

Building Transmission Systems: Challenges and Opportunities

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Infrastructure Deficit

Power

- 14% peaking deficit and 11% energy shortage; 27% T&D losses; absence of competition; and inadequate private investment

Highways

- 70,548 Km of NH (2% of network, 40% of traffic): only 18% Four-lane; 52% Two-lane; and 30% Single-lane; State highways also suffer from prolonged neglect

Ports

- Inadequate berths, rail / road connectivity and draft are constraints

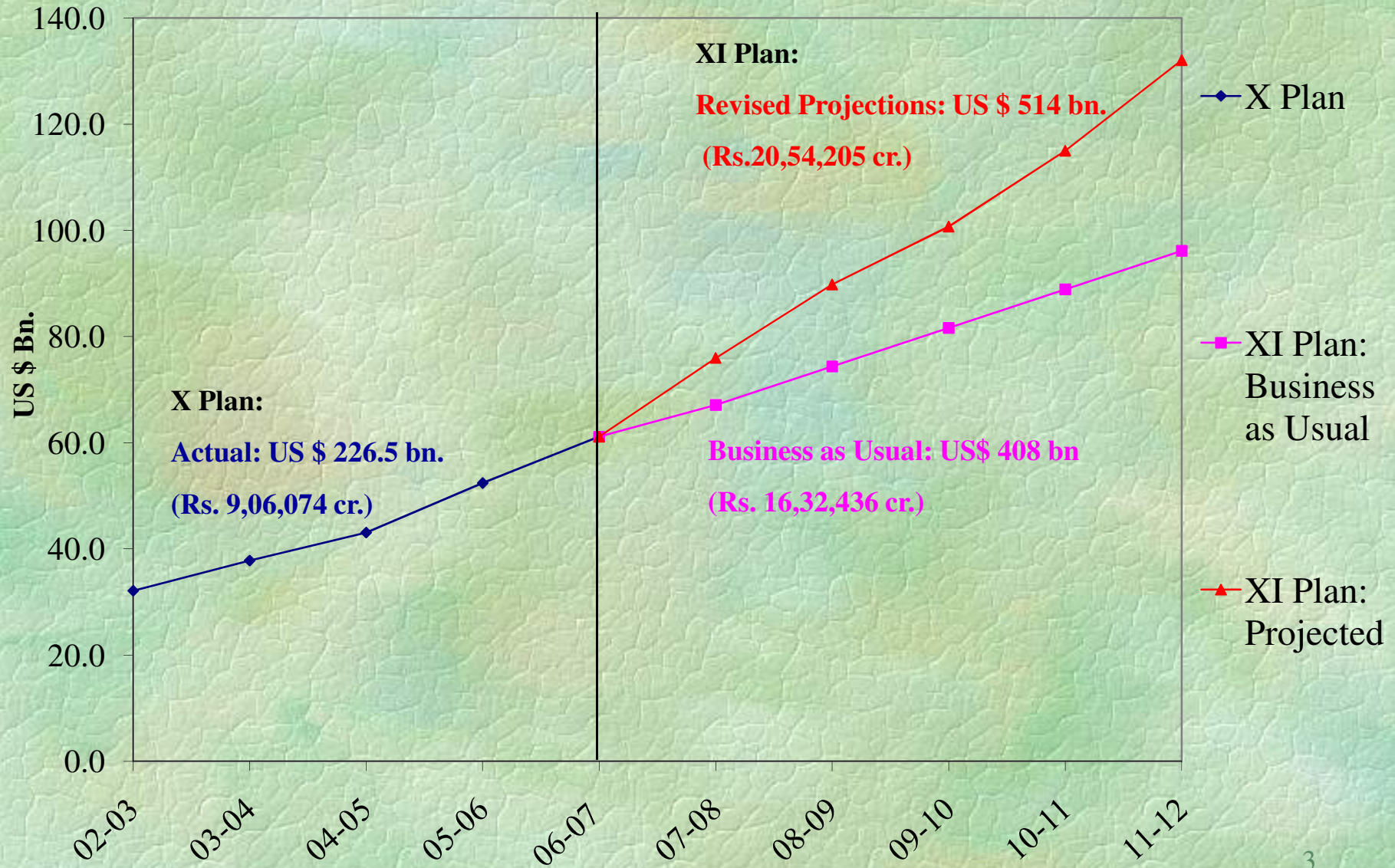
Airports

- Inadequate capacity: Runways, aircraft handling capacity, parking space & terminal buildings

Railways

- Old technology; saturated routes: slow average speeds (freight: 22 kmph; passengers: 50 kmph); low payload to Tare ratio (2.5)

Projected Investment in Infrastructure



Projected Investment in Infrastructure (Revised)

(at 2006-07 prices)

Sectors	X Plan		XI Plan	
	Rs. crore	Share (%)	Rs. crore	Share (%)
Electricity (incl. NCE)	3,40,237	37.55	6,58,630	32.06
Roads and Bridges	1,27,107	14.03	2,78,658	13.57
Telecommunication	1,01,889	11.25	3,45,134	16.80
Railways (incl. MRTS)	1,02,091	11.27	2,00,802	9.78
Irrigation (incl. Watershed)	1,06,743	11.78	2,46,234	11.99
Water Supply & Sanitation	60,108	6.63	1,11,689	5.44
Ports	22,997	2.54	40,647	1.98
Airports	6,893	0.76	36,138	1.76
Storage	5,643	0.62	8,966	0.44
Oil & Gas Pipelines	32,367	3.57	1,27,306	6.20
Total	9,06,074	100	20,54,205	100

Revised Mid-Term Projections

Compared to original Eleventh Plan projections, the revised projections are:

Telecom: (+) 34%

Irrigation: (+) 3%

Power: (-) 1%

Roads: (-) 11%

Water Supply: (-) 23%

Railways: (-) 23%

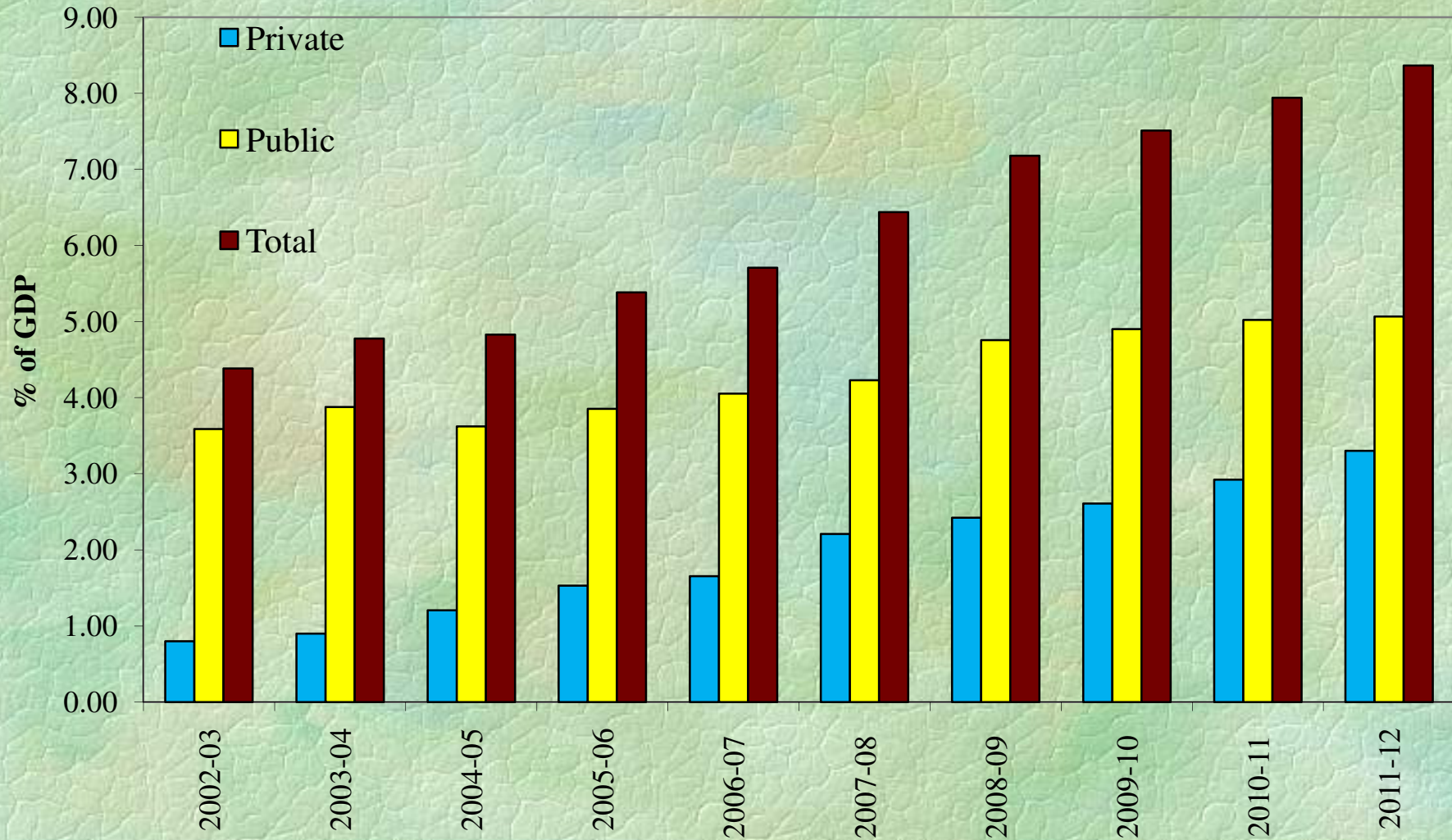
Ports: (-) 53%

Investment by Centre, States & Private Sector

*(Rs. crore at 2006-07 prices)
(per cent share in brackets)*

	Tenth Plan	Eleventh Plan
Centre	3,70,381 (41)	6,90,926 (34)
States	3,10,473 (34)	6,20,367 (30)
Private	2,25,220 (25)	7,42,912 (36)
Total	9,06,074	20,54,205

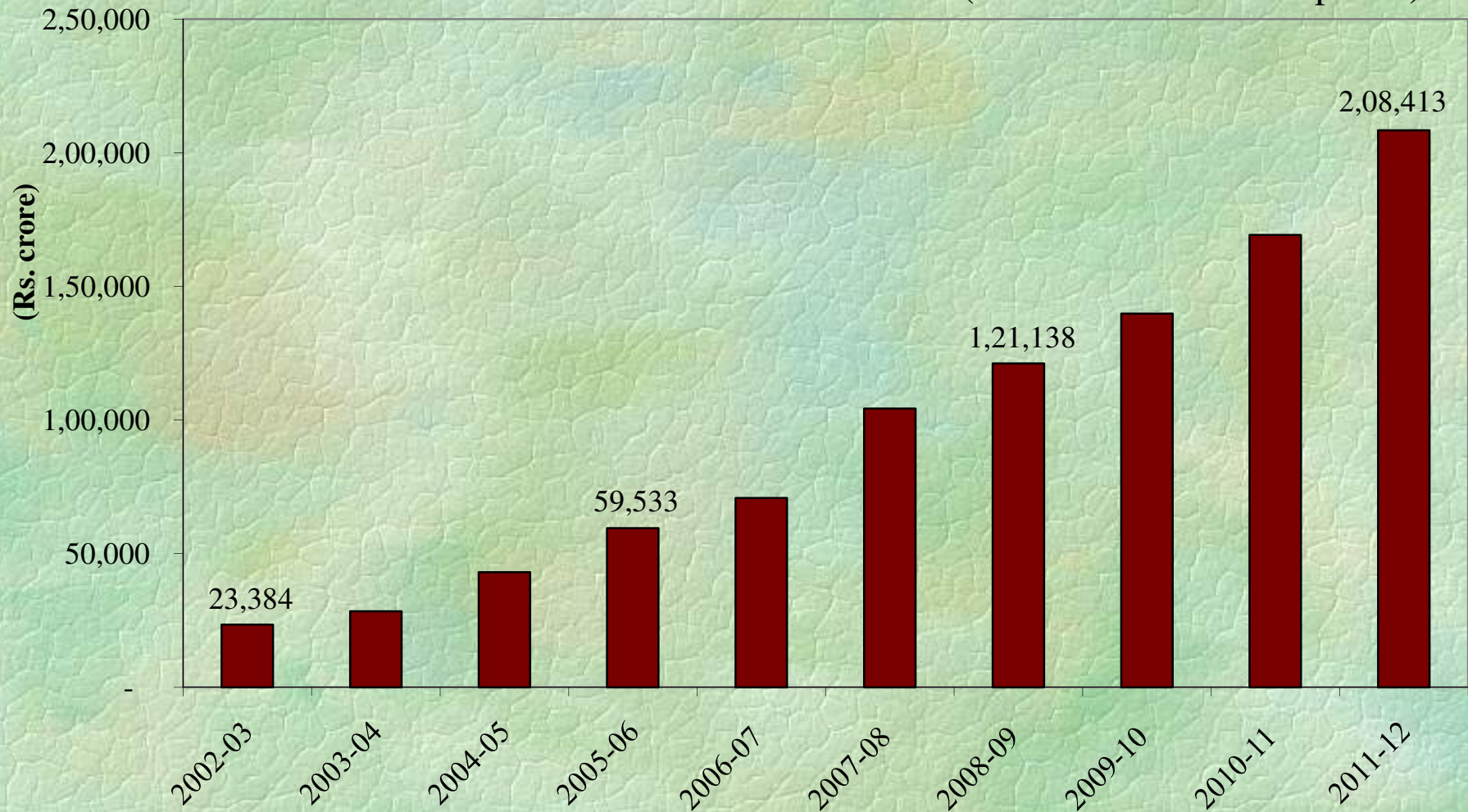
Investment in Infrastructure as % of GDP



Projected figures for 2009-12

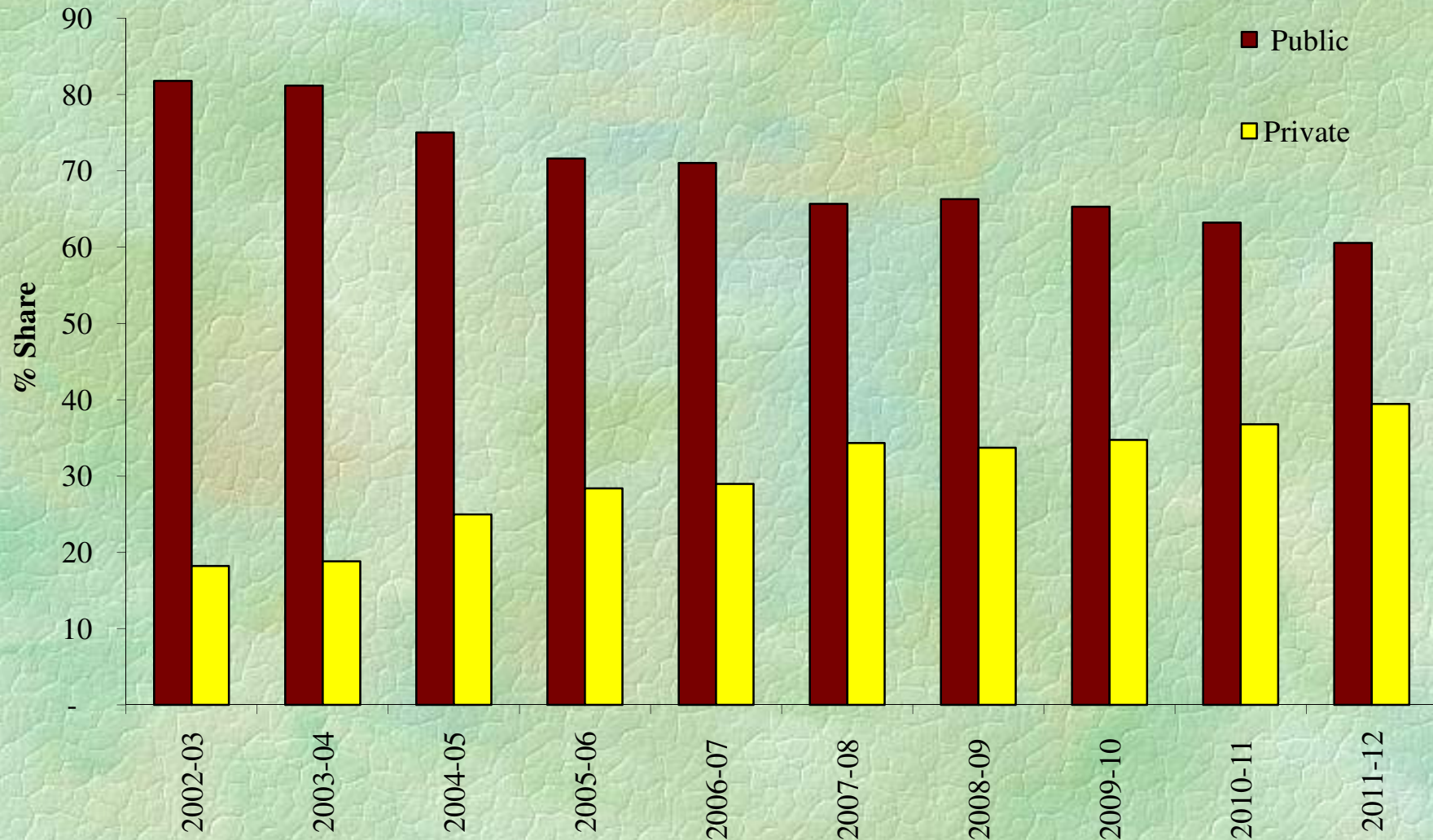
Growth of Private Investment

(Rs. crore at 2006-07 prices)



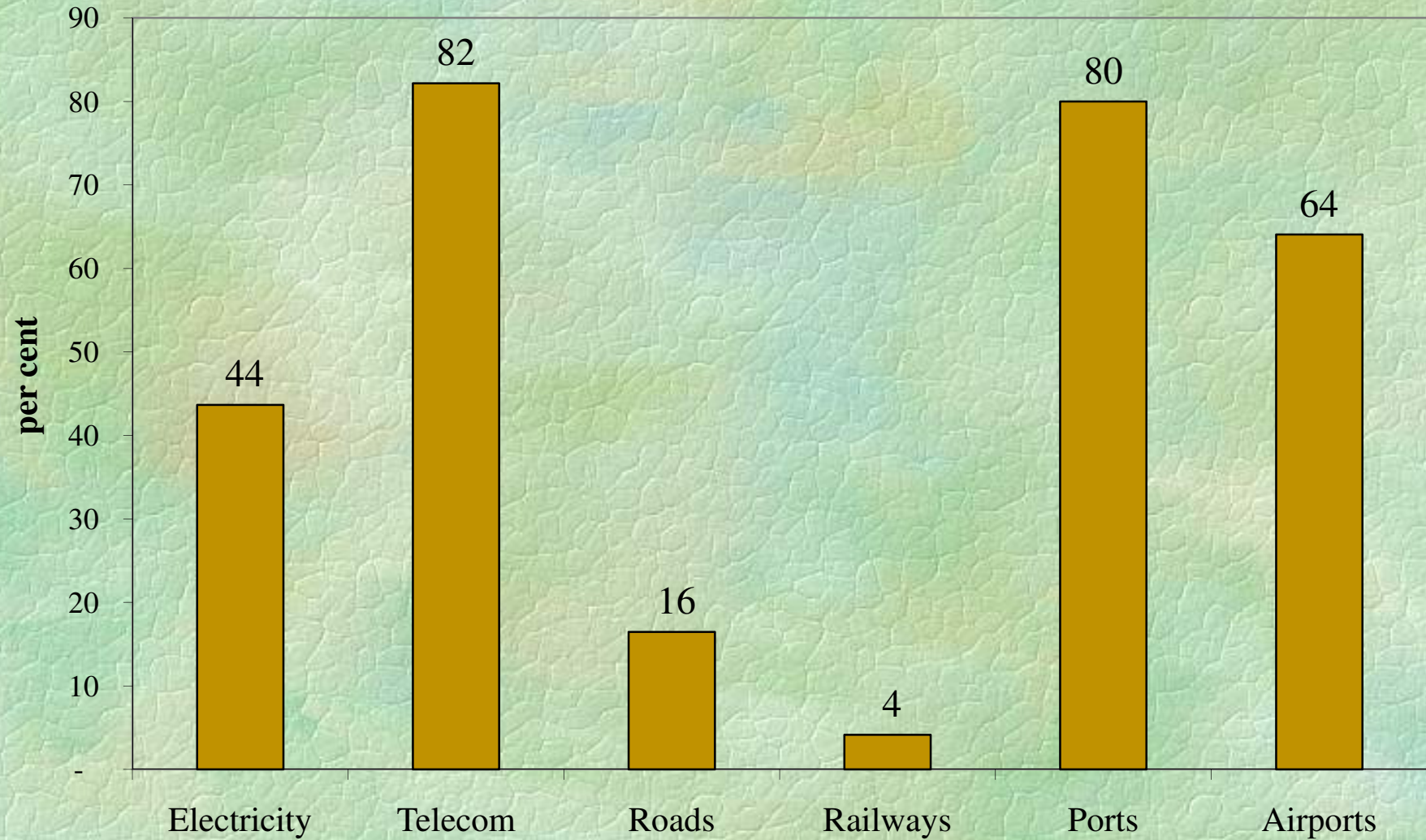
Projected figures for 2009-12

Relative Share of Private Investment (%)

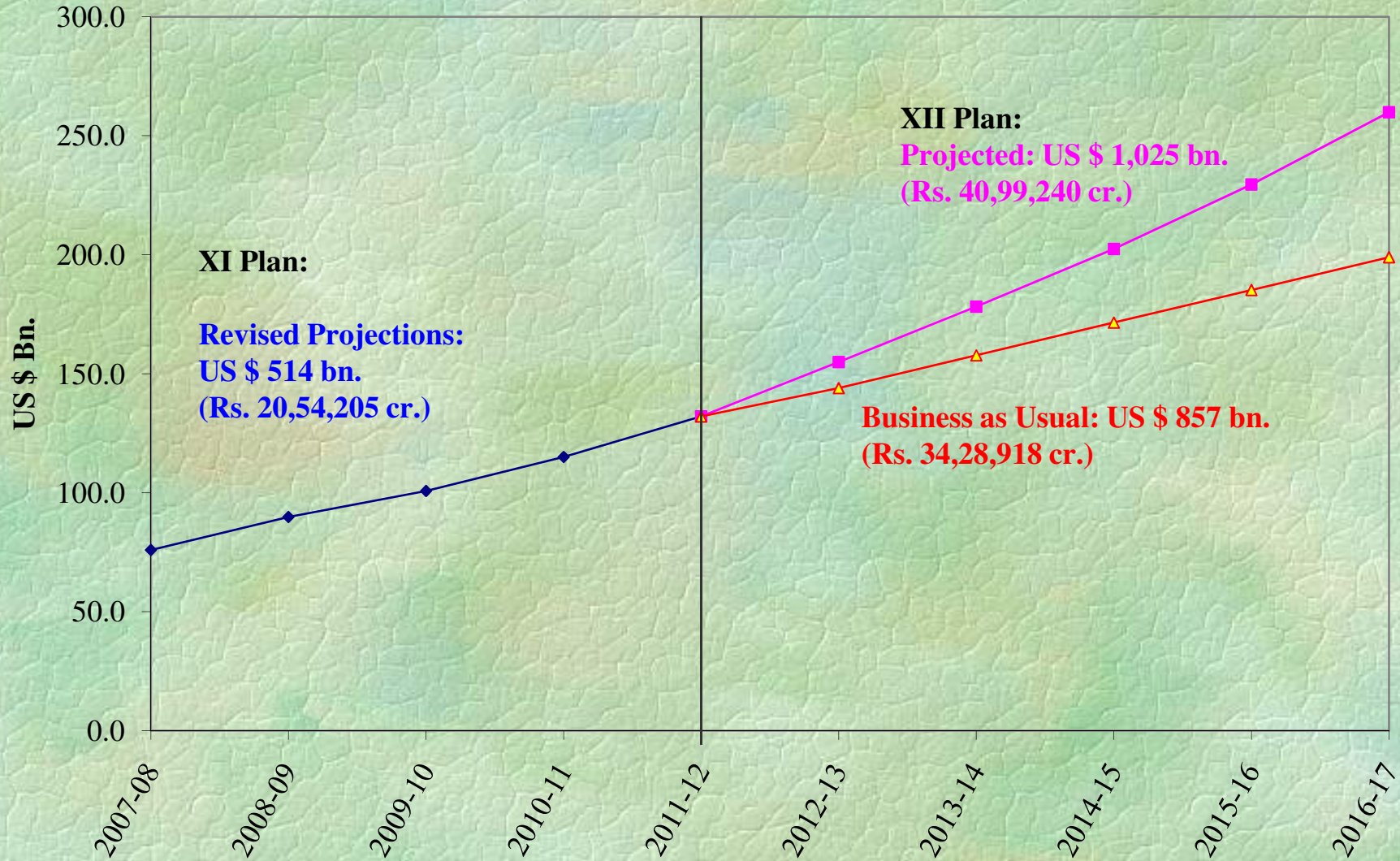


Projected figures for 2009-12

Sector-wise share (%) of private investment during the Eleventh Plan

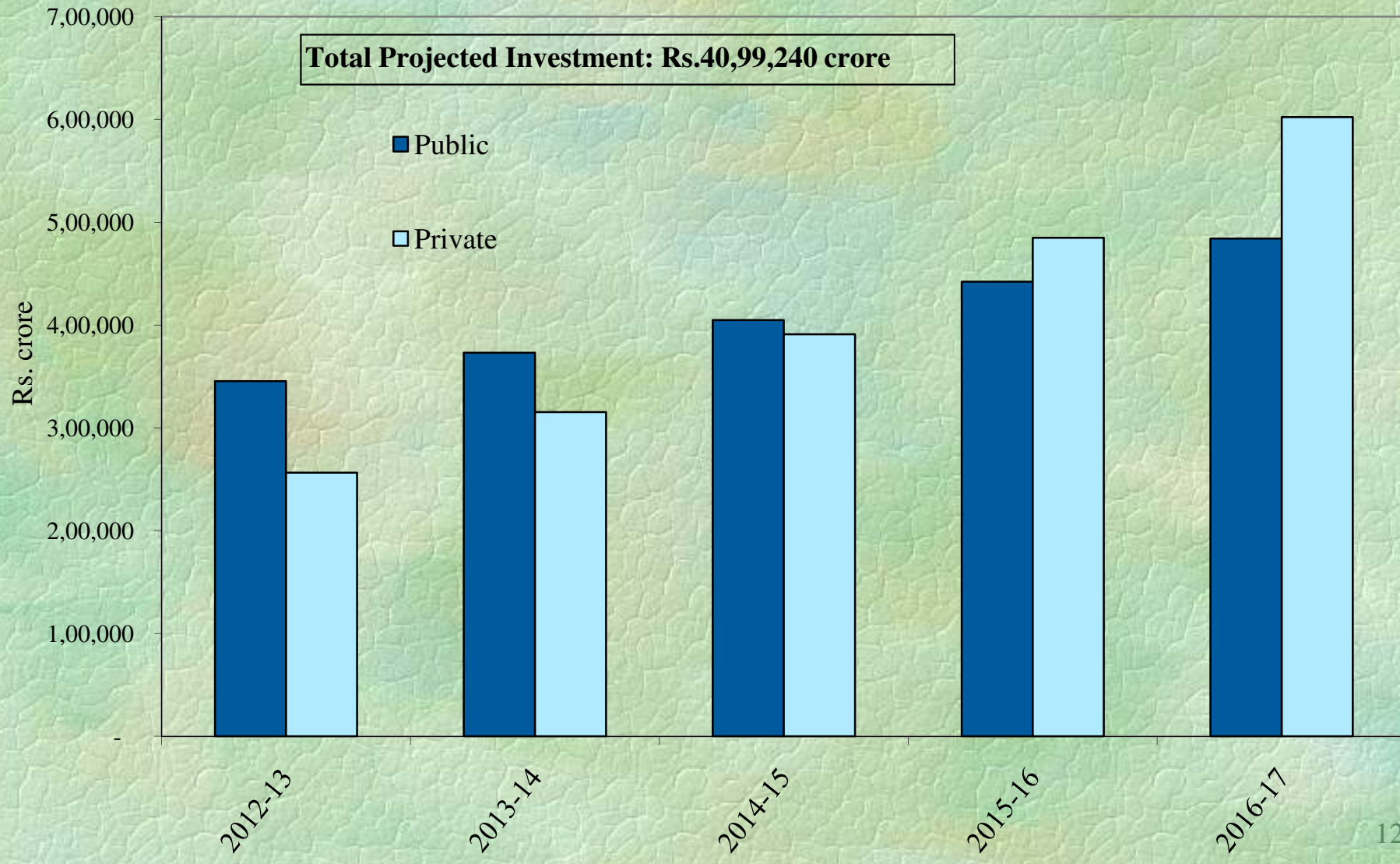


Projected Investment in Twelfth Plan



Share of Private Investment in Twelfth Plan

(Rs. crore at 2006-07 prices)



Policy Challenges

- **Large capacity addition**
 - Time-bound delivery under **budgetary constraints**
 - World class yet **cost effective**
 - Commercially sustainable yet **affordable**
- **Attracting private investment**
 - Policy and regulatory **framework** for PPPs
 - Institutional restructuring and reorientation
 - **Financial support** to PPPs

Division of Labour

- **Public sector to continue, and even expand**
 - Especially in segments that can't be commercialised, such as rural roads
- **Increased reliance on PPPs for additionality & improved efficiency**
 - In segments that can be commercialised, eg. roads, ports, airports & rail concessions
- **Independent private investment wherever feasible**
 - Enable competition in power generation, airlines, container trains etc.

Stages of PPPs

- I. Public sector provision of Infrastructure: **Command & Control**
 - PPP by exception
 - II. Introduction of PPPs: **The Transition** - still on in some sectors/states
 - Largely negotiated; characterised by rent-seeking
 - Driven by private beneficiaries (eg. Dabhol, NOIDA bridge)
 - III. PPPs gain acceptability: **Enhancing welfare & efficiency**
 - Transparent, competitive and fair
 - Driven by the government; good governance becomes the key
 - Objective is to attract private capital in public projects
- **Indian PPP projects are mostly in Stage III**

Governance: Typical Issues

- Unwillingness of **incumbents** to cede control over construction & operation of projects
- Denial of **level playing field**
- Inadequate and inefficient **roll out** of projects
 - The demand for PPP projects is far greater than their supply
- Incumbent **mindset** constitutes a major challenge

Financial support to PPPs

- Viability Gap Funding (**VGF**) upto 20% of capital costs based on bidding
- **270** central and state projects with an investment of **Rs. 2,14,228 cr.** (US\$ 54 bn) cleared with a VGF commitment of **Rs. 59,493 cr.** (US\$ 15 bn)
- India Infrastructure Finance Company (**IIFCL**) provides upto 20% of capital costs as long-term debt for viable projects
- IIFCL has sanctioned **Rs. 21,290 cr.** (US\$ 5.3 bn) for **125** projects

An expanded Power Programme

- Large **capacity addition** of about 80,000 MW needed; investment of about **Rs. 10 lakh cr required during XI Plan**, including in transmission and distribution networks
- Likely investment in power sector to increase from **Rs. 3,40,000 cr** during X Plan to **Rs. 6,60,000 cr** in the XI Plan; significant shortfall compared to requirement
- Share of **private investment** in the power sector was **43%** in **2009-10**; needs to be increased to meet the investment target
- Private investment largely **confined to generation**; **need to open up transmission and distribution** for private participation

Why PPPs in Transmission?

- **Investment gap** is largely in the State sector including intra-State transmission systems; **public resources alone cannot meet the investment needs**
- Need to accelerate **capacity addition**; harness **efficiencies**
- **PPPs reduce costs**; conventional contracts suffer from significant time and cost over-runs
- **Performance** of PPP projects is significantly superior; conventional procurement typically suffers from poor maintenance
- Reliance on PPP in intra-state transmission is **inevitable**

Enabling framework for PPP

- **Standardised documents & processes** enable accelerated roll out of bankable projects
- State transmission systems are eligible for grant of upto **20% of capital costs as VGF** from Central Government
- All PPP transmission projects can also avail of **20% of capital costs as long-term loans from IIFCL**
- Technical assistance being provided by Planning Commission

Typical documents for PPP in Transmission Systems

- **Substantive Documents**

- Model Transmission Agreement
- Manual of Specifications & Standards/ Grid Code and Standards

- **Process Documents**

- RFP for selection of transmission consultants
- RFQ for pre-qualification of bidders
- RFP for financial bids

RFP for selection of Consultants

- Assurance of **independent and competent advice** is critical
- Consultants are often encumbered by **conflicts of interest**
- Selection process, evaluation and draft agreement have been **standardised** in the Model **RFP** documents
- **Scope of work** would need to be project specific
- **Technical Consultants** needed for Feasibility Report; **Legal Advisers** for contract; and **Financial Consultants** for structuring and transaction support

Model RFQ/RFP

- In the past, divergent practices have led to **sub-optimal outcomes**, entailing legal and financial complications
- Fair and transparent pre-qualification and bidding is a **pre-requisite** for competitive and efficient PPPs
- Model RFQ/RFP documents were formulated by an IMG and **approved by CoI**; issued by Finance Ministry
- **Adopted for transmission projects** by an Inter-Ministerial Task Force chaired by Member, Planning Commission
- Model RFQ/RFP establish **generic guidelines**; provide requisite project-specific **flexibility**
- Accelerate and **streamline** decision-making

Evaluation Criteria for RFQ

- The evaluation criteria is divided into:
 - **Technical Capability**: based on project experience
 - **Financial Capacity**: based on networth
- The matrix for pre-qualification and bidding has been **simplified** and made **quantitative** and transparent

Contents of RFP

- Detailed terms to be specified in the **Transmission Agreement** that should form an integral part of the RFP
- **Feasibility Report** to be provided for assistance; contents would not be binding
- Only financial bid based on a **pre-determined bid parameter** would be invited and evaluated
- Bidder quoting highest premium / lowest grant should win

Manual of Standards & Specifications/ Grid Code

- Specifies the requirements for a **safe and reliable transmission systems**; yet enables innovation in design to add value
- **Standardizes** specifications with reference to Grid Code and applicable laws; yet allows for project-specific flexibility
- Reduces project **preparation time**
- Safeguards **user interest** by specifying output specifications
- Provides greater **predictability** to the concessionaire

Availability based Unitary Charge

- Salient features of Unitary Charge
 - **Payment linked to availability** of Transmission System
 - Based on **extant transmission tariffs, proposed capacity of the transmission system, total project costs** and the **estimated cost of the associated upstream & downstream transmission capacity**
 - Not to be fixed at a level lower than **75%** of the amount likely to be required for servicing the **project costs**
 - **Annual Reduction of 1-2%** to account for the depreciated value of the project assets
 - **Indexation** restricted to 30% of change in WPI; implies **reduction in real tariff**

Model Transmission Agreement

- Enables limited recourse **financing**
- **Mitigates risks** and allocates them to parties best suited to manage them
 - Concessionaire's risks include construction, operation & maintenance
 - Government's risks include political force majeure, changes in scope, specifications or law
- **Concession period:** 25 years; extendable by 10 years
- Option of creating **Additional Capacity** to enable optimal utilisation of project assets and reduce tariffs

Model Transmission Agreement (contd.)

- **Unitary Charge** stated upfront with approval of SERC; eliminates regulatory risk
- Provisions to ensure **safety** of users
- Requires **Financial Close** in 180 days
- Specifies strict **maintenance requirements**
- Monitoring and supervision by **Independent Engineer**
- **Right of way** for transmission lines to be procured by concessionaire

Model Transmission Agreement (contd.)

- **Key Performance Indicators** specified for:
 - Availability
 - Reliability
 - Transmission Losses
- Relies on **output specifications** and service quality
- Safeguards public **exchequer & user interests**
- Ensures **predictability** of costs, revenues and obligations
- Provides for **dispute resolution**, force majeure and termination

List of Standard Documents for PPP in Transmission

- **MTA** for PPP in Transmission Systems
- Model **RFQ/RFP** for selection of concessionaire
- Model RFP for selection of **Transmission Consultant**
- Model RFP for selection of **Legal Adviser**
- Model RFP for selection of **Financial Consultant-cum-Transaction Adviser**

Way forward

- Reinforce the enabling environment for private investment
- Adopt **standardised** documents for accelerating investment flows & for ensuring **safe and competitive** delivery
- **Leverage** budgetary resources & multi-lateral loans for PPPs
- Accelerate the **roll-out** of PPP projects
- Objective is to create **world class transmission systems**

Thank You

*For further details please visit
<http://infrastructure.gov.in>*