four-laning of Tindivanam - Krishnagiri section	1,074
96	Construction of New Four-lane road from Ennore Port to Thachur section	355
97	Six-laning from Chengapalli to Coimbatore By-pass and Four-laning from end of Coimbatore bypass to TN/Kerala Border	853
Uttara Pradesh		
98	Four-laning of Ghaziabad - Aligarh section	1,325
99	Six-laning of Varanasi - Aurangabad section	2,588
100	Four-laning of Moradabad - Bareilly section	1,485
101	Four-laning of Bareilly - Sitapur section	1,046
Uttarakhand		
102	Four-laning of Muzaffarnagar - Haridwar section	754
West Bengal		
103	Four-laning of Barasat - Krishnagar section	859
104	Four-laning of Krishnagar - Berhampore section	672
105	Four-laning of Berhampore - Farakka section	999
106	Four/Six-lanaing of Farakka - Raiganj section	1,079
107	Four-laning of Raiganj - Dhalkhola section	580
	Sub Total	1,01,770

Sl. No	Name of Project	Project Cost (in Rs. crore)
BOT (Annuity)		
108	Four-laning of Amritsar to Wagha Border section in the state of Punjab	206
109	Four-laning of Jorabat - Barapani section in the State of Meghalaya	536
110	Four-laning of Jorahat - Demow section in the state of Assam	562
111	Four-laning of Patna-Hazipur - Muzaffarpur section in the state of Bihar	570
112	Four-laning of Hazaribagh-Ranchi section in the state of Jharkhand	595
113	Four-laning of Haridwar-Dehradun section in the state of Uttarakhand	490
114	Four-laning of Udhampur to Ramban section in the State of Jammu and Kashmir	971
115	Four-laning of Qazigund to Banihal section in the State of Jammu and Kashmir	1,987
116	Four-laning of Ramban to Banihal section in the State of Jammu and Kashmir	986
117	Four-laning of Chenani to Nashri section in the State of Jammu and Kashmir	2,108
118	Four-laning of Jammu - Udhampur section in the State of Jammu and Kashmir	1,993
119	Four-laning of Srinagar to Banihal section in the State of Jammu and Kashmir	1,166
	Sub Total	12,170
OMT Projects		
120	Palanpur - Radhanpur - Samakhiali section in the State of Gujarat	184
121	Chittorgarh - Kota Section in the State of Rajasthan	89
122	Kota to Baran section in the State of Rajasthan	55
123	Baran - Shivpuri and Shivpuri - Jhansi section in Rajasthan, Madhya Pradesh and Uttar Pradesh	19
124	Porbandar - Bhiladi - Jetpur Section in the State of Gujarat	77
125	Swarupganj - Pindwara - Udaipur section in the State of Rajasthan	97
126	Madurai - Tirunelveli - Panangudi in Tamil Nadu	112
127	Purnea - Dhalkola - Islampur - Gayakota section in the States of West Bengal & Bihar	93
128	Rajkot - Bamanbore and Bamanbore - Surajbari section in the State of Gujarat	94
	Sub Total	820

Sl. No	Name of Project	Project Cost (in Rs. crore)
Ports		
129	Development of a Coal Terminal at Port of Mormugao, Goa on (DBFOT) Basis	334
130	Development of Eighth Berth as Container Terminal on (BOT) basis at Tuticorin	312
131	Construction of Container Terminal at Ennore Port in Tamil Nadu on (BOT) Basis	1,407
132	Construction of Deep Drought Coal Berth at Paradip on BOT Basis - Final Approval of PPPAC	479
133	Development of 13th to 16th Multipurpose Cargo (other than liquid / container cargo) at Kandla Port	702
134	Construction of Iron Ore Berth at Paradip	591
135	Mechanized Iron ore Handling Facility at New Mangalore Port	310
136	Construction of EQ 10 berth of Vishakpatnam Port Trust on BOT basis, in Andhra Pradesh SFC	50
137	Construction of WQ6 berth of Vishakpatnam Port Trust on BOT basis, in Andhra Pradesh SFC	115
138	Mechanized Coal Handling facilities and Upgradation of General Cargo Berth at Outer Harbor of Vishakpatnam Port to cater to 200000 DWT vessels on DBFOT Basis	438
139	Development of 4th Container Terminal at Jawaharlal Nehru Port (JNPT)	6,697
140	Development of Standalone Container Handling Facilities with a Quay length of 300 M Towards North at JNPT	600
141	Development of Container Terminal at New Mangalore Port on BOT Basis	276
142	Development of Multipurpose Berth to handle clean cargo including containers on BOT Basis at paradip port	387
143	Development of North Cargo Berth II for handling bulk cargo at Tuticorin port on DBFOT Basis	332
144	Development of Mega Container Terminal at Chennai Port	3,126
	Sub Total	16,156
	Grand Total	1,30,916

Proposed National Highway Projects

(Refer para 2.9)

(upto December 2009)

Sl. No	Name of Project	Length (in km)
BOT Projects		
1	Vijayawada-Machlipatnam	65
2	Nellore-Chilakaluripet	184
3	Motihari-Raxaul	67
4	Patna - Bakhtiarpur	53
5	Khagaria-Purena	141
6	Chapra-Hajipur	72
7	Gopalganj-Chapra	84
8	Patna-Buxar	125
9	Khagaria-Bakhtiarpur	120
10	Patna - Gaya - Dobhi	125
11	Forbesganj-Jogwani	13
12	Sonbarsa-Muzaffarpur A	89
13	Mokhama-Munger	70
14	Maharashtra/Goa border-Panaji Goa/KNT Border	123
15	Ahmedabad-Godhra	118
16	Kandla- - Mundra Port	72
17	Samakhiali-Gandhidham	56
18	Jetpur-Somnath	127
19	Ahmedabad-Vadodara	95
20	Rohtak - Bawal	83
21	Panchkula - Barwala - Saha - Yamuna Nagar up to UP border	108
22	Rohtak - Hissar	97
23	Rohtak-Jind	45
24	Ambala - Kaithal	78
25	Delhi - Agra	180
26	Shimla-Solan	60

SI. No	Name of Project	Length (in km)
27	Parwanoo-Solan	40
28	Srinagar-Banihal (Pkg I)	68
29	Quazigund-Banihal (Pkg II)	15
30	Ramban-Banihal (Pkg III)	36
31	Udhampur-Ramban (Pkg IV)	43
32	Chenani-Nashri (Pkg V)	12
33	Jammu-Udhampur (Pkg VI)	65
34	Ranchi-Jamshedpur	164
35	Barhi-Hazaribagh	40
36	Barwa Adda Panagarh	120
37	Bijapur-Hungud	97
38	Hungud-Hospet	98
39	Tumkur-Chitradurga	114
40	Devihalli- Hassan	76
41	Karnataka/AP Border-Mulbagal	22
42	Belgaum - Dharwad	80
43	Belgaum-Goa/KNT Border	82
44	Km 534.720 to km 556.840 of Hyderabad-Bangalore Section of NH-7	22
45	Walayar-Vadankancherry	58
46	Thiruvanthapuram-Ochira	86
47	KNT/Kerala border-Kannur	130
48	Kuttipuram-Edapally	112
49	Trivendrum -Kerala /TN Border	43
50	Bhopal-Bareilly	112
51	Baraily-Rajmarg crossing	98
52	Rajmarg crossing- Jabalpur	102
53	Jhansi-Khajuraho	177
54	Bhopal-Sanchi	57
55	Indore - Dewas	45

Sl. No	Name of Project	Length (in km)
56	Panvel-Indapur	84
57	Pune-Satara	145
58	Solapur - Maharashtra / Karnataka Border	30
59	Nagpur- Wainganga Bridge	60
60	Satara-Kagal	133
61	Jorabat-Shillong	62
62	Shillong-Jowai	32
63	Shillong Bypass	50
64	Kohima-Maram	55
65	Maram-Imphal	85
66	Panikoli-Keonjhar-Rimuli section	163
67	Rimuli-Roxy Rajamunda section	106
68	Sambalpur-Baragarh-Chattisgarh/Orissa Border	88
69	Bhubaneswar-Puri	59
70	Chandikhole-Dubari-Talchar	133
71	Chandikhol-Jagatpur-Bhubaneswar	70
72	Dankuni-Baleshwar	240
73	Deoli - Kota	124
74	Beawar-Pali	116
75	Pali-Pindwara	130
76	Reengus - Sikar	42
77	Udaipur-Ahmedabad	242
78	Kishangarh-Udaipur	315
79	Coimbatore-Mettupalayam	55
80	Tirupati Tiruthani Chennai	125
81	Krishnagiri-Walajahpet	148
82	Hosur-Krishanagiri	65
83	Tindivanam-Krishnagiri	200
84	Kerala/ TN Border Kanayakumari	70

SI. No	Name of Project	Length (in km)
85	Nagapatnam-Thanjaveur	77
86	Trichy-Karaikudi	120
87	Hospet to Bellary.	74
88	Jalandhar-Amritsar	20
89	Karaikudi- Ramanathapuram	80
90	Dindigul-Perigulam-Theni & Theni-Kumili	130
91	Madurai-Ramnathpuram- Rameshwaram-Dhanuskodi	186
92	Walajpet-Poonamalee	92
93	Chengapalli-Walayar (excluding Coimbtore bypass)	55
94	Bareilly - Sitapur	153
95	Varansi - Aurangabad	190
96	Realignment to Ghoshukur-Salsalabari	164
97	Barasat -Krishnagar	84
98	Krishnagar-Bahrapore	78
99	Bahrapore -Farakka	101
100	Farakka-Raiganj	103
101	Raiganj-Dalkhola	50
	SubTotal	9,648
OMT Projects		
102	Chittorgarh-Kota	168
103	Kota -Baran	104
104	Baran-Shivpuri and Shivpuri-Jhansi	196
105	Porbandar-Bhiladi-Jetpur	117
106	Swarpganj-Pindwara-Udaipur	121
107	Madurai-Tirunelveli-Panangudi	211
108	Purnea-Dalkola-Islampur-Gayakota	141
109	Rajkot-Bamanbore and Bamanbore-Surajbari	130
	Sub-Total	1,188
	Grand Total	10,836

Approved State Projects

(Refer para 2.10)

(upto December 2009)

Sl. No	Name of Project	Project Cost (in Rs. crore)
Roads		
Andhra Pradesh		
1	Four-laning of Hyderabad - Karimnagar - Ramagundam Road	1,349
2	Four-laning of Puthalapattu - Naidupet Road	528
3	Four-laning of Narketpally - Addanki - Medarametla Road	1,194
4	Major Bridge across River Godavari	808
Bihar		
5	Widening of Two lane Road between Aurangabad - Bhita Four lane	262
6	Widening of Two lane Road between Ara - Mohania Four lane	917
7	Construction of Green Field Bridge Across River Ganga connecting Bakhtiyarpur	1,388
Gujarat		
8	Four-laning of Rajkot- Jamnagar - Vadinar Road	543
9	Four-laning of Halol - Godhra - Shyamalji Road	792
10	Four-laning of Ahmedabad - Viramgam - Maliya Road	993
11	Strengthening and Widening of Two Lane Bhuj - Bachau Road.	190
12	Improvement of Nakhatrana - Dayapar - Panandhro Road.	203
13	Four-laning of Sarkhej Vataman - Pipli - Bhavnagar Road	900
14	Construction of Bagodara - Dhandhuka - Vallabhipur - Bhavnagar Road	1,020
Karnataka		
15	Improvement of Dharwad - Ramnagar Stretch (198)	238
16	Two-laning of Whagdhari - Ribbanpally Stretch (197)	277
17	Improvement of Chikkanaya - Knahalli - Tiptur - Hassan (202)	226
Madhya Pradesh		
18	Four-laning of Lebad-Jaora State Highway	25
19	Four-laning of Jaora - Nayagaon	403
20	Final approval of the project Four-laning of Bhopal - Dewas State Highway	478
21	Strengthening of Matkuli - Tamia - Chindwara Road	98
22	Strengthening of Chandpur Alirajpur Kukshi Badwani Road	100
23	Strengthening of Mandsaur Sitamau Road (upto Rajasthan Border)	30
24	Four-laning of Bhopal Bypass	233
25	Four-laning of Indore-Ujjain	251
26	Development of Bhina - Khimalsa - Malthon Road	70
27	Two Lane Carriageway of Bhind - Mihona - Gopalpur Road	84
28	Two Lane Carriageway of Damoh - Jabalpur Road	213

Sl. No	Name of Project	Project Cost (in Rs. crore)
29	Two Lane Carriageway of Sagar - Damoh	117
30	Upgradation of Satna - Chitrakoot	122
31	Development of Ujjain - Unhel - Nagda - Jaora Road	189
32	Four-lane alignment connecting Lebad - Nayagaon Road	188
Maharashtra		
33	Four-laning of Jalna - Deoulgaonraja - Berala Phata Road including Deoulgaonraja By-pass	125
34	Four-laning of Manjuarsumba - Lokhandi - Sawagaon - Latur Road	203
35	Four-laning of Berla Phata - Chikhali - Khamgaon Road	92
36	Four-laning of Nasik - Vaijpur - Aurangabad Road	157
37	Four-laning of Osmanabad - Latur Road	479
38	Four-laning of Jam - Warora - Chandrapur - Ballarpur - Bamni Road	448
39	Four-laning of Aurangabad Paithan Highway	179
40	Four-laning of Baramathi - Phaltan - Shirwal Highway	357
41	Four-laning of Nanded - Narsi Road section	238
42	Four-laning of Shirur Tejband - Mukhed - Narsi road	190
43	Four-laning of Akola-Patur-Washim-Hanergaon-Hingoli-Waranga-Phata Road	687
44	Four-laning of Tembhurni - Kurduwadi - Barshi - Yedshi section	322
45	Four-laning of Jam - Warora - Chandrapur Road	224
46	Four-laning of Karanji - Wani - Ghuggus - Chandrapur Road	499
Rajasthan		
47	Widening of Jaipur - Bhilwara Road	247
48	Widening of Bhilwara - Bundi Road	120
49	Widening of Jaipur to Nagaur Road SH in Rajasthan	220
50	Widening of Sawai Madhopur to Bharatpur Road	244
51	Widening of Dabadeh to Bhawani Mandi Road	63
52	Widening of Narnaul to Kotputli - Chala - Sikar - Khud - Losal - Kuchaman State Highway Kuchaman Road	193
53	Widening of Jobner to Thanagaji Road	171
Urban Infrastructure		
54	Mumbai Metro Corridor II Phase I Project Charkop - Bandra - Mankhurd Corridor - in the state of Maharashtra	7,660
55	Hyderabad Mass Rapid Transit System Project, Andhra Pradesh	11,790
Grand Total		39,736

Port Projects to be awarded in 2009-12

(Refer para 4.10)

Sl. No	Name of Port	Name of Project	Project Cost (Rs. in cr.)
1	Chennai	Mega Container Terminal	3,686
2	Cochin	International Cruise Terminal-cum-Plaza	55
3	Cochin	Multipurpose Liquid Terminal	184
4	Ennore	Container Terminal	1,407
5	JNPT	Container Terminal	600
6	JNPT	Container Terminal	6,700
7	Kandla	Berthing & allied facilities of Tekkra	1,137
8	Kandla	Single Point Mooring & allied facilities	830
9	Kolkata	Riverine Jetty (2 nos.)	146
10	Mormugao	Berth at Vasco Bay (2 nos.)	120
11	Mormugao	Bulk handling Terminal	250
12	Mumbai	Cargo Terminal (Dry Bulk, Conventional -2 nos.)	75
13	New Mangalore	Container Terminal	269
14	Paradip	Multipurpose Berth	387
15	Paradip	Mechanization of Central Quay III Berth	40
16	Tuticorin	Shallow Draught Berth	50
17	Tuticorin	Mechanization of Berth No. IX	20
18	Tuticorin	Container Terminal (Converting Berth No. VIII)	312
19	Tuticorin	North Cargo Berth No. II	319
20	Vizag	Mechanized handling facilities for fertilizers	224
21	Vizag	Mechanized handling facilities for coal	462
22	Vizag	East Dock Berth (2 nos.)	573
23	Vizag	Mechanized handling facilities (at 2 berths)	450
24	Vizag	Liquid Berth	55
25	Vizag	Dry Bulk Berth	114
	Total		18,465

* Feasibility study being conducted

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