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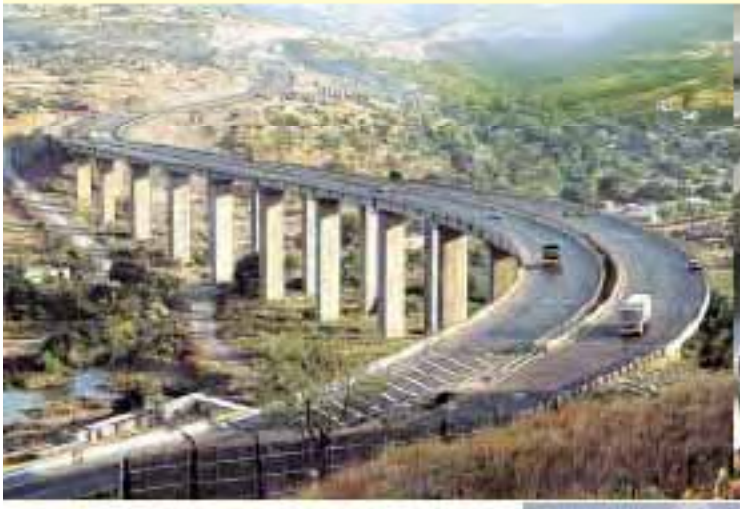
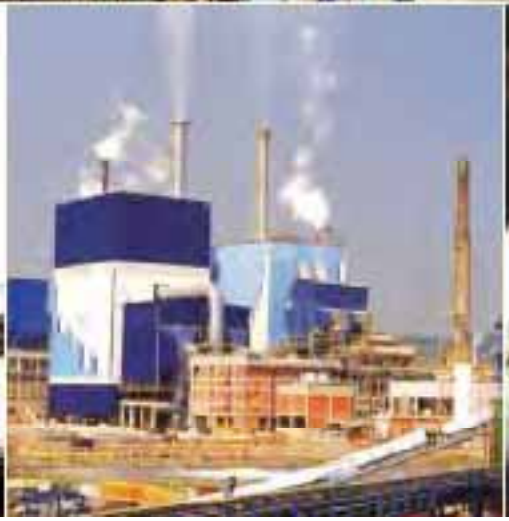
Private Participation in

Infrastructure





Private Participation in Infrastructure

Published by

The Secretariat for the Committee on Infrastructure

Planning Commission, Government of India
Yojana Bhawan, Parliament Street
New Delhi - 110001

www.infrastructure.gov.in

June 2009

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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 risen to about 6 per cent in 2007-08.

Achieving this level of investment presents many distinct challenges. In particular, the ability to finance infrastructure through the budget is limited, given the many other demands on budgetary resources. It is expected that only about 70 per cent of the infrastructure needs can be met from public resources. 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 is being 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.

June 8, 2009

(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 Committee has been responsible for steering the policy framework and for monitoring the progress of 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 6 per cent of GDP in 2007-08. 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**

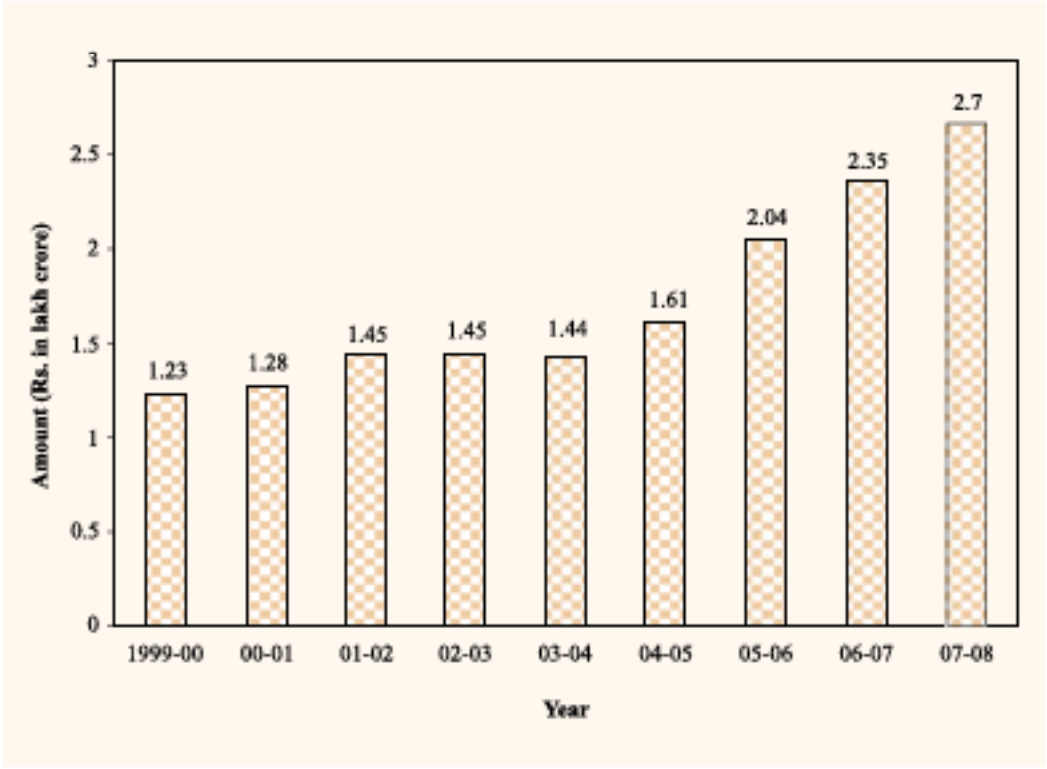
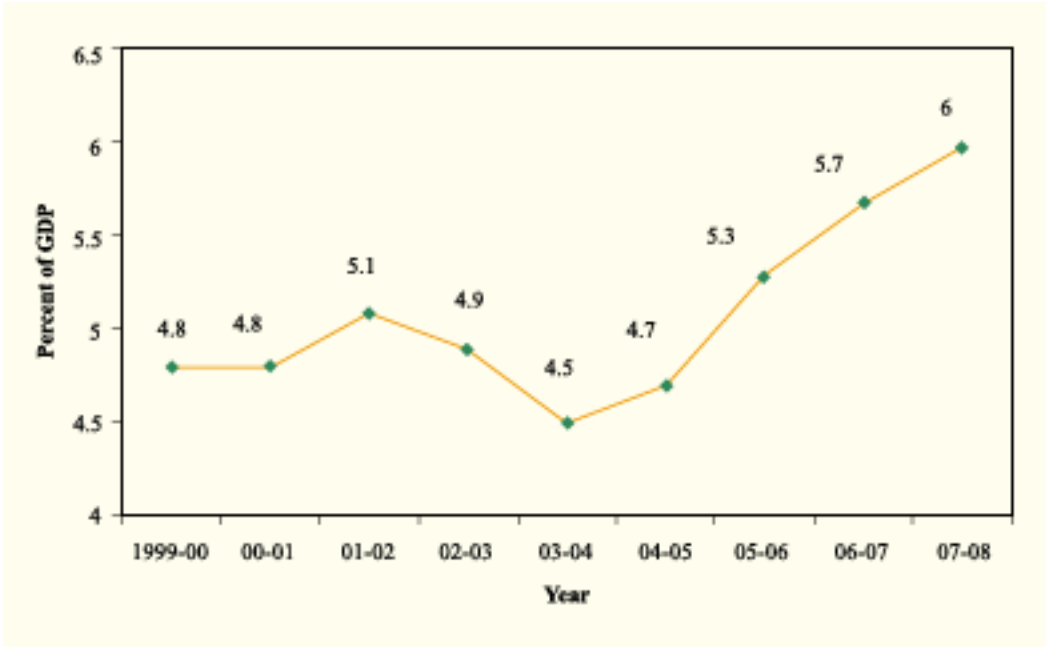


Figure 2: **Infrastructure Investment as per cent of GDP**



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.

Empowered Sub-Committee of CoI

1.10 An Empowered Sub-Committee of the Committee on Infrastructure (ESCOI) was constituted on May 16, 2005 under the chairmanship of the Deputy Chairman, Planning Commission and includes the concerned members of the Planning Commission and the Secretaries of relevant Ministries. The main objectives of constituting this empowered committee was to accelerate formulation, review and approval of policy papers and proposals for submission to CoI; monitoring and follow up on implementation of the decisions of CoI; and undertaking such other actions as may be necessary in furtherance of the objectives of CoI.

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 March 2009, the PPPAC had approved 94 projects involving an investment of Rs. 84,407 crore. A list of approved projects, which are in different stages of award and implementation, is at Annex-I.

Viability Gap Funding (VGF)

1.12 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. Upto March 2009, 139 projects had been approved with a capital investment of Rs. 1,18,830 crore and a VGF commitment of Rs. 38,993 crore.

Empowered Committee/Institution (EC/EI)

1.13 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 March 2009, it had approved 44 projects in the State Sector involving a total capital investment of Rs. 34,423 crore. A list

of approved projects, which are in different stages of implementation, is at Annex-II.

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 March 2009, IIFCL had raised Rs.15,700 crore and had approved 88

projects with a total investment of Rs. 1,47,092 crore, of which IIFCL lending will be Rs.18,720 crore. It had disbursed Rs. 4,891 crore upto March 2009. Of the 88 projects sanctioned by IIFCL, financial closure has taken place in 78 projects involving an investment of Rs. 1,15,689 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.*

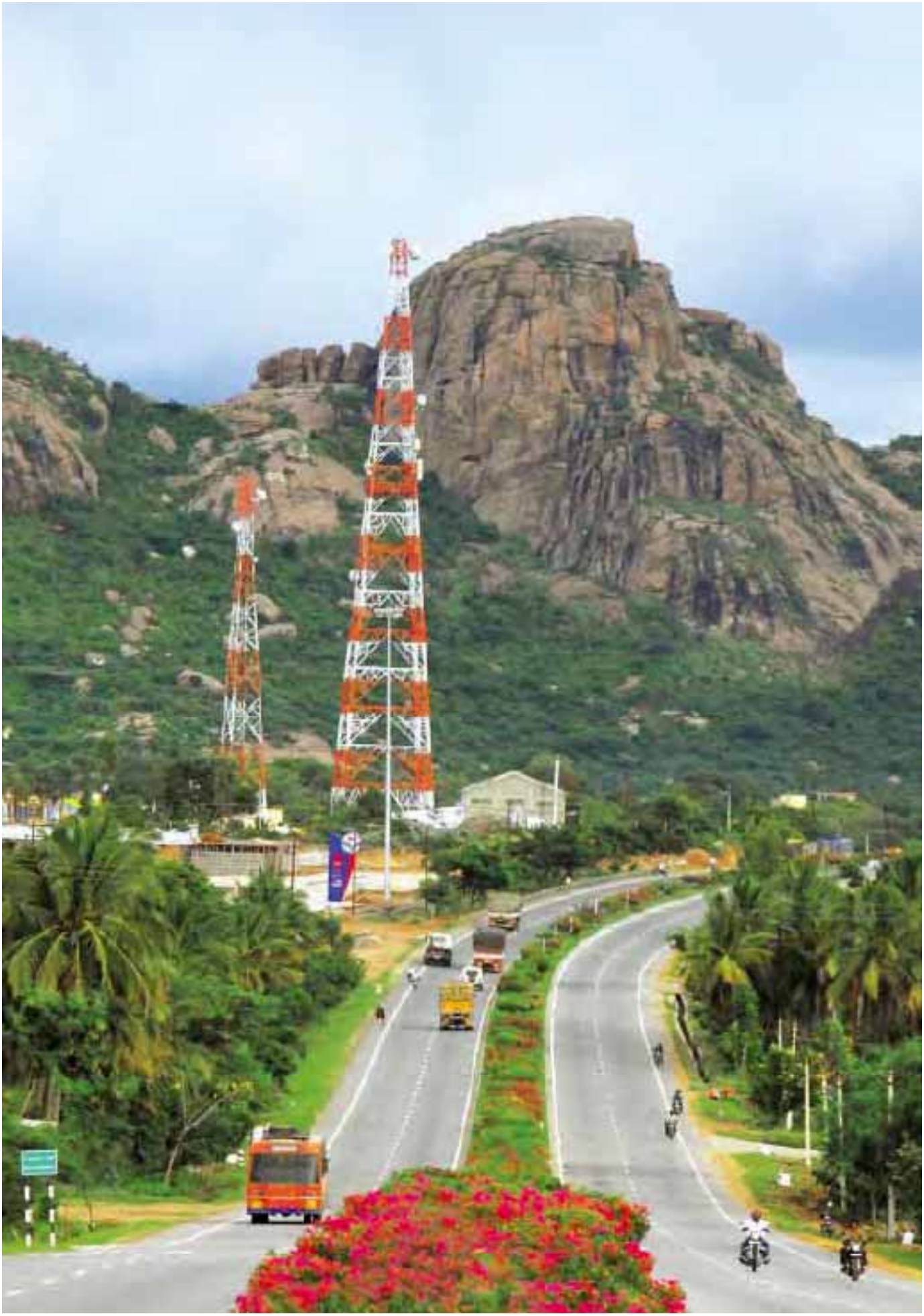
1.23 Based on inter-ministerial deliberations, a number of Reports have been prepared and their recommendations adopted. These are listed in Box 4.

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 March 2009, a total of 95 projects with an investment of Rs. 46,369 crore have been awarded for implementation through PPP concessions. In addition, 45 projects with an investment of Rs. 55,047 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**

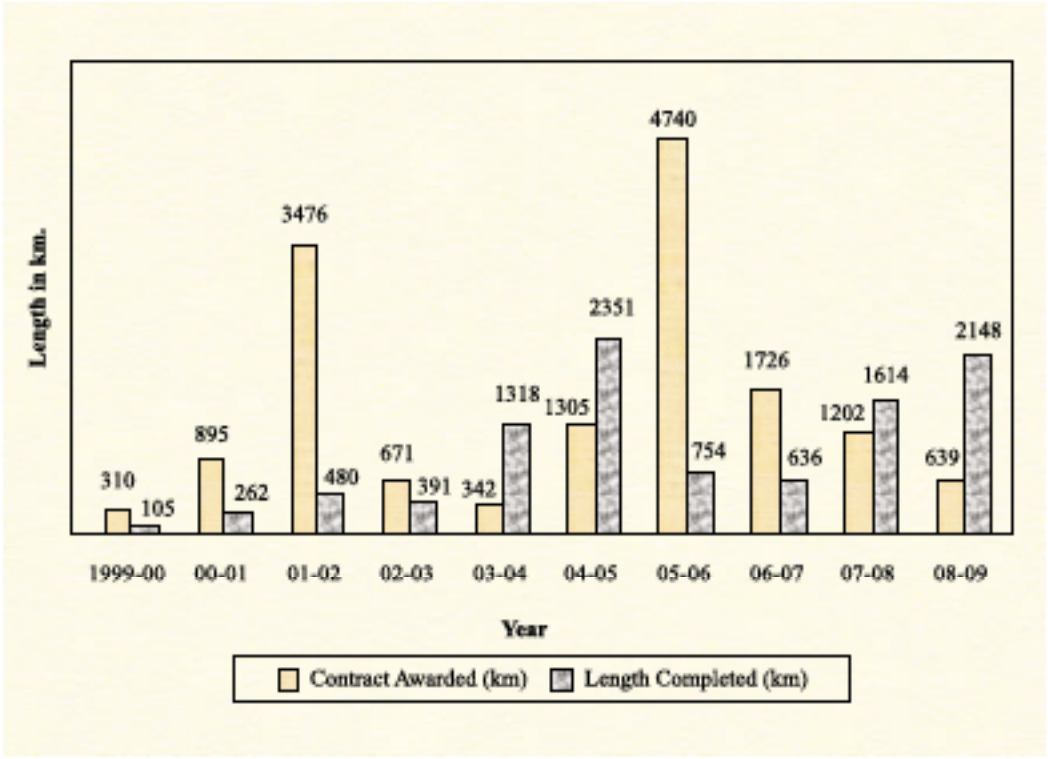
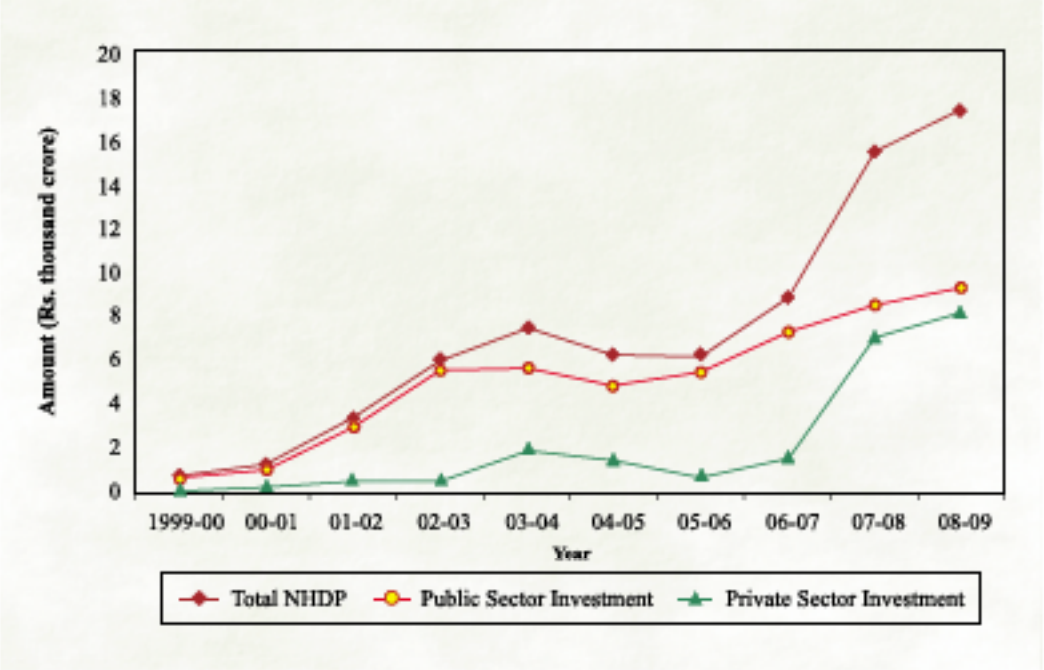
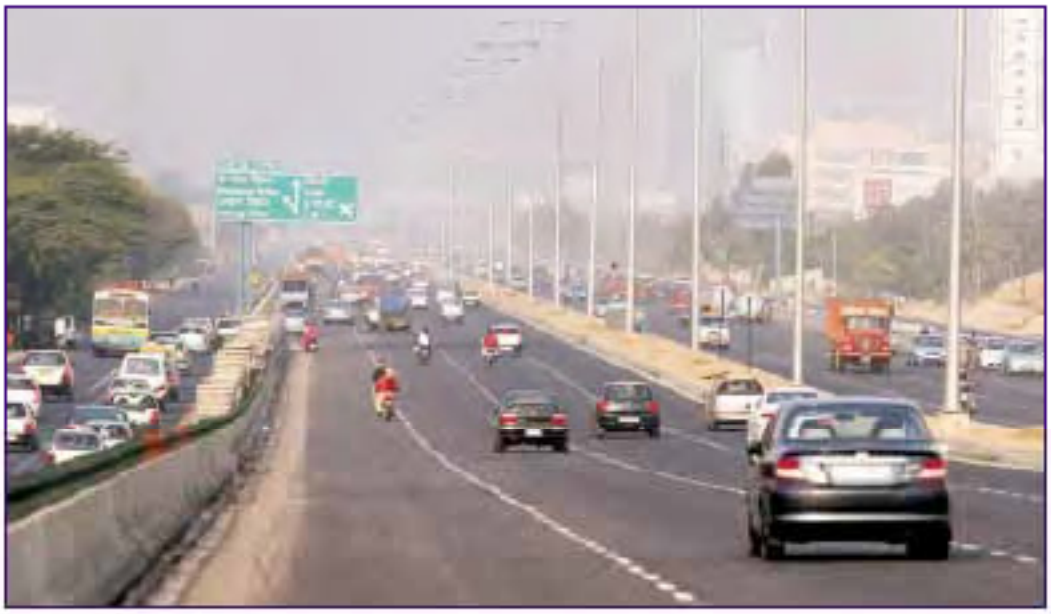


Figure 4: **NHDP: Expenditure Incurred**



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, 16 projects with an investment of Rs. 5,697 crore on BOT (Toll) basis and another 16 projects with an investment of Rs. 6,852 crore on BOT (Annuity) basis 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. 35 projects with an investment of Rs. 18,027 crore on BOT (Toll) basis are under implementation. In addition, PPPAC has approved 38 projects with an investment of Rs. 37,828 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. DoRTH has commissioned feasibility studies for 46 projects (about 6,000 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. 7,785 crore are under implementation. In addition, PPPAC has approved 9 projects with an investment of Rs. 17,219 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. 1,485 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

2.10 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 year 2009-10 is at Annex-II. This includes 125 projects covering a length of 14,228 km. This list also includes 53 projects approved by PPPAC covering a length of 5,518 km which is included in Annex-I.

State Highways

2.11 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.


Gantrail
VCT

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**

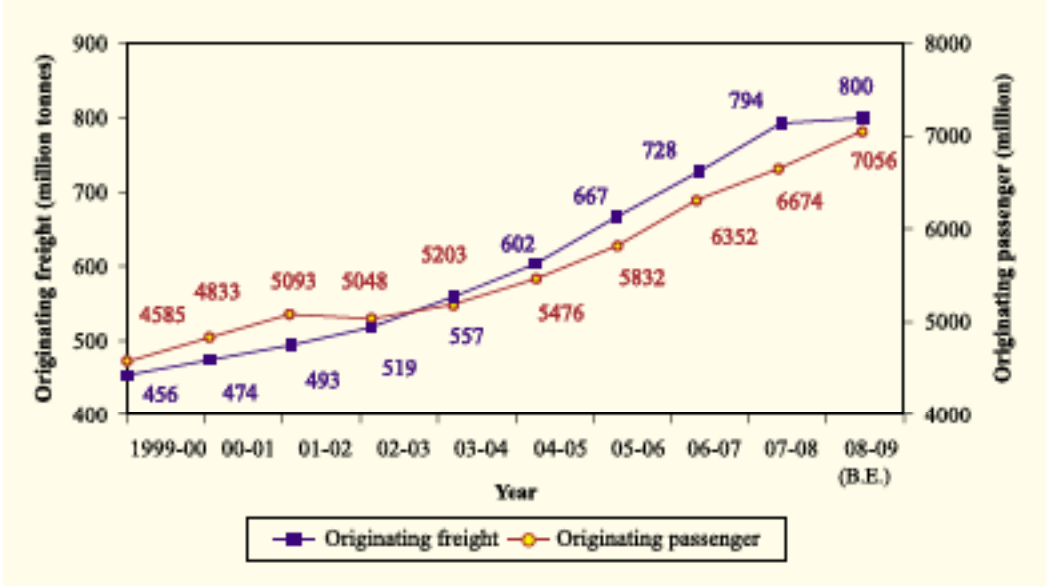
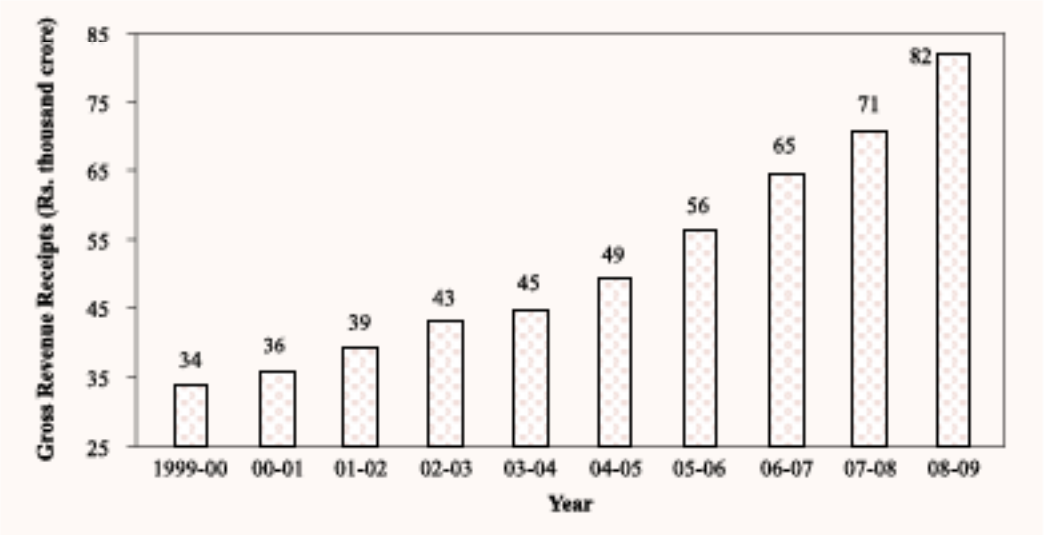


Figure 6: **Indian Railways: Growth in gross revenue receipts**



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 March 2009, 58 rakes (container trains) have been procured by operators other than CONCOR, which already has 152 rakes. Three new Inland Container Depots (ICDs) have also been commissioned by competing operators. Furthermore, the Railway Ministry expects an additional 80 rakes to be procured and nine ICDs to be commissioned by the close of 2009. 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 LudhianaSonnagar (Eastern) and the 1,483 km Tuglakabad/DadriJawaharlal 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 has 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.

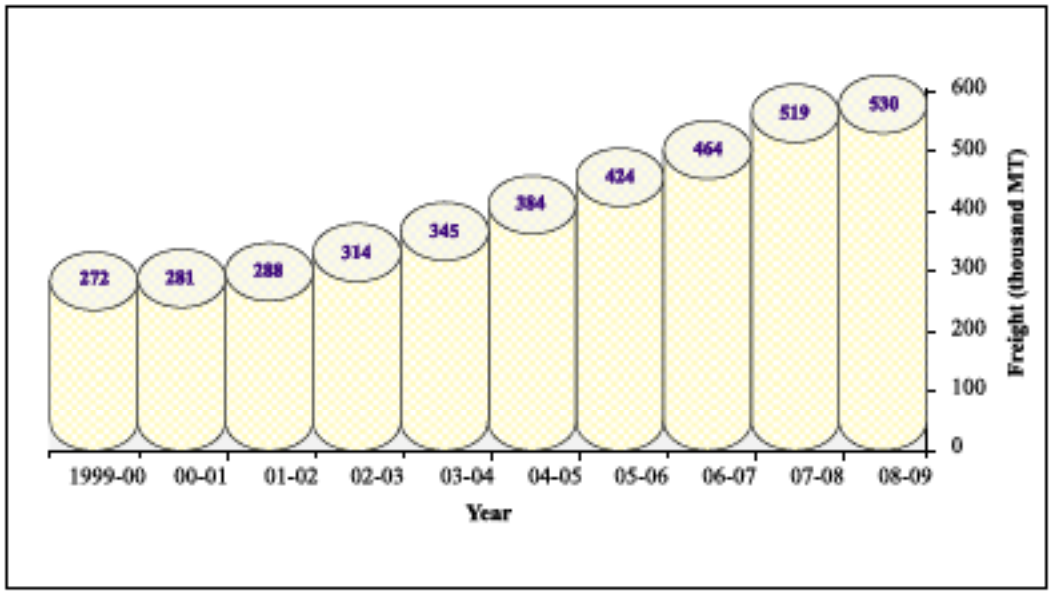
4.2 According to the Financing Plan for Ports, development of Major Ports would require an investment of Rs. 57,452 crore between 2006-07 and 2011-12 while development of other ports (i.e. ports not owned by the Central Government) would require Rs. 35,933 crore over the same period, aggregating to Rs. 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 in ports sector**



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**

Sl. No	Port	Nature of Project	Project Cost (Rs. crore)	Scheduled Completion Date
1	New Mangalore	Iron Ore Berth	177	July 2011
2	Kandla	Multipurpose Cargo Berths	755	September 2011
3	Paradip	Deep Draught Iron Ore Berth	591	April 2012
4	Paradip	Deep Draught Coal Berth	479	May/June 2012
5	Tuticorin	Container Terminal	312	March 2011
6	Ennore	Container Terminal	1,407	September 2012
7	Mormugao	Coal Terminal	334	March 2012
8	Ennore	Marine Liquid Terminal	196	January 2009
9	Ennore	Coal Terminal	348	June 2010
10	Ennore	Iron ore terminal	480	June 2010
11	Chennai	Container terminal	492	April 2009
12	Mumbai	Container terminal	1,460	December 2010
	Total		7,031	

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 23 Port Terminal projects through PPP during 2009-10. 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 201112. 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

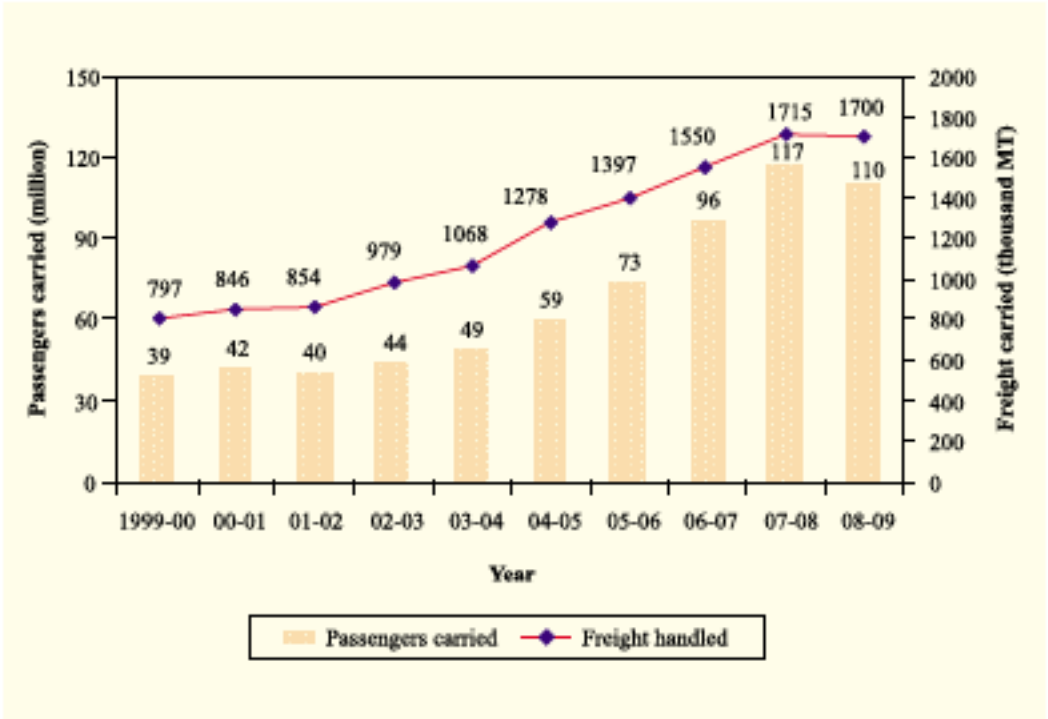
5.1 Air passenger growth in India has been one of the highest in the world, and is expected to surpass countries like China, France and Australia in the years to come. India's civil aviation market has grown at a compound annual growth rate (CAGR) of 18 per cent, and was worth US$ 5.6 billion in 2008. 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, Bhubaneshwar, 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 100 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 expected to be operational by June 2009.

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 273 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 33.23 per cent at the end of December 2008. 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**

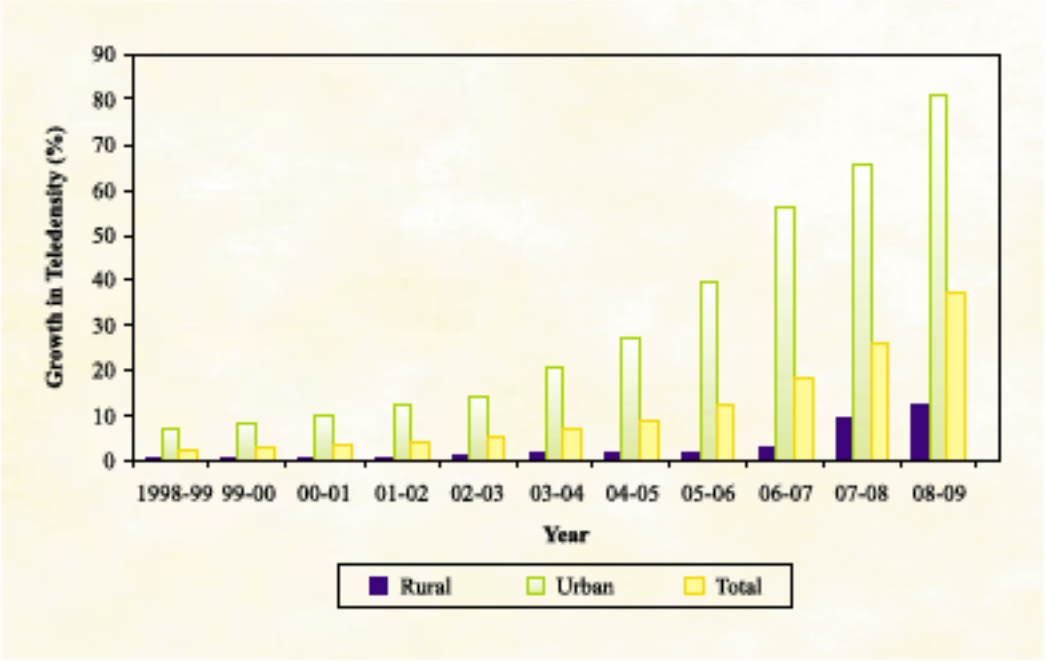


Figure 10: **Investment in Telecom Sector (Rs. cr.)**

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 34.69 crore by the end of December 2008. The share of wireless in the total number of phones is 91.17 per cent (39.18 crore) as on March 31, 2009 in which the private sector share is about 85 per cent. Wireline connections consist of 3.80 crore subscribers. The top three private sector providers, viz., Bharti, Reliance and Vodafone account for 60 per cent of the total wireless customer base of 34.69 crore as on March 31, 2009.

Wire Line

6.4 The total subscriber base of fixed (Wireline) lines stood at 3.80 crore as on March 31, 2009. The incumbent public sector entities, viz., BSNL and MTNL have a market share of 77.84 per cent and 9.32 per cent respectively in the subscriber base, while all the five private operators together have a share of 12.83 per cent. The market share of public and private sector enterprises in the total Adjusted Gross Revenue (AGR) from telecom services is 28.75 per cent and 71.25 per cent respectively in the quarter ending 2008.

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 12.85 million internet subscribers at the end of December 2008. Of these, 5.52 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 5.52 million broadband subscribers, 4.711 million are DSL-based, 0.485 million use the Cable Modem, 0.155 million Ethernet LAN, 0.078 million Optic Fibre, 0.072 million Wireless, and 0.019 million Leased Line, while 0.003 million 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

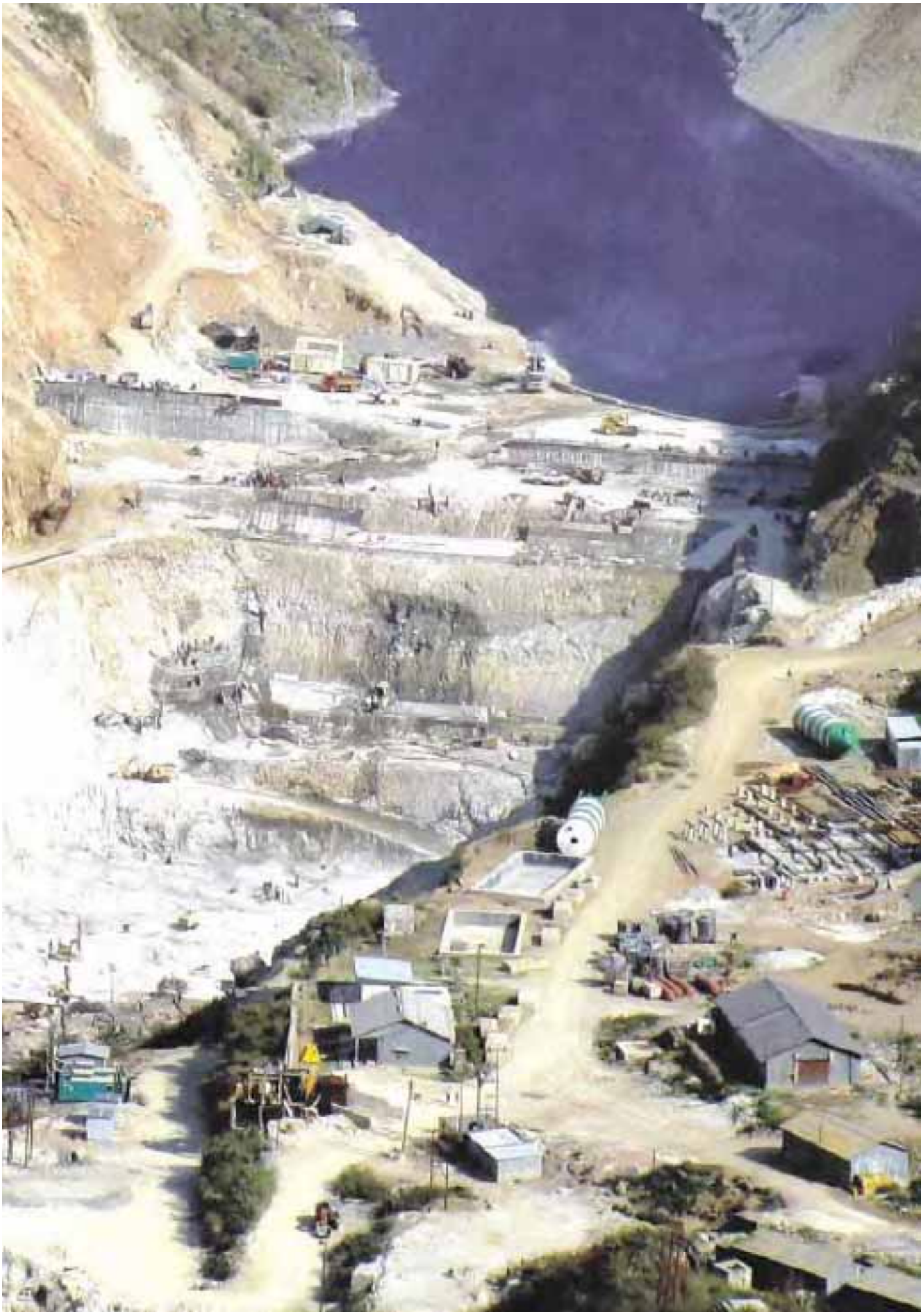
WiMAX, it is likely that wireless broadband will provide wider coverage but not necessarily at the very high speeds enabled by optical fibre networks.

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. 11,155 crore in the year 2008-09 (upto February).

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

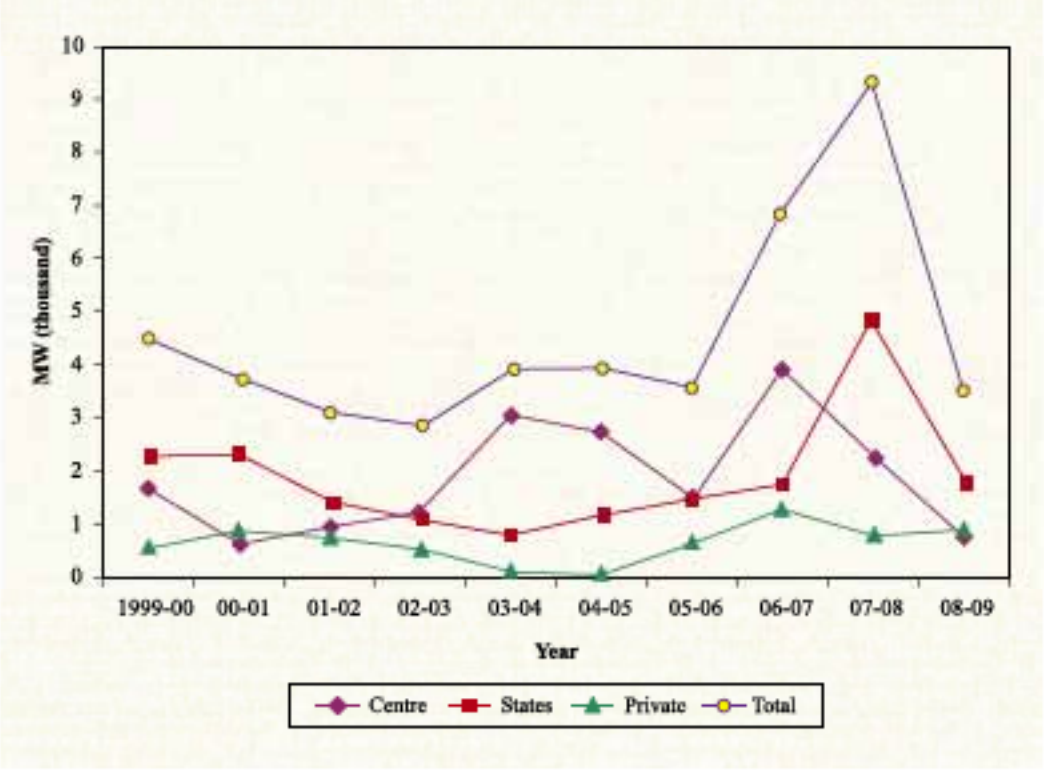
Overview

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 2006, 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 13,174 MW has already been realised with an additional 2,733 MW of captive capacity. The status of generation projects of the Eleventh Plan as on March 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	3,990	7,094	1,933	**13,017**
Under construction	17,457	12,919	14,294	**44,670**

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 March 2008, 14,900 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 Eleventh Plan envisages an addition of over 60,000 MW of transmission network by 2012, designed to carry 60 per cent of the power generated. The existing inter-regional power transfer capacity is 17,000 MW, which is to be further enhanced to 37,000 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.

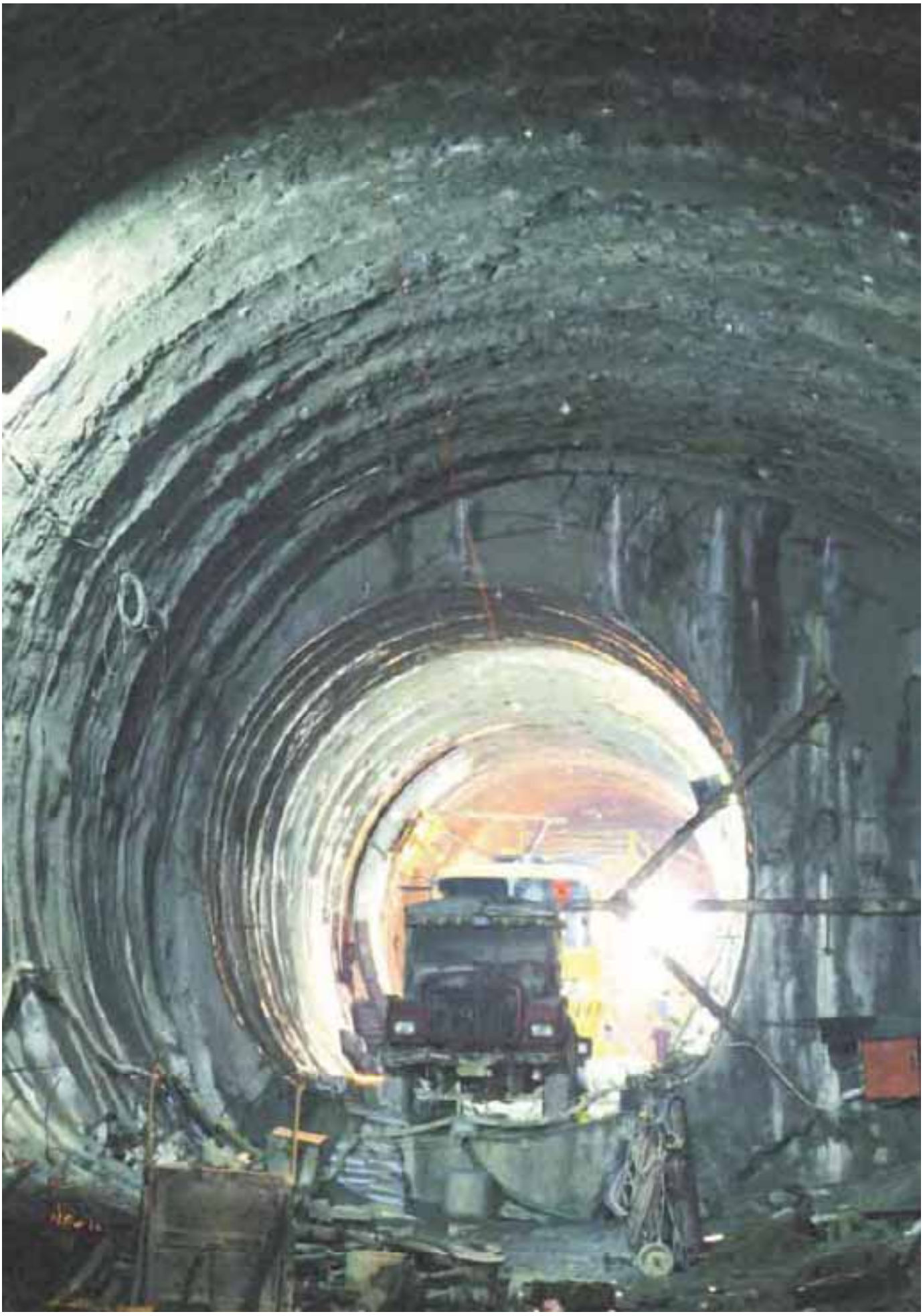
Inter-State Transmission Systems

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 RFQs having been issued for the evacuation of about 2,750 MW 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 71 km fully elevated Hyderabad Metro Project (3 lines) costing about Rs. 12,132 crore has been awarded on PPP basis to a private entity. No viability gap funding has been sought by the selected concessionaire.

(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 is proposed to be bid out on PPP basis shortly.

(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

Annex-I

PPPAC Approved Projects

(Refer para 1.11) (upto March 2009)

Sl. No	Name of Project	Project Cost (in Rs. crore)
	Andhra Pradesh	
1	Four-laning of Chilkalurpet-Vijayawada section including Guntur Bypass and Mangalagiri Bypass on NH-5 (53 km)	572
2	Four-laning of Hyderabad-Vijayawada section of NH-9 (61 km)	492
3	Four-laning of Hyderabad-Vijayawada section of NH-9 (120 km)	968
4	Four-laning of Machilipatnam-Vijayawada section of NH-9 (65 km)	467
5	Four-laning of Tirupati-Tirutani-Chennai section of NH-205 (125 km)	801
6	Four-laning of Cuddaph-Kurnool section of NH-18 (188 km)	1567
7	Four-laning of Armur Adloor-Yellareddy section of NH-7 (60 km)	490
8	Six-laning of Chilkaurpet-Nellore section of NH-5 (184 km)	2163
9	Six-laning of Vijaywada-Eluru-Rajahmundry section of NH-5 (198 km)	2087
	Assam	
10	Four-laning of Jorahat-Demow Section of NH-37 (82 km)	562
11	Four-laning of Baitha-Chariali-Tezpur section of NH-52 (134 km)	1203
	Bihar	
12	Four-laning of Patna Buxar section of NH-30 (125 km)	1620
13	Four-laning of existing 2-lane of Mokama to Munger section of NH-80 (70 km)	755
14	Four-laning of Gopalganj-Chapra-Hazipur (Package 1) (84 km)	923
15	Four-laning of Gopalganj-Chapra-Hazipur (Package 2) (72 km)	922
16	Four-laning of Bakhtiarpur-Khagaria stretch of NH-31 (120 km)	1703
17	Four-laning of Khagaria-Purnea section of NH-31 (141 km)	1253
18	Four-laning of Patna-Hazipur Muzaffarpur section of NH-77 incl. Muzaffarpur Bypass, connecting NH-28 (63 km)	570

Sl. No	Name of Project	Project Cost (in Rs. crore)
19	Four-laning of Muzaffarpur-Sonbarsa Section of NH-77 (89 km)	932
	Delhi/Haryana	
20	Construction of Six/Four-laning of Delhi-Haryana Border to Rohtak section of NH-10 (63 km)	486
	Goa	
21	Four-laning of Goa/Karnataka border-Panaji, Goa section of NH-4A (65 km)	382
	Gujarat	
22	Four/Six-laning of Gujarat/Maharashtra Border-Surat-Hazira Ports section of NH-6 (133 km)	1509
23	Six-laning of Surat-Dahisar section of NH-8 (239 km)	1405
	Harayana	
24	Elevated Six-lane Highway (fly over) on NH-2 (4 km)	1917
25	Four-laning of Rohtak to Hissar of NH-10 (97 km)	695
26	Panipat-Jalandhar section of NH-1 (291 km)	2208
27	Six-laning of Gurgaon-Kotputli-Jaipur section of NH-8 (225 km)	1673
28	Development of Eastern Peripheral Expressway (NE-II) around Delhi (135 km)	2333
29	Six-laning of Delhi-Agra section of NH-2 (180 km)	1917
	Jharkhand	
30	Four-laning of Hazaribagh-Ranchi road (71 km)	594
	Karnataka	
31	Access Controlled Highway of Bangalore-Nelamangala section of NH-4 (19 km)	445
32	Widening of existing two-lane carriageway to 4/6 lane divided carriageway configuration of Banglore-Hoskote-Mulbagal section of NH-4 (80 km)	565
33	Four-laning of Neelmangala Junction on NH-4 with NH-48 to Devihalli (82 km)	441

Sl. No	Name of Project	Project Cost (in Rs. crore)
34	Four-laning of Devihalli-Hasan section of NH-48 (77 km)	440
35	Four-laning of Kundarpur-Surathakal section of NH-17 and Mangalore-Kerala border section (90 km)	615
36	Six-laning of Belgaum-Dharwad section of NH-4 (80 km)	637
37	Upgradation, Operation and Maintenance of Hyderabad Bangalore section of NH-7 (22 km)	485
38	Widening and Strengthening of Existing Two-lane carriageway form Hospet to Bellary on NH-63 (74 km)	173
	Kerala	
39	Four-laning of Walayar-Vadakkancherry section on NH-47 (55 km)	596
40	Six-laning of Vadakkancherry-Thrissur section on NH-47 (30 km)	514
41	Four-laning of Kuttipuram Edapally section of NH-17 (112 km)	1157
42	Four-laning of Kannur-Vengalum (Kozhikode) section (Package 1) (83 km)	1143
43	Four-laning of Vengalum-Kuttipuram section (Package 2) (82 km)	1108
44	Four-laning of Cherthalai-Ochira section of NH-47 (84 km)	1286
45	Four-laning of Cherthalai-Thiruvanthapuram section (Package 2) (86 km)	1240
46	Four-laning of Trivandrum-Kerala/TN Border, including Trivandrum bypass (Package 1) (43 km)	822
	Madhya Pradesh	
47	Four-laning of Khalghat to MP/Maharashtra Border of NH-3 (83 km)	549
48	Six-laning of Indore-Dewas section of NH-3 (45 km)	408
	Maharashtra	
49	Four-laning of MP/Maharashtra Border-Dhule section of NH-3 (97 km)	743
50	Six-laning of Pimpalgaon-Nashik-Gonde NH-3 (60 km)	752
51	Four-laning of Pune-Sholapur section of NH-9, (Package 1) (110 km)	922

Sl. No	Name of Project	Project Cost (in Rs. crore)
52	Four-laning of MP/Maharastra border-Nagpur section of NH-7 including Kamptee-Kahnan and Nagpur bypass (95 km)	1133
53	Four-laning of Pune-Sholapur section of NH-9 (Package II) (110 km)	809
54	Four-laning of Talegaon Amravati section of NH-6 (67 km)	618
	Meghalaya	
55	Four-laning of Jorabat-Barpani section of NH-40 (66 km)	536
	Orissa	
56	Four-laning of Panikoili-Rimuli section of NH-215 (62 km)	369
57	Four-laning of Panikoili-Rimuli section of NH-215 (101 km)	717
58	Four-laning of Rimuli-Roxy-Rajmunda section of NH-215 km (106 km)	653
59	Four-laning of Talcher-Dubari-Chandikhole section of NH-200 (133 km)	784
60	Four-laning of Bhubaneshwar-Puri section of NH-203 (68 km)	458
61	Six-laning of Chandikhole-Jagatpur-Bhubaneswar section of (70 km)	951
	Punjab	
62	Four-laning of Amritsar to Wagha Border of NH-1 (36 km)	206
63	Four-laning of Amritsar-Pathankot section of NH-15 (102 km)	704
64	Six/Four-laning of Zirakpur-Parwanoo section of NH-22 (29 km)	295
	Rajasthan	
65	Four-laning of Jaipur-Reengus section of NH-8 (54 km)	343
66	Six-laning of Kishangarh-Beawar section of NH-8 (94 km)	722
67	Six-laning of Kishangarh-Udaipur section of (315 km)	3076
68	Four-laning of Jaipur-Tonk-Deoli section of NH-12 (149 km)	1183
69	Widening of Two-lane carriageway from Beawar to Gomti on NH-8 (115 km)	200

Sl. No	Name of Project	Project Cost (in Rs. crore)
	Tamil Nadu	
70	Four-laning of Salem to Ulundurupet section of NH-68 (136 km)	940
71	Four-laning of Pondicherry to Tindivanam section of NH-66 (38 km)	285
72	Four-laning of Trichy City to Dindigul Road section of NH-45 (89 km)	576
73	Four-laning of Trichy city to Karur Road section of NH-67 (80 km)	516
74	Six-laning of Chennai-Tada section of NH-5 (43 km)	35
75	Four-laning of Karaikkudi-Ramanathauram road section of NH-210 (80 km)	599
76	Four-laning of Trichy-Karaikudi seciton of NH-210 and Trichy bypass (120 km)	804
77	Four-laning of elevated road form Chennai Port gate No. 10 to Maduravoyal (NH-4) (19 km)	1345
78	Four-laning of Coimbatore-Mettupalayam section of NH-67 (50 km)	499
79	Six-laning of Krishnagiri-Walahjpet section of NH-46 (148 km)	1489
80	Four-laning of Nagapatnam-Thanjavur section of NH-67 (77 km)	619
81	Four-Laning of Kerala/Tamilnadu Boarder-Kanyakumari section of NH-47 (Package II) (70 km)	841
82	Four/Two-laning of Dindugal Theni section of NH-45 & Mumlli Theni section of NH-220 (130 km)	813
83	Four-laning of Tindivanam Krishnagiri section of NH-66 (199.94 km)	1074
84	Construction of new Four-lane road from Ennore Port to Thachur on NH-5 (25 km)	355
	Uttar Pradesh	
85	Six-laning of Varanasi-Aurangabad section of NH-2 (190 km)	2588
86	Four-laning of Muzzafarnagar-Napali Farm (Near Hardwar) section of NH-58 (116 km)	1251
87	Four-laning of Ghaziabad-Aligarh section of NH-91 in U.P (126 km)	1325

Sl. No	Name of Project	Project Cost (in Rs. crore)
	Ports	
88	Development of a Coal Terminal at Port of Mormugao	334
89	Development of Eighth Berth as Container Terminal	312
90	Construction of Container Terminal at Ennore Port	1,407
91	Construction of Deep Drought Coal Berth on BOT Basis	479
92	Development of 13th to 16th Multipurpose Cargo (other than liquid/container cargo) at Kandla Port	702
93	Construction of Iron Ore Berth at Paradip	591
94	Mechanized Iron ore Handling Facility at New Mangalore Port	309
	Grand Total	**84,406**

Annex II

Proposed National Highway Projects

(Refer para 2.10) (upto March 2009)

Sl. No	Name of Project	Length (in km)
PPPAC approved Projects*		
1	Armur-Adloor Yellareddy section of NH-7	60
2	MP/MH Border-Nagpur section of NH-7	95
3	Walayar-Vadakkanecherry section of NH-47	58
4	Hazaribagh-Ranchi	71
5	Amritsar-Pathankot	102
6	Kundapur-Surthkal & Mangalore KNT/ Kerala Border	90
7	Goa/KNT Border-Panji	65
8	Vijayawada-Machlipatnam	65
9	Kannur-Kuttipuram (Package-II)	82
10	Trivendrum-Kerala/TN Border	43
11	Kerala/TN Border-Kanayakumari	70
12	Charthalai-Ochira	84
13	Ochira-Thiruvananthapuram	86
14	Kannur-Kuttipuram (Package-I)	83
15	Patna-Hazipur-Muzaffarpur	63
16	Hyderabad-Vijayawada	181
17	Ghaziabad-Aligarh	126
18	Tirupati-Tiruthani-Chennai	125
19	Jaipur-Reengus	54
20	Rohtak-Hissar	97
21	Panikoli-Keonjhar-Rimuli	163
22	Chandikhole-Dubari-Talchar	133
23	Rimuli-Roxy Rajamunda Section	106
24	Jaipur-Tonk-Deoli	149
25	Coimbatore-Mettupalayam	50

* These projects are also included in Annex I

Sl. No	Name of Project	Length (in km)
26	Kuttipuram-Edapally	112
27	Nagapatnam-Thanjaveur	77
28	Trichy-Karaikudi	120
29	Tindivanam-Krishnagiri	200
30	Karaikudi-Ramanathapuram	80
31	Dindigul-Perigulam-Theni NH-45 Ext & Theni-Kumili NH-220	130
32	Pune-Sholapur (pkg-II)	110
33	Talegaon-Amravati	67
34	Sonbarsa-Muzaffarpur	89
35	Mokhama-Munger	70
36	Khagaria-Purena	140
37	Gopalganj-Chapra-Hazipur (Pkg.II)	72
38	Gopalganj-Chapra-Hazipur (Pkg.I)	84
39	Patna-Buxar	125
40	Khagaria-Bakhatiapur	120
41	Chandikhol-Jagatpur-Bhubaneswar	70
42	Delhi-Agra	180
43	Kishangarh-Udaipur	315
44	Belgaum-Dharwad	80
45	Varanasi-Aurangabad	190
46	Krishnagiri-Walahipet	148
47	Nellore-Chilkaluripet	184
48	Vijawada-Elluru-Rajamundri	198
49	Indore-Dewas	45
50	Hospet-Bellary	74
51	Muzaffarnagar-Haridwar	80
52	Haridwar-Dehradun	37
53	Amritsar-Jalandhar	20

Sl. No	Name of Project	Length (in km)
Projects yet to be approved by PPPAC		
54	Rewa and Katni bypass & Maihir-Katni bypass	103
55	Betul to Maharashtra/Madhya Pradesh border	115
56	Gwalior to MP/UP Border	108
57	Kanaktora-Jharsuguda Jn	68
58	Bamitha to Bela	141
59	Raibareilly to Allahabad	19
60	Karauli-Dholpur	72
61	Sitarganj to Bareilly	87
62	Aligarh to Kanpur	268
63	Varanasi to Gorakhpur	209
64	Kanpur to Kabrai section	123
65	Kashipur-Sitarganj	97
66	Kiratpur-Bilaspur	63
67	Agra to Aligarh	79
68	Ahmednagar to Pathardi	51
69	Vijaywada to AP/Chattisgarh Border	236
70	Kollam-Kazhuthurty	82
71	Kozikhode-Palakkad	126
72	Kollam-Kumily	191
73	Shimoga-Mangalore	188
74	Chitradurga-Shimoga	111
75	Gundlupet-Kollegal	114
76	Kozhikode-Muthanga	118
77	Bodimettu-Kundannur Jn on Cochin Bypass	168
78	Digmarru to Ongole	255
79	Sidhi to Sigrauli	115
80	Jabalpur to Lakhnadon	74

Sl. No	Name of Project	Length (in km)
81	Pathri to Nanded	149
82	Dindigul-Karnataka Border	266
83	Viluppuram-Pondicherry-Nagapattinam	194
84	Coimbatore-Karnataka Border	103
85	Thanjavur-Pudukkotai-Sivaganga-Manamadurai	122
86	Tiruchirapalli-Lalgudi-Chidambaram & Meenusuriti-Jayamkondam-Kootu Road	135
87	Vikravandi-Kumbakonam-Thanjavur	165
88	Khurda to Nayagarh	60
89	Bilaspur-Urdawal	197
90	Maheshkhut-Saharsa-Purnea	171
91	Ekangarsarai-Jehanabad-Arwal	54
92	Biharsharif-Barbigha-Mokama	52
93	Raigarh-Sarangah-Saraipali	87
94	MP Border-Simga	126
95	Jabalpur-Mandla-Chilpi	189
96	Mangawa to UP border	52
97	Kattipudi to Digmaru	140
98	Ranchi-Nagar Untari	260
99	Ranchi-Birmitrapur	210
100	Rohtak-Bawal	83
101	Panipat-Rohtak	81
102	Hyderabad-Yadgiri	36
103	Parwanoo-Solan	41
104	Bijapur-Hungud	97
105	Hungud-Hospet	98
106	Ahmedabad-Godhra	118
107	Godhra-Gujarat/MP Border	84
108	Kandla-Mundra Port	71

Sl. No	Name of Project	Length (in km)
109	Muradabad-Bareilly	119
110	Bareilly-Sitapur	152
111	Indore-Gujarat/MP border	155
112	Maharashtra/Goa border-Panaji Goa/KNT Border	139
113	Barasat-Krishnagar	84
114	Krishnagar-Bahrampore	78
115	Bahrampore-Farakka	102
116	Farakka-Raiganj	103
117	Raiganj-Dalkhola	50
118	Balgaum-Goa/KNT Border	82
119	Karnataka/AP Border-Mulgabal	22
120	Udaipur-Ahmedabad	235
121	Pune-Satara	145
122	Samakhiyali-Gandhidham	56
123	Tumkur-Chitradurga	114
124	Satara-Kagal	133
125	Hebbal Flyover to new airport in Banglore	22
	Total	**14,228**

Annex III

Approved State Projects

(Refer para 2.11) (upto March 2009)

Sl. No	Name of Project	Project Cost (in Rs. crore)
	Andhra Pradesh	
1	Four-laning of Hyderabad Karimnagar Ramagundam Highway (207 km)	1349
2	Four-laning of Puthalapattu Naidupet Highway (100 km)	528
3	Four-laning of Narketpally Addanki Medarametla Highway (213 km)	1194
4	Major Bridge on Godavari (4 km)	808
	Bihar	
5	Four-laning of Aurangabad-Bhita Highway (125 km)	262
6	Four-laning of Ara-Mohania Highway (117 km)	917
	Gujarat	
7	Four-laning of Rajkot-Jamnagar Vadinar (127 km)	543
8	Halol Godhra Shyamalji Road (32 km)	792
9	Four-laning of Ahmedabad Viramgam-Maliya Road (180 km)	993
10	Widening of Two-lane Bhuj-Bachau Road SH-42 (77 km)	190
11	Improvement of Nakhatrana Dayapar Panandhro Road SH-42 (79 km)	147
12	Four-laning of Sarkhej Vataman Pipli Bhavnagar Road (152 km)	900
	Karnataka	
13	Improvement in Dharwad-Ramnagar Road (61 km)	198
14	Two-laning of Whagdhari-Ribbanpally stretch (141 km)	197
15	Improvement in Chikkanaya-Knahalli-Tiptur-Hassan Road (76 km)	202
	Madhya Pradesh	
16	Fout-laning of Lebad-Jaora State Highway (125 km)	425
17	Four-laning of Jaora-Nayagaon State Highway (125 km)	403
18	Four-laning of Bhopal Dewas State Highway (143 km)	478
19	Strengthing of Matkuli Tamia Chindwara Road SH-19 (112 km)	98
20	Strengthing of Chandpur Alirajpur Kukshi Badwani Road (100 km)	100
21	Strengthing of Mandsaur Sitamau Road (upto Rajasthan Border) (44 km)	30
22	Four-laning of Bhopal Bypass (52 km)	233
23	Four-laning of Indore-Ujjain Road on SH-27 (51 km)	251

Sl. No	Name of Project	Project Cost (in Rs. crore)
24	Development of Bhina-Khimalsa-Malthon Road (39 km)	70
25	Two-laning of Bhind-Mihona-Gopalpur Road (SH-2 & SH-45) (51 km)	84
26	Two-laning of Damoh Jabalpur Road (SH-37) (99 km)	213
27	Two-laning of Sagar Damoh (SH-14) (69 km)	117
	Maharashtra	
28	Four-laning of Jalna Deoulgaonraja Berala Phata (SH-176) (77km)	125
29	Four-laning of Manjuarsumba Lokhandi Sawagaon Latur (SH) (125 Km)	203
30	Four-laning of Berla Phata Chikhali Khamgaon Road (68 km)	92
31	Four-laning of Nasik Vaijpur Aurangabad Road (110 km)	157
32	Four-laning of Osmanabad-Latur Road (203 km)	479
33	Jam-Warora-Chandrapur-Bamni Road (64 km)	448
34	Four-laning of Aurangabad Paithan Highway (46 km)	179
35	Four-laning of Baramathi-Phaltan-Shirwal Highway (78 km)	357
	Rajasthan	
36	Widening of Jaipur Bhilwara Road (236 km)	247
37	Widening of Bhilwara Bundi Road (113 km)	120
38	Widening of Jaipur-Naugaur Road (253 km)	220
39	Widening of Sawai Madhopur-Bharatpur Road (244 km)	244
40	Widening of Dabadeh to Bhawani Mandi Road (60 km)	63
41	Widening of Narnaul-Kotputli Kuchaman State Highway (220 km)	193
42	Widening of Jobner-Thanagaji Road (164 km)	171
	Urban Infrastructure	
43	Mumbai Metro Corridor-II (Charkop Bandra Mankhurd 31 km)	7,660
44	Hyderabad Mass Rapid Transit System Project	11,790
	Grand Total	**34,423**

Annex IV

Port Projects to be awarded in 2009-10

(Refer para 4.10)

Sl. No	Name of Port	Name of Project	Project Cost (Rs. in cr.)
1	Vizag	Mechanised handling facilities for fertilizers	153
2	Vizag	Mechanised Coal handling facilities	414
3	Chennai	Development of Dry Port & ulti Modal Logistic Park	180
4	Chennai	Creation of Mega Container Terminal	3105
5	Tuticorin	North Cargo Berth No. II	40
6	Cochin	International Cruise Terminal Cum Public Plaza	375
7	Cochin	Multi-purpose Liquid Terminal	148
8	JNPT	Container Terminal	600
9	JNPT	4th Container Terminal	6700
10	Kandla	Berthing and allied facilities of Tekkra	492
11	Kandla	Single Point Mooring (SPM) and allied facilities	698
12	Kolkata	Mechanisation at HDC berth no 2	*
13	Kolkata	Mechanisation at HDC berth no 8	*
14	Paradip	Multi purpose berth	*
15	Paradip	Multi purpose berth	*
16	Paradip	Mechanisation of Cargo Handling	*
17	Paradip	Mechanisation of Cargo Handling	*
18	Vizag	Container Terminal at outer harbor	*
19	Vizag	Development of East berth	*
20	Vizag	Mechanised handling facilities	*
21	NMPT	New Container Terminal	*
22	Mumbai	Cruise Terminal	*
23	Mumbai	Cargo Terminal	*

* Feasibility study being conducted

Published by

The Secretariat for the Committee on Infrastructure

Planning Commission, Government of India
Yojana Bhawan, Parliament Street
New Delhi - 110001