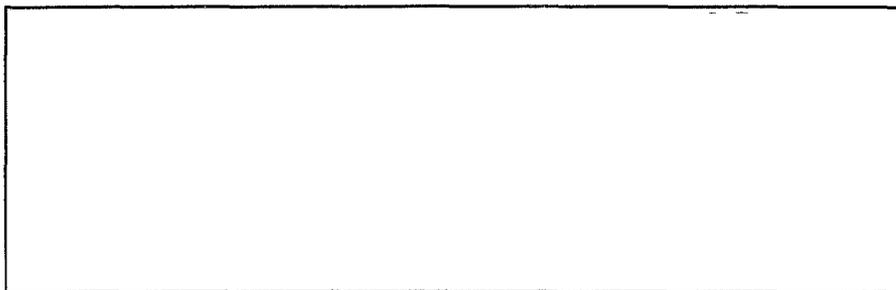


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**Support for Economic Growth
and Institutional Reform
(SEGIR)**

**CLIN #0002
LEGAL AND INSTITUTIONAL REFORM**

Contract No PCE-I-00-97-00038-00

Submitted to

U S Agency for International Development

Submitted by

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A

India Infrastructure Needs Assessment

Final Report

Submitted to

Ms Madhumita Gupta, COTR
USAID/India

Submitted by

ARD/CHECCHI LIR Consortium

Delivery Order # 801 Needs Assessment to Define USAID Assistance to Increase Private Sector
Investment in India's Infrastructure through Market-Friendly Policy and Regulatory Framework
under USAID Contract No PCE-I-00-97-00038-00
Support for Economic Growth and Institutional Reform (SEGIR)
Legal and Institutional Reform Component

13 April 1998

Table of Contents

Abbreviations and Acronyms	1
----------------------------	---

SECTION 1 EXECUTIVE SUMMARY AND OVERVIEW

Table of Contents

Abbreviations and Acronyms	1
1 0 Executive Summary	1
2 0 Overview	22

Annexes

- Annex 1 Team Members
- Annex 2 List of Principal Persons Met
- Annex 3 List of Principal Documents

SECTION 2 THE POWER SECTOR

Table of Contents

Abbreviations and Acronyms

Power Sector Summary	1
1 0 Introduction	1
2 0 State of Power Sector and Investment Needs	5
3 0 Review of Private Sector Participation	13
4 0 Constraints on Private Sector Participation and Recommendations	17
5 0 Recommendations for USAID's Technical Assistance Program	39

Annex 1 Private Power Projects in India

SECTION 3 THE ROADS SECTOR

Table of Contents

Abbreviations and Acronyms	1
1 0 State of Sector and Improvement Needs	1
2 0 Review of Private Participation	3
3 0 Constraints on Private Sector Participation	7
4 0 Recommendations for USAID Interventions	13

Annexes

- Annex 1 Salient Features of the Government of India Policy on Private Sector Participation on National Highways
- Annex 2 Mission Statement of NHAI
- Annex 3 MOST Assessment of Development Needs On National Highways up to 2010
- Annex 4 List of BOT Projects on NHs Already Contracted Out to Private Investors
- Annex 5 Narmada Bridge on NH 8 in Gujarat
- Annex 6 Thane-Bhiwandi Bypass on NH 3 and 4 in Maharashtra
- Annex 7 Bangalore-Mysore Infrastructure Corridor in Karnataka
- Annex 8 Security for Loans to Concessions Based on Tolls
- Annex 9 Constraints and Proposed USAID Interventions
- Annex 10 Choice of State for USAID Intervention

SECTION 4 THE PORTS SECTOR

Table of Contents

Abbreviations and Acronyms	1
1 0 State of Infrastructure and Improvement Needs	1
2 0 Review of Private Sector Participation	5
3 0 Constraints on Private Sector Participation	17
4 0 Recommendations for USAID Involvement	23
Annex 1 Private Participation in India's Ports Sector Constraints and Proposed USAID Interventions	

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Abbreviations and Acronyms

ADB	Asian Development Bank
AEC	Ahmedabad Electricity Company
AIMTC	All Indian Motor Transport Congress
AITD	Asian Institute of Transport Development
APSEB	Andhra Pradesh Electricity Board
ARD	Associates in Rural Development
BEST	Brihanmumbai Electricity Supply and Transport Undertaking
BLT	Build-Lease-Transfer
BOT	Build-Operate-Transfer
BOOT	Build-Own-Operate-Transfer
BSES	Bombay Suburban Electricity Supply Undertaking
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CIDA	Canadian International Development Agency
CPU	Council of Power Utilities
CRISIL	Credit Rating Information Services of India, Limited
DBFO	Design-Build-Finance-Operate
DOF	Department of Finance (State)
DRC	Depreciated Replacement Cost
DSM	Demand Side Management
DVB	Delhi Vidyut Board
ESA	Electricity Supply Act
FHWA	Federal Highway Administration
FICCI	Federation of Indian Chambers of Commerce and Industry
FPA	Fuel Purchase Agreement
GAIL	Gas Authority of India, Ltd

GEB	Gujarat State Electricity Board
GOI	Government of India
GRIDCO	Grid Corporation of Orissa Ltd
HSEB	Haryana State Electricity Board
HVDC	High Voltage Distribution System
ICICI	Industrial Credit and Investment Corporation of India Ltd
IDBI	Industrial Development Bank of India
IDFC	Infrastructure Development Finance Company Ltd
IEA	Indian Electricity Act
IFC	International Finance Corporation
IFCI	Industrial Finance Corporation of India Ltd
ILFS	Infrastructure Leasing & Financial Services Ltd
IPP	Independent Private Power
ISO	Independent System Operators
JNPT	Jawaharlal Nehru Port Trust
KEB	Karnataka Electricity Board
KNT	Karnataka
KNTPWD	Karnataka Public Works Department
KPC	Karnataka Power Corporation
LOE	Level of Effort
MDR	Major District Roads
MOF	Ministry of Finance (National)
MOP	Ministry of Power
MSEB	Maharashtra State Electricity Board
MOST	Ministry of Surface Transport
MOU	Memorandum of Understanding
MW	Megawatt
NH	National Highways

NHAI	National Highway Authority of India
NHPC	National Hydro Power Corporation
NTPC	National Thermal Power Corporation
OECF	Overseas Economic Cooperation Fund
OERA	Orissa Electricity Reforms Act
ONGC	Orissa Natural Gas Corporation
OSEB	Orissa State Electricity Board
PFC	Power Finance Corporation
PGC	Power Grip Corporation
PPA	Power Purchase Agreement
PWD	Public Works Department
RBI	Reserve Bank of India
REC	Rural Electrification Corporation
RITES	Railways Investment and Technical Services
RFP	Request for Proposal
RFQ	Request for Qualification
RSEB	Rajasthan State Electricity Board
SEB	State Electricity Board
SERC	State Electricity Regulatory Commission
SH	State Highways
TEC	Tata Electricity Companies
TecEcon	Name of a Consulting Firm
TIDCO	Tamil Nadu Industrial Development Corporation
U K	United Kingdom
UPSEB	Uttar Pradesh State Electricity Board
USA	United State of America
USAID	United States Agency for International Development
WBSEB	West Bengal State Electricity Board

India Infrastructure Needs Assessment

SECTION 1

Executive Summary and Overview

Prepared by

Gabriel Roth

India Infrastructure Needs Assessment
Executive Summary and Overview

Prepared by

Gabriel Roth

Table of Contents

Abbreviations and Acronyms	1
1 0 Executive Summary	1
1 1 Introduction	1
1 2 General Constraints	1
1 3 Sectoral Constraints	2
1 3 1 Power	2
1 3 2 Roads	9
1 3 3 Ports	15
1 3 4 Summary	21
1 4 Strategy for Assistance	21
1 5 Counterparts	21
2 0 Overview	22
2 1 Introduction	22
2 2 Private Sector Involvement in “Infrastructure”	23
2 2 1 The Power Sector	23
2 2 2 The Roads Sector	24
2 2 3 The Ports Sector	25
2 3 Targeting Strategy for USAID Central or State Level?	26
2 4 Multi-sector Regulatory Agencies	26
2 5 Counterparts	27
Annexes	
Annex 1 Team Members	
Annex 2 List of Principal Persons Met	
Annex 3 List of Principal Documents	

Abbreviations and Acronyms

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AIMTC	All Indian Motor Transport Congress
AITD	Asian Institute of Transport Development
APSEB	Andhra Pradesh State Electricity Board
ARD	Associates in Rural Development
BLT	Build-Lease-Transfer
BOOM	Build-Own-Operate-Manage
BOOT	Build-Own-Operate-Transfer
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
DOF	Department of Finance (State)
FICCI	Federation of Indian Chambers of Commerce and Industry
FHWA	Federal Highway Administration
GAIL	Gas Authority of India Ltd
GOI	Government of India
IDFC	Infrastructure Development Finance Company
ISO	Independent System Operators
KEB	Karnataka Electricity Board
KNT	Karnataka
KNTPWD	Karnataka Public Works Department
LOE	Level of Effort
MOF	Ministry of Finance (National)
MOST	Ministry of Shipping and Transport
NH	National Highways
NHAI	National Highways Authority of India
NHPC	National Hydro Power Corporation
ONGC	Orissa Natural Gas Corporation
PFC	Power Finance Corporation

PGC	Power Grid Corporation
PPA	Power Purchase Agreement
PWD	Public Works Department
SEB	State Electricity Board
SERC	State Electricity Regulatory Commission
SH	State Highways
TIDCO	Tamil Nadu Industrial Development Corporation
USA	United States of America
USAID	United States Agency for International Development

5

1.0 Executive Summary

1.1 Introduction

India's economic development is being retarded by the poor condition of its infrastructure. According to *The India Infrastructure Report*, investments of the order of \$350 billion are required in India's infrastructure over the next 10 years. Because of financial constraints in the public sector, much of the required investment has to come from the private sector. The private sector, however, has invested only a small fraction of the resources necessary for the healthy development of India's infrastructure.

The United States Agency for International Development (USAID) commissioned the consultants, ARD/Checchi, to investigate three infrastructure sectors in India: power, roads, and ports. For each sector, the consultants were required to

- document the adequacy of the infrastructure and the extent of private sector investment,
- identify constraints to greater private sector investment, and
- identify activities suitable for USAID to relieve these constraints.

1.2 General Constraints

The consultants noted some well-known impediments to private investment in India's infrastructure such as

- private sector firms being invited to invest in accordance with governmental priorities, rather than with their own,
- governmental predilections for tariff regulation,
- governmental preference for private investment in new projects rather than for improving the operations of existing ones, and
- dearth of officials competent to negotiate contracts with the private sector.

However, these general issues were not considered by the consultants to be suitable for interventions by outside agencies such as USAID. The consultants therefore focused their attention on constraints in the three sectors selected for their review.

1.3 Sectoral Constraints

The consultants identified major issues constraining private investment in the power and roads sector, and suggested substantial programs for technical assistance for these sectors at both central and state levels. They found no dominant issue constraining investment in the ports sector, but recommended some technical assistance for this sector also.

1.3.1 Power

The dominant issue identified in the power sector was the need to restructure the State Electricity Boards (SEBs) and transform them into corporations strong enough to attract equity capital and debt financing.

Such a transformation could require “unbundling” (i.e., breaking up the SEBs into suitable components, such as generation, transmission, and distribution companies—some of which could compete against one another, possibly by utilizing common transmission grids offering “markets” in electricity, with prices designed to balance supply and demand at any time). Unbundling would require much preliminary work, including the design and implementation of new regulatory systems to protect consumers served by commercial monopolies and to ensure that providers have sufficient funds to meet statutory obligations.

Recommendations for USAID technical assistance are summarized in Table 1, which lists 18 technical assistance activities requiring 256 staff months. Topics to be covered include

- design of legal and regulatory systems,
- financial implications of unbundling,
- policies and exploration of opportunities for private investment,
- power pooling and grid management,
- fuel issues and policies for coal and natural gas,
- improvement of billing and collection arrangements,
- procurement and bidding practices, and
- high-voltage transmission from power plants in the vicinity of coal mines

1

Table 1

Recommendations for USAID Technical Assistance for the Power Sector
 LOE Level of Effort

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p>Legal and Regulatory Transparency</p> <p>TA 1 Implementation of a State Electricity Regulatory Commission (SERC)</p>	<p>To establish an independent Regulatory Commission for tariff setting, customer protection and dispute resolution</p> <p>The general areas of proposed regulatory responsibility are the following</p> <p>Economic Regulation</p> <ul style="list-style-type: none"> • Distribution tariffs • Rate design • Financial analysis • Investment approval <p>Technical Regulation</p> <ul style="list-style-type: none"> • Licensing & Permits • System Performance • Technical Standards 	<p>A</p>	<p>30</p>	<p>Option 1 APSEB Option 2 KEB</p>

8

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
TA 2 Rules and Regulations for Central Electricity Regulatory Commission (CERC)	<p>Customer Service Regulation</p> <ul style="list-style-type: none"> • Quality of Service • Complaints • Consumer Protection <p>The purpose of this technical assistance is to streamline the overlapping regulatory functions between the central and state governments</p> <p>To develop a comprehensive policy for the jurisdictions of the central and state governments in the areas of</p> <ul style="list-style-type: none"> • Fuel import policies • Transmission sector participants • Power sector coordination • Policy support • Fuel transportation issues • Full divestment issues • Concession Agreements • Policy definition of social objectives such as rural electrification programs, agricultural tariffs and life-line rates 	B	40	MOP and CEA

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
TA 3 Model Bidding Documents for Generation, Transmission, and Distribution projects for private sector participation (BOO, BLT, BOOM, BOOT) and Concession contracts incorporating country risks for the fuel, transportation, and dispute resolution processes	To develop Bidding Documents of international standards and norms for the central and state agencies in the following areas <ul style="list-style-type: none"> • Distribution Joint-Venture projects • Concession contracts • Transmission BOT agreement • Fuel supply and transportation agreements • Others 	A	20	Reforming SEB (APSEB and KEB) and/or NTPC
Project Financing and Capital Mobilization				
TA 4 Conduct a Benchmark study for the SEBs	Perform the Benchmark study to illustrate Indian SEBs' technical, financial, and personnel productivity in comparison to international <i>best practices</i>	A	10	Option 1 Use KEB as sponsor of the study Option 2 Use APSEB as sponsor of the study
TA 5 Tariff reform and rationalization study	To improve SEBs creditworthiness	A	20	APSEB or KEB

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p>Opportunities For Private Sector Participation in Power Projects</p> <p><i>Green-field Projects</i></p> <p>TA 6 Assist state government in LNG terminal project and gas distribution feasibility study</p> <p>TA 7 Study for the planning of short-term and long-term fuel-linkage for power sector - coal, natural gas, imported LNG, petrol-coke, etc</p> <p><i>Rehabilitation and Modernization Projects</i></p> <p>TA 8 Model LROT projects documentation</p> <p>TA 9 Model condition assessment study for the LROT project</p>	<p>LNG will be a major source for power generation and gas utilization in the industrial sector in Tamil Nadu Objective is to rationalize the import of LNG and distribute gas optimally</p> <p>To develop a comprehensive fuel policy for the next generation of power sector projects</p> <p>To provide technical assistance to PFC, SEBs NTPC, and NHPC to develop comprehensive policies for private sector investment in existing facilities</p> <p>To estimate the cost/benefit of power plant residual life extension and rehabilitation</p>	<p>A</p> <p>B</p> <p>A</p> <p>A</p>	<p>30</p> <p>15</p> <p>8</p> <p>15</p>	<p>TIDCO</p> <p>MOP/GAIL/Coal India/ ONGC</p> <p>NTPC, NHPC, PFC</p> <p>APSEB or KEB</p>

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<i>Transmission Related Projects</i>				
TA 10 Preparation of joint-venture transmission projects Bid Document, model concession contract, model power wheeling contract, etc , for institutional capacity building of SEBs and PGC	To improve the quality and completeness of transmission projects' Bid Documents for the private sector	A	10	APSEB and PGC
TA 11 Grid code and Independent system operator's guidelines	To provide comprehensive policies and guidelines for the IPPs, Distribution utilities, PGC, NTPC, NHPC, and SEBs generating units dispatch rules and regulations	A	5	APSEB or KEB
TA 12 Power Pooling and Settlement Agreement	To settle contractual payment agreement on a 24-hour basis	B	5	APSEB or KEB
TA 13 Regional (inter-states) and international (Nepal, Pakistan, Bangladesh and Bhutan) power market development issues and options evaluation	To develop regional power market to reduce the over-burdens of coal-fired power plants in India	C	15	MOP
TA 14 Evaluation of benefits of transmission investment for mine-mouth coal-fired power plants	To mitigate the risk of coal transportation and transportation of 40% ash to remote power plants	B	5	MOP

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p><i>Introduction of Market Competition</i></p> <p>TA 15 Develop bulk-power market, power wheeling and transmission pricing for electricity banking, wheeling and third-party sale</p> <p><i>Distribution Utilities</i></p> <p>TA 16 Computerize distribution assets management program</p> <p><i>Institutional Capacity Building of Public Sector Entities (SEBs, MOP, CEA, NTPC, PGC, NHPC, CERC, etc)</i></p> <p>TA 17 Seminars on Procurement and international practices by bilateral lending agencies</p> <p>TA 18 Seminars on power projects (generation, transmission and distribution) financing mechanism (non-recourse project financing) and competition for private sector investments</p>	<p>To introduce competition in the bulk-power market This will also make financing of IPPs much more viable</p> <p>Asset management is the prerequisite for asset valuation and private sector participation in distribution utilities for joint-venture and concession contracts</p> <p>Capacity building of SEBs' procurement personnel</p> <p>Capacity building of central and state agencies</p>	<p>B</p> <p>A</p> <p>B</p> <p>B</p>	<p>5</p> <p>15</p> <p>4</p> <p>4</p>	<p>NTPC, NHPC, PGC and SEBs</p> <p>Option 1 KEB Option 2 APSEB</p> <p>All SEBs, MOP, CEA, NTPC, etc</p> <p>All SEBs, MOP CEA NTPC etc</p>

132 Roads

Most current discussion of road financing in India assumes that private sector investment has to be in the provision of new facilities, financed by tolls. Some of the recommendations for USAID technical assistance are designed to help the completion of such toll facilities already programmed.

However, the dominant issue identified in the roads sector was the virtual absence of mechanisms (such as dedicated road funds and "shadow tolls") to enable streams of revenues from road users, outside of government budgets, to be used exclusively to pay for road provision. In the absence of such mechanisms, private investors in road improvement have to rely on government guarantees for repayment. Some of the recommendations for USAID technical assistance are designed to address this issue by exploring the possibilities of payments by road users, other than by conventional tolls, being dedicated to the repayment of specific investors and lenders. Such mechanisms could make roads "bankable" without the need for government guarantees.

Recommendations are also made for USAID assistance to explore the possibilities of India's governmentally run roads being put on a commercial basis, in the manner of telecommunications and other public utilities. Commercialization of public sector roads, which has recently been proposed for New Zealand, would be consistent with *The India Infrastructure Report* and with the latest World Bank recommendations. The commercialization of India's public sector roads would remove a major constraint to private sector investment competition from governmental "free" roads.

Recommendations for USAID technical assistance are summarized in Table 2, which lists 18 technical assistance activities requiring 711 local staff months and 187 foreign staff months.

Table 2
Recommendations for USAID Technical Assistance for the Roads Sector

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
<p>1 Removing Institutional Constraints to private sector participation by strengthening public and private in particular, removing the lack of institutions at the Union & State level capable of conceptualizing and managing private participation in the road sector</p>	<p>NHAI Mission Work Program Staff Consultancy by Indian management consultancy firm with foreign advisers to assist in</p> <ul style="list-style-type: none"> • Preparation of a strategy of devolution of authority over National Highways (NHs) from the Ministry of Surface Transport (MOST) to the National Highways Authority of India (NHAI) • Preparation of a 5 year work program (1998 - 2003) for NHAI for maintenance operations, improvement and development of NHs under NHAI authority • Implementation of the work program including execution of suitable training programs <p>The consultancy should pay particular attention to increasing opportunities for the participation by the private sector in NHAI work to support NHAI s policy of operating with a small establishment and relying primarily on consultants contractors and entrepreneurs Also interactions with the US Federal Highway Administration (FHWA)</p>	<p>MOST & NHAI</p>	<p>12 / 12 / 0 10 / 6 12 / 12 / 0 10 / 6 20 / 10 / 0 20 / 60</p>	<p>Establishment and efficient operation of a program and a national agency oriented to effective private participation in the road sector and to be a window to the states</p>
<p>2 Removing Procedural (Legal, Administrative and Project Services) Constraints by removing the constraint of</p>				
<p>a) lack of procedures for studies and bidding and standard documents to solicit and contract private participation in the road sector at the national level and in Karnataka and lack of widespread knowledge</p>	<p>a) Documentation Tendering and Execution of Sample Projects (NHAI and Karnataka) Consultancies by a group of Indian civil engineering firms working with a small team of foreign advisers</p> <p>(i) to prepare engineering documentation including designs and cost estimates to the degree of accuracy required for the effective and transparent solicitation and comparison of proposals from the private parties, to build and operate and recover costs on the</p>	<p>NHAI & KNT-PWD</p>		<p>Establishment at NHAI and at Karnataka PWD and in India s private sector of the capacity to prepare and execute road projects and road maintenance with</p>

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
of these procedures and documents at the lower levels of government	<p>basis of tolls for</p> <ul style="list-style-type: none"> • two bypasses (each not less than 10 km long) • two major bridges (each not less than 300 m long) • two railway overpasses or road fly-overs • one section of widening from 7 Om to 14 Om (not less than 30 km long) <p>The selected projects should be located one each on NHs and SHs in Karnataka except for the widening which will be a SH in Karnataka and the NHs should be located preferably in</p> <ul style="list-style-type: none"> • States with major foreign aided road restructuring programs, and • States with backward levels of development <p>The documentation to be developed should include a complete financial analysis to show revenues likely to be generated from tolls other sources of financing (including subsidy) and cash flows detailing funds as and when required for construction interest and operations (including fee collection and maintenance) The consultancy should also include preparation of elements for a standard concession agreement drafted in collaboration between Indian and foreign legal experts and relevant financial institutions</p> <p>(ii) to assist NHAI and Karnataka PWD in tendering, contract award and execution of the projects</p> <p>(iii) to assist in dissemination of the above procedures and documentation to various levels of government in</p> <ul style="list-style-type: none"> • Karnataka • States with major externally aided road program • Other states <p>Dissemination would be achieved through conferences, seminars and training courses</p>	<p>NHAI & KNT- PWD NHA</p>	<p>50 / 3 / 0 15 / 6 65 / 3 / 0 20 / 6 20 / 1 / 0 10 / 6 100 / 9 / 0 20 / 6</p> <p>360 / 96 / 0 80 / 48</p> <p>- / - / 0 40 / 24 (lump sum)</p>	private participation

16

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost/ Mo Duration	Expected Outcomes
b) lack of procedures for road maintenance by contract	b) Contract Maintenance - NHAI and Karnataka Consultancy by an Indian civil engineering firm with a foreign adviser <ul style="list-style-type: none"> i) to assist in preparation of suitable documents for routine and periodic maintenance of private parties contracted by NHAI for NHs not under a toll regime and State of Karnataka for SHs for tendering contract award and execution of such maintenance and ii) to assist in dissemination of contract maintenance procedures 	NHAI & KNT-PWD	12 / 6 / 0 20 / 6	Establishment of contract road maintenance at NHAI and other road agencies in India
c) multiple clearances for undertaking road projects with private participation	c) Streamlining Clearances Consultancy by an Indian expert to examine the various statutory and other clearances required for undertaking road projects and to make recommendations on streamlining these procedures	NHAI & KNT-PWD	6 / - / 0 10 / 3	Simplification and acceleration of clearances for road projects
d) lack of facilities providing road building machinery on rental basis	d) Road Equipment and Rental Firms Consultancy by an Indian civil engineering firm working with a foreign adviser to assist in establishment of firms to provide road building machinery to contractors on rental basis	NHAI & IDFC	12 / 2 / 0 10 / 6	Establishment of firms to provide road building machinery on rental basis
e) overloaded vehicles burdening the efficient use of roads particularly roads with private participation	e) Overloaded Vehicles Consultancy by an Indian civil engineering firm working with an Indian management consultancy firm and a foreign adviser to review existing studies and recommendations on vehicle over loading and introduction of multi-axle vehicles (especially in relation to container movements) to examine and recommend on various methods and programs to reduce the number and better manage the problems related to illegally overloaded vehicles on NHAI roads particularly those contracted to private parties	NHAI & AITD	6 / 6 / 0 10 / 6	Improvement of management of problem of overloaded vehicles
3 Removing Financing Constraints by developing financial means for private participation in the road				

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
sector and by fostering commercialization of roads, in particular				
a) lack of an assured source of governmental financing for road projects with private participation	a) Road Funds and Shadow Tolls Consultancy by an Indian and a foreign expert to identify and develop governmental means and current strategies for support of private participation in road infrastructure such as dedicated road funds and dedicated road revenues and to specify means and methods for commercializing roads. The consultancy would also include examination of such issues as management of the road funds on commercial principles, establishment and operation of road boards and setting up of permanent count stations as a basis for traffic information systems and shadow tolls and electronic pricing. The consultancy would examine these issues for India at the Union level and for Karnataka at the State level	MOST & MOF KNT- PWD & DOF	12 / 12 / 0 30 / 6	Increased knowledge and acceptance by private sector particularly road sector, for funding of roads on commercial basis and for private participation in road sector
b) lack of legal documentation to provide credit worthy concessions	b) Lending for Concessions Intermittent consultancy by Indian and foreign experts in law and finance to advise on legal and credit worthiness issues related to award of concessions to private entrepreneurs for road infrastructure and on policy issues related to private participation in road sector	IDFC & NHAI	12 / 9 / 0 45 / 36	Development of procedures for security to financial institutions that lend to private entrepreneurs for concessions
c) lack of private capital for roads because of lack of knowledge by public and private entities directly concerned with building and maintaining roads on basis of private participation in road sector	c) Dissemination of Private Participation Practices Consultancy by Indian training firm to develop seminars (three per year for three years) for individuals in the public and private sectors to familiarize them with procedures and requirements for private participation in infrastructure together with fellowships of public sector participants	IDFC & FICCI	- / - / 0 20 / 36	Increased knowledge and acceptance in public and private entities of private participation in road sector
d) inadequate funding for	d) Improved Awareness about Good Roads	FICCI &		Development of

18

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
<p>roads because insufficient knowledge and consciousness concerning road financing issues due to lack of</p> <p>i) statistical base and policy framework on expenditure and financing for Indian road sector in the context of increasing private participation in road sector and</p> <p>ii) consciousness by road users particularly commercial users of role of private participation in the road sector</p>	<p>Consultancy by an Indian firm supported by foreign experts</p> <p>i) to develop in the context of increasing private participation in the road sector a statistical base and policy framework related to the patterns of expenditure and financing sources and of transport and service capacity for Indian road sector in general and for Karnataka road system in particular</p> <p>ii) to develop increased consciousness of the role of private participation in the road sector through</p> <ul style="list-style-type: none"> • seminars for members of chambers of commerce road transport associations and the other private sector organizations • interactions with FHWA and NGO s in the US such as the American Trucking Associations and American Highway Users Alliance including professional exchanges and familiarization and technical visits 	AIMTC	<p>12 / 6 / 0 20 / 6</p> <p>- / - / 0 40 / 36</p>	increased consciousness for private participation in the road sector

133 Ports

No dominant constraints on private investment were identified in the complex port sector. The consultants suggested new legislation and model concession agreements to improve the investment climate in the sector. They recommended that the existing "Trust Ports," which tend to employ governmental labor forces, be transformed over time into "Landlord Ports" which subcontract activities to private concessionaires while leaving overall control in government hands. Weaknesses in port administration were identified at the state level, and recommendations were made for technical assistance to strengthen port administration in Karnataka and Andhra Pradesh.

Recommendations for USAID technical assistance are summarized in Table 3, which lists 10 technical assistance activities requiring 9 staff months.

Table 3
Recommendations for USAID Technical Assistance for the Ports Sector

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
No policy constraint but lack of an objective and transparent approach to privatization transactions. New policy is formulated in directives, still rather restrictive.	Change in administrative culture, which may be encouraged by commercialization and corporatization of present port trusts.	Advice in port policy as requested by MOST.	MOST	None. Action does not lend itself to such an objective.
The enactment of a new user-friendly Act to promote private participation in the development of ports is overdue. Trust ports are at present service ports, conducting port operations on force account, and statutory corporations with regulatory jurisdiction. They should in future be landlord ports, not conducting operations directly, and commercial corporations under company law. Since the transformation in landlord ports will take time, trust ports will compete with their own lessees and concessionaires.	Careful preparation of new legislation. A Committee has been appointed in MOST. The consolidation of the 1908 Ports Act and of the 1963 Trust Ports Act is considered which seems to raise suspicion in state ports that the Central Government may increase the number of its own trust ports.	Technical assistance (better formulated as consultation) to help MOST to take a broad and innovative view of the issues.	MOST	Elaboration of new legislation within one year.
The Tariff Authority was established at the request of ADB and of private parties, these suspect that, when Trust Ports operate in competition with their own				As above

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
<p>terminals, they may manipulate tariffs under their control to the detriment of lessees and concessionaires. The 1997 Ordinance to amend the Major Port Trusts Act gives extensive powers to the Tariff Authority to fix the frame and rates of tariffs. The Government may at any time supersede the Authority's decisions and/or give it policy directions. The establishment of the Tariff Authority restricts the autonomy of existing Port Trusts and increases centralization by the recourse to an additional bureaucratic decision-making level. ADB-financed technical assistance to the Tariff Authority may encourage the development of a huge regulatory body which has already given evidence of its desire to extend its jurisdiction to all port activities and management.</p> <p>Revision of the approach to tariff fixing Lessees, port trusts, and concessionaires should propose their own tariffs to be applicable as ceilings over a covenanted period of time. Approval should be implicit, with the Tariff Authority, making formal intervention if needed, only when they disagree with the proposed tariffs.</p>				
<p>Existing bid documents and concession contracts contain unacceptable clauses, such as those regarding tariffs termination, ownership and transfer of assets, etc. These documents are not bankable. This seems to be due to a lack of familiarity with concessions, which may have led MOST to accept less than adequate documents prepared by consultants.</p>	<p>Revision of existing documents on concessions</p>	<p>Advice and consultation on documents</p>	<p>MOST, local lawyers, private sector</p>	<p>Production of acceptable documents within one year</p>

27

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
Directives on private sector participation are restrictive regarding dock labor. Dock labor problems are only partly solved, despite being known as one of the main causes of the insufficient productivity of Indian ports.	Continue reform port labor	None	MOST	An internal and highly political issue. At best, Government attention may be brought to the problem as an essential one.
Lack of clarity regarding financing by the private sector of heavy and lumpy investments such as breakwaters and wharves, as opposed to superstructure and equipment. Status of finance in port sector unclear with some ports having sizable reserves. Wording of present concessions and lease agreements reveal a rent-seeking attitude from port trusts.	Clear rules applicable to port finances and investments should appear in new legislation.	Advice in drafting legislation. Advice in fixing financial objectives of trust ports to rent-seeking. Advice on taxation and possible dividend payments by trust ports.	MOST	Insertion of clear and modern financial clauses in new legislation.
Weak public port administration in Andhra Pradesh and Karnataka.	Training and technical assistance.	One strongly structured port sector management course, with didactic material. If resources permit, technical assistance visits at intervals.	State Port Agency and Chamber of Commerce.	Course within 18 months.

123

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
<p>Major ports prepare detailed feasibility studies of proposed concessions and make them available to bidders for preparing bids. State governments leave this to the bidders themselves. This results in poor response as bidders are reluctant to spend large sums of money at the bidding stage.</p>	<p>Training of state government staff and elaboration of project preparation manuals.</p>	<p>Assistance in writing manual.</p>	<p>same</p>	<p>Manual to be issued within 18 months.</p>
<p>Indian port staff are notably absent from international port training courses and seminars or international gatherings.</p>	<p>Presence of selected staff, mainly from middle management, to such courses and seminars.</p>	<p>Sponsoring and financing.</p>	<p>MOST and Ports.</p>	<p>Admission to International Maritime Organization Management Course. At least 4 trainees/year in different courses.</p>

24

1 3 4 Summary

The recommended technical assistance effort is summarized in the following table

Sector	Dominant Constraint	Technical Assistance Effort
Power	Financial weakness of State Electricity Boards	256 staff-months
Roads	Absence of financial mechanisms to make most roads "bankable"	711 local staff-months 187 foreign staff-months
Ports	None	9 staff-months
Total		711 local staff-months 452 foreign or local staff-months

1 4 Strategy for USAID Assistance

The consultants recommend that USAID technical assistance be focused on the most "advanced" states in order to get the speediest results which, if successful, could be replicated by other states. The states recommended for assistance are Karnataka, with some activities in Andhra Pradesh and Tamil Nadu. Assistance at the central level is also recommended. There should be close coordination with other lending agencies, particularly the World Bank and the Asian Development Bank, but operations in the same sectors in the same states is not recommended, as this could lead to duplication of effort which could be wasteful.

1 5 Counterparts

Many counterpart organizations are suggested in the sectoral chapters. The consultants recommend that USAID does not work exclusively with any single agency, but keep its options open and work with any counterpart found appropriate for a specific activity.

25

2.0 Overview

2.1 Introduction

Why does the rate of economic growth vary from country to country? In light of the subject of our inquiry, it would be tempting to assert that the differences are due to inadequacies in infrastructure—in the capital assets that provide the services necessary for a modern economy—and to private sector involvement in infrastructure. Unfortunately, we are unable to prove this. Economic development is a complex process and responds to many stimuli. Adequate infrastructure has a significant role in the process, and so has private sector involvement, but these concepts are difficult even to define.

When is infrastructure “adequate”? Clearly the amounts expended do not provide an adequate measure. High-priority investments can be more useful than low-priority ones, and good maintenance can be the best investment of all. Some investments, such as the railroad in Latin America, which is reported to have carried no traffic except the materials required to extend it, can do more harm than good. This line of reasoning points to the need for an acceptable measure of the quality of an investment in infrastructure.

Public sector investments are often assessed on the basis of benefit/cost ratios, but benefits are particularly hard to quantify and therefore easy to exaggerate. Private sector investments are assessed on the basis of profitability—of financial rates of return to the investors. This measure is widely used in market economies and, in the absence of significant negative effects to third parties, is more reliable than the benefit/cost ratios used by the public sector, as private investors have strong incentives to obtain correct forecasts of profitability. It is also a conservative measure, as it takes no account of benefits to consumers.

It follows, then, that investments assessed on the basis of the measuring rod of profitability are more likely to be associated with economic growth than investments not assessed with this measure. But it is the use of the profitability criterion that is important here, and not the involvement of the private sector *per se*, private investors, if offered sufficient guarantees or other inducements, can be attracted to invest in even the poorest projects.

The use of profitability as an investment criterion is recommended in the comprehensive *India Infrastructure Report* prepared by the Expert Group on the Commercialization of Infrastructure Projects, chaired by Rakesh Mohan, which described *commercialization* as “a new wave, a new necessity” for meeting India’s critical infrastructure needs.

Therefore, the team concentrated its attention on identifying constraints to private sector investment in *profitable* infrastructure projects. It was less concerned with assisting the private sector to support low-return projects that happened to be in official investment programs.

2 2 Private Sector Involvement in “Infrastructure”

While the meaning of “Infrastructure”—the capital assets that provide the services necessary for a modern economy—is generally clear, the team had difficulty in identifying sectoral constraints common to the three sectors being studied—power, roads, and ports. There were, of course, the familiar constraints applying to all sectors of India’s economy (e.g., little understanding of market economies, preference for new projects over maintaining existing ones, shortage of officials competent to interact with private investors), but we did not see how USAID could make significant new contributions to solving these problems. The difficulty we faced was in identifying specific constraints applying to all our selected sectors, each of which faced quite different issues.

- In the *power* sector, the dominant problem is that, as a result of poor management, and of political pressures to provide power below cost, most of the State Electricity Boards are bankrupt and unable to cover their costs out of revenues.
- In the *roads* sector, the problem is the almost complete absence of markets enabling users and providers of roads to interact commercially with one another, thus leaving the sector to be financed out of general revenues.
- We could find no dominant constraint specific to the *ports* sector, and considered the constraints on private investment in that sector less important than in the power and roads sectors.

This report, therefore, includes a separate section for each of our three sectors. This Overview section describes, for each of the sectors, the main constraints to private investment in India and the experience in other countries of successful private sector participation. It shows that, on the basis of international experience, is it not unrealistic to attract substantial private sector investment to India’s power, roads, and ports, provided the main obstacles are faced and dealt with.

2 2 1 The Power Sector

Electric power is a key input to all modern industrial and commercial activity, and to many personal activities as well. Yet the shortage of peak-period generation capacity in India is reckoned by *The India Infrastructure Report* to be 29 percent. This shortfall has to be regarded as a major constraint on the development of India’s economy. Why is the energy gap not filled by the private sector, which has provided power in many developing countries, including India, where the Tata group has been supplying power on a large scale since 1954?

The essence of the problem is that the State Electricity Boards (SEBs), established when the sector was nationalized in 1948, have consistently under-performed and are now bankrupt. In the year 1994-1995, the average rate of return of all SEBs was a negative 15.5 percent. The status of the SEBs discourages private investment in the sector for two reasons:

- First, private investors would be wary of investing in generation facilities in the absence of firm contracts to purchase the power generated. The SEBs, being bankrupt and in debt to other creditors, have difficulty in providing the necessary guarantees.
- Second, the SEBs' pricing structure involves undercharging rural and domestic consumers who typically pay less than 80 percent and 50 percent, respectively, of average costs. To recover some of these losses, industrial and commercial customers, and the railways, are overcharged. Independent power producers therefore, if permitted, would be able to capture much of the SEBs' profitable business and make their situation even worse than it is at present.

It is difficult to see how this situation can be resolved without restructuring the SEBs, requiring them to operate in a commercial manner, and having the subsidies paid by the governments that vote for them.

Commercial operation would allow the development of regional transmission "grids" consisting of transmission networks linking power stations and bulk customers. The power stations and bulk customers could be privately or publicly owned, but all operating under rules which allow them to buy or sell from the grids at prices that equate supply and demand.

SEB restructuring and the commercialization of the electric power industry would require considerable preliminary work. For example, acceptable regulatory systems would need to be in place to ensure that monopolistic suppliers do not take advantage of "captive" customers. This preliminary work would require substantial technical assistance, some of which could be provided by USAID. A program of appropriate technical assistance is detailed in Section 2, The Power Sector.

2.2.2 The Roads Sector

Although the traffic on India's roads has increased about thirty-fold since 1951, its road capacity has only tripled, and 63 percent of its main road mileage (National and State Highways) have one lane only. To this day, there is not one mile of road in India dedicated to the exclusive use of motor vehicles. The need for massive, rapid improvement is evident, but the funds available from general revenues are insufficient.

The Government of India (GOI) is anxious for the private sector to finance at least part of its highway program and encourages the private provision of conventional toll roads, following the example of France, Japan, Malaysia, Spain, and other countries. Section 3, The Roads Sector suggests technical assistance that USAID could provide to remove constraints to their introduction.

Conventional tolls, however, are not suitable for the vast majority of India's roads. A more effective and convenient way of empowering road users to pay for roads would be through dedicated highway funds. In the U.S., more than 30 states have dedicated highway funds financed by charges on road users.

Japan's experience may be instructive after World War II, there was an urgent need for road improvement and new financing systems were sought. A toll road system was established in 1952 but was not sufficient to meet rapidly expanding traffic demands. In 1954, the gasoline tax was set aside as a special funding source for road improvement. Although collected by the national government, half the funds were used for national road works and half for road works executed by the prefectures and other lower governmental levels.

However, monies paid into dedicated road funds can be spent on low-priority projects, and the establishment of such funds does not, in itself, meet the need for "Commercialization" advocated by the Expert Group chaired by Rakesh Mohan. How then might India's roads be commercialized?

Commercialization of roads, which need not necessarily involve privatization, would initially require the conversion of current road management into profit-making road companies, possibly run by boards on which road users would be represented. Such an arrangement has been proposed for New Zealand and is now recommended by the World Bank. An outline of how such commercial road companies might operate is sketched out in the Roads section below, and suggestions are made for USAID technical assistance to explore their possible application in India, at both the central and state levels.

2 2 3 The Ports Sector

India's major ports are characterized by chronic overstaffing and reluctance to take advantage of modern technology. For example, containerized cargo accounts for 38 percent of general cargo, compared to 60 percent or more in other countries. The authorities are reluctant to deal with these problems—particularly the thorny labor problem—but the situation is not as critical as in the power and roads sectors, as there are no insuperable obstacles to the establishment of new ports, especially state ports.

Experience in Argentina and Mexico has shown that it is possible to reform and restructure existing port operations by contracting many of them (e.g., cargo handling and storage) to private concessionaires. Competition can be introduced not only between ports, but even between terminals in the same port. Reforms in the port of Buenos Aires, for example, increased worker productivity from 800 to 3,000 tons per year within the period 1991 to 1995.

Ports are complicated entities, due to the many interests involved in them and to the interfaces between port users, service providers, and governmental responsibilities. The smooth operation of the required relationships depends on appropriate institutional arrangements that are sometimes lacking in India. Thus, a major constraint on private investment in ports is the unsuitability of the present legislation dealing with ports, some of it dating from 1908. Another is the weakness of port administration at the state level—the private sector cannot function well without competent government officials. Recommendations to deal with these subjects are included in the Ports section below, as well as suggestions for technical assistance that USAID could provide at the central and state levels.

2 3 Targeting Strategy for USAID Central or State Level?

Should USAID target its technical assistance at the central or at the state level? If at the state level, should it concentrate on the states that are making the most effort or should it assist the “backward” states? Should it offer to assist different states to improve different sectors, or to improve different sectors in the same state? Should it work in the states that are already assisted by other aid agencies, such as the World Bank and the Asian Development Bank?

In view of the importance and urgency of raising living standards in India, and of the difficulty of introducing the required changes, the team recommends that USAID focus its efforts on the states, rather than the center, so as to have fewer levels of government to deal with. The state(s) to start with should be those most open to reform, subject to the reforms being replicable by other states. This approach would make the most effective use of USAID’s limited resources. Some technical assistance should also be given to central agencies—particularly to the National Highway Authority of India, which is in the process of expanding its area of responsibility.

As to the choice of states, the team was able to visit only four: Maharashtra, Karnataka, Andhra Pradesh, and Tamil Nadu. Of these four, Maharashtra appears to already have ample access to technical assistance, and the World Bank is heavily involved in Andhra Pradesh and Tamil Nadu. The team was favorably impressed by the officials met in Karnataka, by the active interest of the Federation of Karnataka Chambers of Commerce and Industry, by the proposed Bangalore - Mysore Infrastructure Corridor, and by the need to link it effectively to the Bangalore street system. The team therefore recommends Karnataka as the primary state to be the focus of USAID technical assistance at the state level, with some activities also in Andhra Pradesh and Tamil Nadu.

2 4 Multi-sector Regulatory Agencies

The commercialization approach recommended by *The India Infrastructure Report* necessitates strong regulatory mechanisms to protect the interests of consumers while ensuring that producers have sufficient funds to carry out their statutory duties. Separate agencies for each sector (telecommunications, power, etc.) can be set up, but it is also possible to have one agency, at least at the state level, to regulate more than one sector. This arrangement is common in the US, where “Public Utility Commissions” are responsible for statewide regulation.

There is much to be said for this approach, especially where there is shortage of regulatory expertise. Multi-sector regulators are in a position to apply basic principles to different sectors (e.g., roads and telecommunications) and can always employ sectoral experts as necessary. A further advantage of multi-sector regulatory agencies is that they are less likely to be “captured” by the agencies under their supervision.

2 5 Counterparts

The team was asked to recommend “counterparts” with which to work in the provision of technical assistance. Some recommendations have been made, but the team believes it would be in the interest of USAID to avoid exclusive arrangements, and to be open to work with any Indian agency that seems appropriate in particular circumstances.

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India Infrastructure Needs Assessment

SECTION 2

Power Sector

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India Infrastructure Needs Assessment

Power Sector

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Table of Contents

Abbreviations and Acronyms

Power Sector Summary	1
1 0 Introduction	1
1 1 Background	1
1 2 Objective	2
1 3 Study Methodology	2
1 4 Organization of This Report	2
2 0 State of Power Sector and Investment Needs	5
2 1 Introduction	5
2 2 Power Sector Capacity and Demand	5
2 3 Problems Faced by the Power Sector	6
2 4 Alternatives to Additional Generation	7
2 5 Power Sector Status	7
2 5 1 Load Plant Factors	7
2 5 2 Thermal Plants Age Factor	9
2 5 3 Hydroelectric Plants	9
2 5 4 Status of Transmission and Distribution System	9
2 6 Investment Needs	10
3 0 Review of Private Sector Participation	13
3 1 Introduction	13
3 2 Green-field IPP Projects	13
3 3 Transmission Projects	14
3 4 Distribution Projects	14

3 5	Fuel Sector	15
3 5 1	Coal Sector Development and Supply	15
3 5 2	Gas Sector Private Investment	15
4 0	Constraints on Private Sector Participation and Recommendations	17
4 1	Introduction	17
4 2	India's Major Barriers	17
4 3	Power Sector Specific Constraints	18
4 4	Recommendations	21
4 5	Transition Paths	21
4 6	Recommendations Screening Criteria	27
5 0	Recommendations for USAID's Technical Assistance Program	39
5 1	Possible Areas of USAID Technical Assistance	39
5 2	Priority Ranking of USAID's Technical Assistance	41
5 3	Recommendations on Functional Areas For USAID's Technical Assistance	43

Annex 1 Private Power Projects in India

Abbreviations and Acronyms

ADB	Asian Development Bank
AEC	Ahmedabad Electricity Company
APSEB	Andhra Pradesh Electricity Board
BEST	Brihanmumbai Electricity Supply and Transport Undertaking
BOT	Build-Own-Transfer
BSES	Bombay Suburban Electricity Supply Undertaking
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CESC	Calcutta Electricity Supply Company Ltd
CIDA	Canadian International Development Agency
CPU	Council of Power Utilities
CRISIL	Credit Rating Information Service of India, Limited
DRC	Depreciated Replacement Cost
DSM	Demand Side Management
DVB	Delhi Vidyut Board
ESA	Electricity Supply Act
FPA	Fuel Purchase Agreement
GEB	Gujarat State Electricity Board
GOI	Government of India
GRIDCO	Grid Corporation of Orissa Ltd
HSEB	Haryana State Electricity Board
HVDS	High Voltage Distribution System
ICICI	Industrial Credit and Investment Corporation of India Ltd
IDBI	Industrial Development Bank of India
IDFC	Infrastructure Development Finance Company Ltd
IEA	Indian Electricity Act

IFC	International Finance Corporation
IFCI	Industrial Finance Corporation of India Ltd
ILFS	Infrastructure Leasing & Financial Services Ltd
IPP	Independent Private Power
JNPT	Jawaharlal Nehru Port Trust
KEB	Karnataka Electricity Board
KPC	Karnataka Power Corporation
MOP	Ministry of Power
MSEB	Maharashtra State Electricity Board
MW	Megawatt
NHPC	National Hydro Power Corporation
NTPC	National Thermal Power Corporation
OERA	Orissa Electricity Reforms Act
OSEB	Orissa State Electricity Board
PFC	Power Finance Corporation
PGC	Power Grip Corporation
PPA	Power Purchase Agreement
RBI	Reserve Bank of India
REC	Rural Electrification Corporation
RITES	Railways Investment and Technical Service
RFP	Request for Proposal
RFQ	Request for Qualification
RSEB	Rajasthan State Electricity Board
SEB	State Electricity Board
TEC	Tata Electric Companies
USAID	United States Agency for International Development
UPSEB	Uttar Pradesh State Electricity Board
WBSEB	West Bengal State Electricity Board

Power Sector Summary

Background

The perception that India is the jewel in the crown for private power developers can be easily construed by the fact that there are 70,659 MW of potential IPP schemes now being sought after by the private sector. If all proposals were to bear fruit, India's capacity would be heading toward 150,000 MW by the millennium. The reality is that only a handful of independent private power (IPP) producers are being developed in India, led by the controversial Enron-backed Dabhol naphtha-cum-LNG project in Maharashtra. Only 513 MW of IPP capacity has been commissioned since India first announced its power sector reform program in 1991. But the fact that 128 projects have been identified and 96 have reached Memorandum of Understanding (MOU) stage at least serves to underline the private sector's interest in India's power supply program.

A shortage of electricity services, with respect to estimated consumer demand, has been a consistent characteristic of all State Electricity Boards (SEBs) in India. Planning and investment strategies, institutional and regulatory structures, and financing issues have been major failures in many of these SEBs. Ambitious targets for development of the power sector have not been met, while investment consistently lags behind expectations. It is now well recognized that the *private sector* has to play a leading role in the mobilization of infrastructure investment funds if accelerated and efficient growth is to be maintained.

Objective and Outline of this Report

The objective of this study is to identify power sector legal, regulatory, and structural adjustments leading to state and central governments for the purpose of creating the policy, institutional, economic, and sectoral conditions necessary for private sector participation, and to make recommendations for the development of a USAID Mission power sector strategy for technical assistance program.

This report is organized in five sections: a) **Section 1 0** is an introduction which contains the report's objectives and methodology, b) **Section 2 0** addresses the current status of the sector with regards to the investment needs, the legislative and regulatory framework that governs it, and the key sector entities that operate in it, c) **Section 3 0** focuses on private sector participation to date in the areas of green-field generation projects, green-field transmission projects, existing asset sales, and joint-venture distribution projects, d) **Section 4 0** contains a discussion of constraints at the central and state levels that impede private sector investment in India and recommendations for overcoming these barriers, and e) **Section 5 0** contains our recommendations for USAID's technical assistance for removing some of these barriers at the state and central government levels. The following three principal criteria were used to develop the list of technical assistance based on the recommendations of Section 4 0:

- USAID's Comparative Advantages
- Private Sector Impact
- Benefits

Constraints on Private Sector Participation

In general, the study found that the private sector (both domestic and foreign) perceives formidable risks to investment in the power sector **Figure 4 1** illustrates the generic barriers were most often cited, by the private sector and financial institutions, as the principal constraints to private sector ownership and financing of power projects

There is significant variation in the importance of the above constraints across the SEBs and states visited by the study team. Some constraints are more important to address over the long-term and beyond the scope of USAID's technical assistance program. However, the study team has identified the following constraints as critical near-term risks to private sector project development which must be alleviated before substantial private sector participation can proceed

- Lack of SEBs' creditworthiness
- Public sector dominance
- Policy constraints
- Unclear legal and regulatory process
- The limited availability and convertibility of foreign exchange
- Public sector knowledge gap

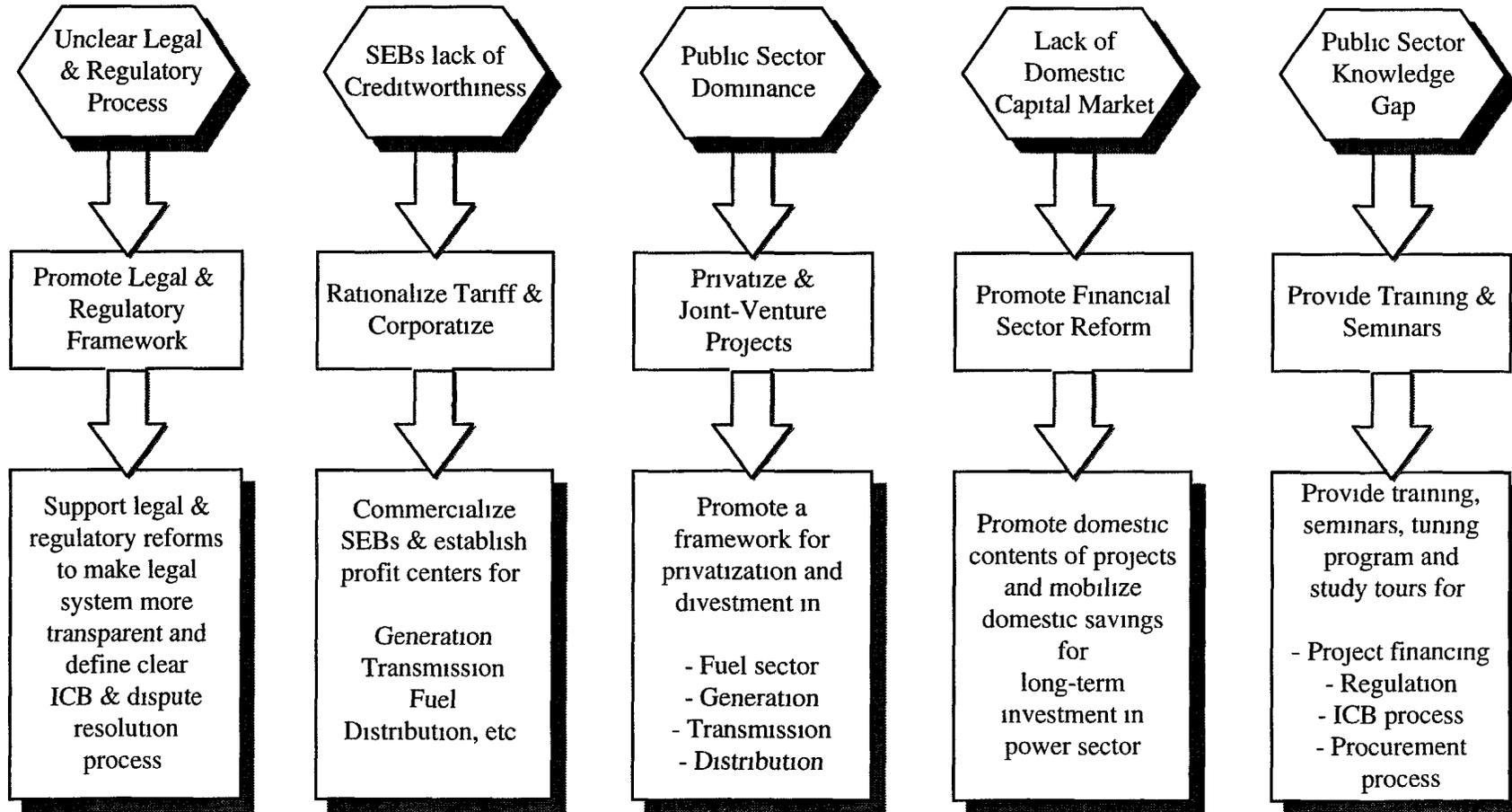
Recommendations for Intervention

Figure 4 4 illustrates all potential areas (generation, transmission, distribution, fuel supply, fuel resource development, rehabilitation and modernization, etc) where USAID's technical assistance may be directed to promote private sector participation

Table 4 2 presents a summary of the recommendations and ranking of USAID's comparative advantage based on its limited resources, power sector development impact, and the counterpart agencies (state and central government levels) where USAID technical assistance would produce the greatest benefit

52

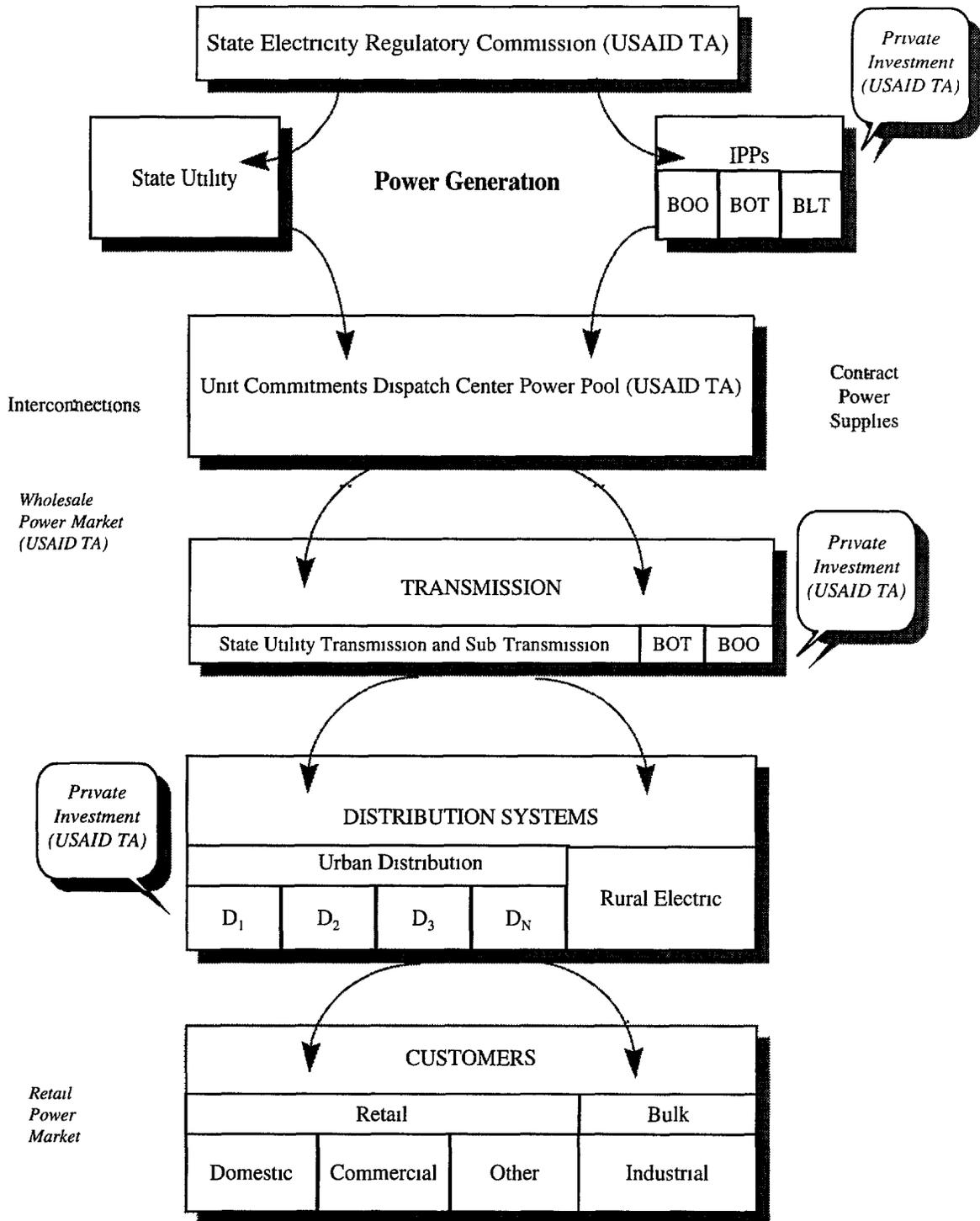
Figure 4 1
Power Sector Recommended Actions For USAID's Technical Assistance
Major Constraints For Private Investment



Short-term and Medium-term Solutions

53

Figure 4 4
 Illustration of Recommended Power Sector Areas
 for USAID's Technical Assistance



**Table 4 2
Summary Recommendations**

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
<p>Legal and Regulatory Assistance</p> <p>a) Provide technical assistance for the implementation of State Electricity Regulatory Commission (SERC)</p> <p>b) Provide technical assistance for the implementation of Central Electricity Regulatory Commission (CERC)</p> <p>c) Provide model bidding documents for Joint-Venture projects (Generation and transmission), Concession Contracts, PPA and FSA</p>	<p>High</p> <p>Medium</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p>	<p>First Option Andhra Pradesh Second Option Karnataka (TOR is included in Annex)</p> <p>MOP and CEA</p> <p>Reforming SEB or NTPC</p>
<p>Project Financing and Capital Mobilization</p> <p>a) Improve SEBs' Creditworthiness</p> <p>Provide technical assistance to measure SEBs technical, financial and personnel performance standards (Benchmark Study) by international "best practices "</p>	<p>High</p>	<p>High</p>	<p>Sponsor 1 APSEB Sponsor 2 KEB</p>

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
<p>Opportunities For Private Sector Participation in Power Projects</p> <p><i>Green-field Projects</i> Assist Tamil Nadu state government (TIDCO) in the LNG terminal project and natural gas pipe-line distribution feasibility study</p> <p><i>Rehabilitation and Modernization Projects</i></p> <p>a) Provide technical assistance for model Bid Documents for full privatization, concession contract and/or LROT contract for existing power plants</p> <p>b) Provide technical assistance for preparation of a model bankable power plant condition assessment report for full privation and/or LROT contract</p> <p><i>Transmission-Related Projects</i></p> <p>a) Provide technical assistance to develop power wheeling and bulk-power transmission pricing mechanism for the PGC services</p> <p><i>Distribution Utilities</i></p> <p>a) Provide technical assistance for tariff reform and agricultural subsidy mechanism study</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>Medium</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>TIDCO</p> <p>NTPC or APSEB</p> <p>NTPC or APSEB or KEB</p> <p>PGC</p> <p>APSEB or KEB</p>

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
b) Develop computerized distribution asset management and asset valuation program which will lead to distribution utility privatization and/or concession contract arrangement	High	High	APSEB or KEB
<p>Market Competition</p> <p>Develop guidelines for the Independent System Operators (ISO), Grid Codes, Power Pooling and Settlement Agreement</p>	High	High	APSEB
<p>Institutional Capacity Building of Public Sector</p> <p>Provide institutional capacity building support for seminars, and training program for the central and state government agencies for dealing with private sector project developers and investors</p>	High	High	APSEB / KEB / MOP/ CEA / PGC

51

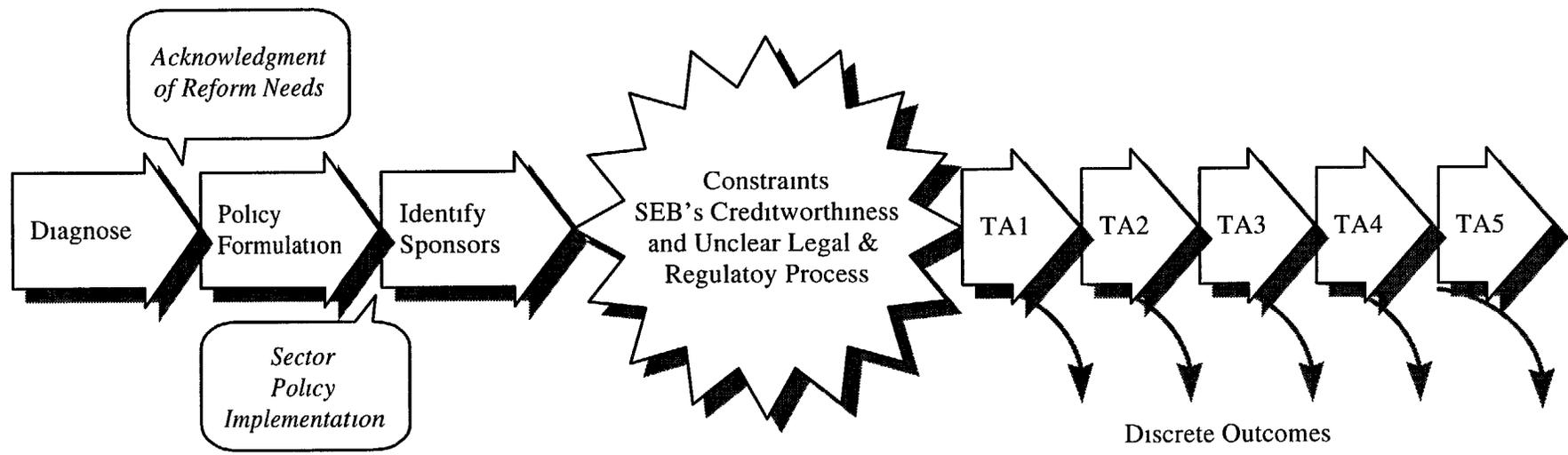
Recommendations for USAID's Technical Assistance Program

There are several ways in which USAID can assist in improving the legal and regulatory policies and institutional framework, hence facilitating the mobilization of funds from private sources and private sector participation in the power sector. USAID is already having a comprehensive dialogue with the Indian government on the policy and institutional reforms in the power and financial sectors (for example FIRE and EMCAT projects) in the context of its operations, economic and sector work. Various institutional and operational options discussed in **Section 5.0** are to be reviewed by the governments (state and central) and USAID, the priorities have to be agreed upon between the two.

Figure 5.1 illustrates an example of USAID's specific role in removing the barrier for private sector investment. It is important to note that various parallel or simultaneous technical assistance will be required to remove all issues related to constraints such as "*Unclear Legal and Regulatory Process*".

Our key recommendations for coordinating technical assistance for all functional areas of the public sector entities (both state and central governments), are summarized in **Table 5.2** for power sector specific institutional development efforts for a) Legal and Regulatory Framework, b) Generation System, c) Transmission System and Market Competition, d) Distribution System, and e) Institutional Capacity Building Studies and Seminars.

Figure 5 1
 Example of USAID's Specific Role in
 Promoting Private Sector Investment



- | | |
|-----|--|
| TA1 | Technical Assistance for the establishment of an independent Regulatory Commission |
| TA2 | Technical Assistance for regulation of tariff structure and levels at SERC |
| TA3 | Initiatives for private sector investment in generation, transmission and distribution
Bid Document preparation, Concession Contract drafting |
| TA4 | Asset Management Program and Asset Valuation of Distribution Utilities |
| TA5 | Implementation of Distribution Joint-Venture and/or Concession Contracts |

55

Table 5 2
Summary Recommendations on Counterpart Agencies for
Implementing USAID's Technical Assistance

<p align="center">Functional Areas for USAID's Technical Assistance Program</p>	<p align="center">Counterpart Agencies</p>
<p>1) Legal and Regulatory Framework</p> <ul style="list-style-type: none"> • Implementation of SERC • Rules and Regulations for CERC 	<p>Option 1 APSEB Option 2 KEB CERC, KEB or ASEB</p>
<p>2) Generation System</p> <ul style="list-style-type: none"> • Gas Distribution Study • Fuel-linkage for Power Sector Study • LROT Project Documentation • Condition Assessment Study • Model Bid Documents 	<p>TIDCO MOP/GAIL/ONGC/Coal India SEB or NTPC SEB SEB</p>
<p>3) Transmission System & Market Competition</p> <ul style="list-style-type: none"> • Bulk-power wheeling and transmission tariff study • Transmission Bid Document • ISO and Grid Code • Settlement Agreement • Regional Power Market Study • Transmission for Mine-mouth IPPs • Model Bid Documents 	<p>PGC PGC PGC PGC PGC PGC PGC</p>
<p>4) Distribution System</p> <ul style="list-style-type: none"> • Assets Management Program • Benchmark Study • Tariff Reform Study • Joint-Venture / Concession Bid Documents • Model Bid Documents 	<p>KEB and/or APSEB CBIP KEB and / or APSEB KEB and/or APSEB</p>
<p>5) Institutional Capacity Building Studies and Seminars</p> <ul style="list-style-type: none"> • Procurement Seminars • Seminar on Non-recourse Project Financing • Competition in Bulk-Power Market • Power Pooling and Settlement Agreements 	<p>All SEBs, NTPC, PGC, NHPC All SEBs All SEBs All SEBs</p>

1.0 Introduction

1.1 Background

The structural basis for the power sector in India was established by the original Indian Electricity Act and the Electricity Supply Act of 1948. These two acts provided for three types of utilities: a) the State Electricity Boards (SEBs), b) Licensees, and c) government-owned generating companies. The SEBs (of which there are 19) control about 65% of the country's generating capacity. For those projects too large or complex for individual SEBs to handle, the government formed several "Central Sector Power Companies," including National Thermal Power Corporation (NTPC), the country's largest single plant operator (18,000 MW), the National Hydroelectric Power Corporation (NHPC), the North Eastern Electric Power Corporation (NEEPCO), the National Power Transmission Corporation (NPTC), and the Nuclear Power Corporation. With the view of ultimate formation of a national grid, the government decided to transfer all of the transmission assets and associated manpower of the central sector power utilities to the newly formed NPTC, and renamed it Power Grid Corporation (PGC). Accordingly, about 20,200 circuit km of high-voltage transmission lines and substations built or under construction, including Rihand-Dadri HVDC line, are now run by PGC.

Upon independence in 1947, installed capacity in India was only about 1,400 MW. At present, the total installed capacity of both private and public sector is about 87,000 MW. However, the dependable capacity is only about 55,000 MW. India's per capita electric energy consumption is about 350 kWh per year—the lowest in the region. The transmission and distribution systems in India are subject to voltage and frequency variations, and this exacerbates the capacity shortfall and transmission of power inter-states. High-voltage 400 kV interconnection lines are not fully developed, most transmission operates on 220 kV and 132 kV levels. Distribution voltages are 33 kV, 11 kV, and 6 kV.

There are five private utilities with installed capacity of about 3,000 MW, with an additional captive power-producer capacity of 6,250 MW, which is equivalent to 9% of the total capacity in the country. However, faced with continuing shortages, both in power-generating capacity and investment funds, many SEBs are interested in attracting private power projects in their service areas. The Indian Ministry of Power solicited independent private power (IPP) projects by proposing amendments to the electricity legislation in January 1991. The new legislation allows private companies to install their own capacity and/or wholesale electricity to SEBs. Also, the sale of surplus power from industrial plants is facilitated by the amended electricity law. Estimates of the private power market in India range up to 20,000 MW by the end of year 2000 and 80,000 MW by 2005. A recent World Bank survey estimates that the Indian power sector would require investments that total nearly US\$100 billion between 1998 and 2007. Over the forecast period, the US\$10 billion required each year is approximately five times the amount spent on the power sector within the 1990-1995 period. A sizable share of the capital requirement will need to be funded by the private sector.

1 2 Objective

In USAID's development activities with the Indian government, steps are being taking to promote the flow of private capital into infrastructure development. The objective is to leverage its resources to reduce constraints for the private sector participation in the power sector and attract more long-term private capital to private power projects. Although USAID is an important donor, its resources are limited. Thus, it must ensure that its activities complement the work of major participants, such as the World Bank, ADB, and the U S private sector.

The objective of this study is to (i) identify power sector legal, regulatory, and structural adjustment lending to state and central governments for the purpose of creating the policy, institutional, economic, and sectoral conditions necessary for private sector participation, and (ii) make recommendations for the development of a USAID mission power sector strategy for technical assistance program.

1 3 Study Methodology

This study has taken place entirely in India and is a highly field-oriented review of the origin of the private sector project participation progress, constraints, status, and potential impact of the sector development. The study team conducted interviews in New Delhi with the World Bank, ADB, USAID, and CIDA, and in Mumbai, Bangalore, Chennai, and Hyderabad with the SEBs and Indian infrastructure financing institutions (IDFC, IDBI, and ILFS) over the period January 20 - February 10, 1998 (See **Annex - A** for the list of persons contacted for this study). A final mission briefing on the lessons learned, findings, and recommendations was completed on 13 February 1998. Entrance and exit briefings with USAID were used to ensure close USAID mission staff involvement. USAID staff attended many of the key meetings, particularly those where multilateral lending and private sector project financing issues were discussed.

1 4 Organization of This Report

Section 1 0 is an introduction which contains the report's objectives and methodology.

Section 2 0 addresses the current status of the sector with regards to the investment needs, the legislative and regulatory framework that governs it, and the key sector entities that operate in it.

Section 3 0 focuses on private sector participation to date in the areas of a) green-field generation projects, b) green-field transmission projects, c) existing asset sales, and d) joint-venture distribution projects.

Section 4 0 contains a discussion of constraints at the central and state government levels that impede private sector investment in India and recommendations for overcoming these barriers. These constraints include an unclear legal and regulatory process, SEBs' creditworthiness, public sector dominance, lack of domestic capital market, and public sector knowledge gap of non-recourse project financing.

Section 5 0 contains recommendations for USAID's technical assistance for removing some of these barriers at the state and central government levels. The following three principal criteria were used to develop the list of technical assistance based on the recommendations of Section 4 0

- USAID's Comparative Advantages
- Private Sector Impact
- Benefits

2.0 State of Power Sector and Investment Needs

2.1 Introduction

The power sector policy decision and implementation of power-related projects require certification and permit clearances from both the central and state governments. Traditionally, the policy guidelines and the statutory and organizational frameworks have been provided by the central government through the Indian Electricity Act (1910) and the Electricity (Supply) Act (1948). The state governments have been primarily responsible for the generation, transmission, and distribution of electricity to the ultimate consumers. Considering that the state governments were facing resource constraints, generation in the central sector has been encouraged since the mid-1970s by setting up central power sector undertakings such as the National Thermal Power Corporation (NTPC), the National Hydro Power Corporation (NHPC), and the National Power Grid Corporation (NGC).

In exercising control of tariff levels, both the state and central governments have consistently penalized their own companies—the state enterprises engaged in power generation—more severely than central government companies. This is one of the main arguments in favor of capital overture and greater private participation in public companies. Regardless of the present governmental ownership regime, this will place these companies in a better position to demand adequate tariff levels to remunerate their investments. Private participation in the power sector will lead to greater care in determining more realistic tariff levels. As long as the government is the only owner, it will be difficult, for political reasons, to recover tariffs adequately. The greater the number of market participants involved, the more market-oriented the tariff formulation will be.

2.2 Power Sector Capacity and Demand

The total installed capacity, which was around 1,700 MW in 1950 (it was only 1,400 MW at the time of India attaining independence), has increased at a rate of over 8 percent per annum since 1950. The targeted installed capacity as of 31 March 1997 was 86,156 MW. In step with additions to installed capacity, power generation in the country during the same period has increased from 5,000 million units to 400 billion units during 1996-1997. However, the energy and peak shortages still continue to plague the Indian economy. During the Fifth Plan (1974-1979), the capacity addition was 10,017 MW and during the Sixth Plan (1980-1985), it was 14,137 MW. The Seventh Plan saw a total addition of 21,051 MW while, in the Eighth Plan, the capacity addition would be only around 18,000 MW.

In spite of significant growth in power generation, shortages remain. The present shortage is mainly on account of growth in demand for power outstripping the growth in generation and generation-capacity addition. The energy shortage has increased from 9.2% in 1995-1996 to 11.5% in 1996-1997. The peak shortage during the year 1996-1997 was as high as 18.3%.

2.3 Problems Faced by the Power Sector

Among the various factors that affected the growth of the power sector, the main contributor can be stated as the non-availability of capital arising out of non-commercial tariff formulation by the State Electricity Boards (SEBs). Though the SEBs are supposed to be commercial organizations according to their charter, the state has been empowered under the Electricity Act to approve the tariff structure of the various consumers and, in their pursuit of populist programs, the states have resorted to very uneconomical tariffs to the rural consumers including the agricultural services. It is only now that the central and state governments have realized the issue of fixing tariffs on a near-commercial basis, and the country is in the process of making statutory amendments to achieve these goals. However, some of the major factors that contributed to the present-day problems can be summarized as

- A declining proportion of hydro capacity. The share of hydropower projects to the total capacity, which stood at 51% during 1962-1963 slipped to 33% in 1985-1986 and further to 25.3% in 1996.
- Only 15 percent of the hydroelectric potential of 84,000 MW has been developed. Maximum unexploited potential lies in the Northeast and the northern regions of the country.
- The Plant Load Factor (PLF), which is an important indicator of the performance of the thermal power-generating units, has shown steady improvement at all levels in India and has increased from 56.5% in 1989-1990 to 62.5% in 1996-1997. However, considerable scope remains for further improvement, particularly in the SEBs' thermal plants.
- The T&D technical losses, which were only 15% before the massive village electrification program was mounted (in 1969 with the setting up of the Rural Electrification Corporation - REC), increased to 23% (on a computed basis, as about 40% of the loads are not metered) on the average, and it is acknowledged that the actual losses are even higher.

As per the projections made by the Central Electricity Authority (CEA) in its National Power Development Plan (July 1995), the energy requirement and the peak capacity would be in the order of 1.95 billion kWh and 176 GW by 2012. The 15th Power Survey of the CEA has not given the detailed projections beyond 2001-2002 but, the 14th Power Survey of CEA projected additional generating capacity as 142 thousand MW by 2006-2007. These figures lead to the requirement of capacity addition of about 10,000 MW per annum with an investment of US\$ 25 billion per year, including the investment requirements for the transmission and distribution projects.

65

2 4 Alternatives to Additional Generation

There are however, some alternatives possible to avoid capacity addition to the extent projected through energy efficiency and demand side management programs. Also, co-generation and captive generation will also lead to reducing the investment requirements for new capacities.

Some of the steps identified as feasible measures for avoiding new generation are

- renovation and modernization of the existing power plants,
- life extension of old thermal plants,
- installation of capacitors for reducing the impact of the inductive loads,
- conversion of the existing LT distribution to High Voltage Distribution Systems (HVDS) to reduce the present line losses by about 8% and to avoid the possibility of theft of power,
- installation and regular use of electronic and pilfer-proof static meters and introduction of time of day tariff, and
- end use efficiency improvement

Various studies have indicated that there can be a 25% reduction possible in the additional capacity requirements if these energy efficiency and end use efficiency programs are taken up in all seriousness. The cost per avoided megawatt, now termed as "NEGAWATT", works out to be only about US\$ 500,000 against the estimated cost of US\$ 1,500,000 for adding a new Megawatt. Also, the gestation period for achieving the "Negawatt" is less than one year in many cases and maximum two years, in the worst possible scenario, as against the uncertain gestation periods of the new Megawatts. However, there are no concrete government policies for implementing the "Negawatt" programs, even though they are the most cost-effective.

2 5 Power Sector Status

2 5 1 Load Plant Factors

It is a known fact that the Plant Load Factors (PLF) of most of the generation plants in India are far below their achievable levels. Except in central thermal stations and some of the thermal stations of APSEB and KPC, the PLFs of other plants are far below expected levels. **Table 2 1** gives a broad profile of the performance of the power plants in the country.

A closer examination of the power plants have indicated that the performance can be improved substantially with small investments and by improving the PLF (through successful R&M and Refurbishing the plants¹) the country can recover as much as 10,000 MW

Table 2 1
Average PLF of SEBs Thermal Power Plants

State/Agency	Plant Load Factor% 1996-1997
ANDHRA PRADESH	78.3
RAJASTHAN	75.6
TAMIL NADU	72.3
KPCL	70.2
OPGC	69.4
MAHARASHTRA	68.7
PUNJAB	65.7
GUJARAT	64.8
MADHYA PRADESH	62.3
WPPDC	56.5
UTTAR PRADESH	49.1
HARYANA	47.7
DELHI	41.7
WEST BANGAL	39.2
DPL	29.5
ASSAM	27.1
BIHAR	15.3
NTPC	77.0
NLC	70.3
DVC	35.6
CESC	73.6
BSES	73.2
TEC	68.8
ALL INDIA	64.4

¹ The Phase I of Renovation & Modernization Program was taken up during the 7th Five-Year Plan. This program has yielded good results: the total additional generation during 1994-1995 was 10,392 GWh against a target of 7,000 GWh. Phase II of R&M Program covering 200 units of 46 old thermal power plants was to start in 1991-1992. These old thermal power plants have an aggregate capacity of 21,644 MW and the cost of R&M was estimated at US\$633 million. With a 5% improvement in the PLF, these plants are to add 8,750 MW annually. The program is also expected to extend the life by 15-20 years in units like Neyveli, Amarkantak, Korba-II, Satpura-I, and Kothagudem-B thermal plants with aggregating to a capacity of 1,402.5 MW.

67

2 5 2 Thermal Plants Age Factor

A closer examination of the thermal plants reveal there are as many as 189 generating units that are more than 14 years old and that were built with obsolete technologies **Table 2 2** gives the age-wise analysis of these generating units These generating units were supplied by more than 36 manufacturers from 13 different countries Many of these generating units have become obsolete and their performance is nowhere comparable to new technologies

Table 2 2

Age-wise Classification of the Thermal Generating Units

Age Group in Years	Number of Units
Up to 14	24
15 - 19	23
20 - 24	36
25 - 29	46
30 - 34	37
Above 34	23
Total	189

2 5 3 Hydroelectric Plants

There are 198 hydroelectric projects with 585 hydro units Of these, there are 101 units of 20-30-year vintage, 55 with 30-35 years, 44 with 35-40 years, 29 with 40-50 years, and 46 with more than 50-year vintage Taking 30 years as a benchmark for urgent rehabilitation and life extension studies, it is envisaged that it will be possible to achieve 10,000 MW capacity addition with an investment of only US\$ 100 million or less

2 5 4 Status of Transmission and Distribution System

It is a known fact that central transmission systems and distribution lines in the country are overloaded and over-stretched. This has been a result of a distorted investment program for the generation, transmission, and distribution. **Table 2 3** below gives the actual distribution of funds for the sectors of generation, transmission, and distribution over the last 7 five-year plans. According to the Rajadyaksha Committee, the investments in generation, transmission, and distribution should have been on the order of 50% 25% 25%. However, data in **Table 2 3** indicates that there has been a gross mismatch in the investments made in transmission and distribution areas.

It is clear from the table that the distribution of funds earmarked/spent in transmission, sub-transmission, and distribution was low compared to the expected level of 2 1 1 in the sectors of generation, transmission, and rural electrification (sub-transmission and distribution). Studies carried out in terms of system improvement schemes by the Power Finance Corporation (PFC), Rural Electrification Corporation, the World Bank (WB), Asian Development Bank (ADB), and Overseas Economic and Cooperation Fund (OECF) of Japan have shown that the sub-transmission lines were over-stretched, overloaded, and under-compensated for the inductive loads at the tail end in the form of agricultural pump-sets and tube lights.

Table 2 3

Past Investment in Generation, Transmission and Distribution

Planning Period	Generation	Transmission	Distribution	R & M Program
First Plan (1951 - 56)	40%	51%	3%	6%
Second Plan (1956 - 61)	54%	25%	16%	4%
Third Plan (1961 - 66)	62%	24%	12%	2%
Three Annual Plans (1966 - 69)	39%	24%	20%	1%
Fourth Plan (1969 - 74)	51%	27%	21%	1%
Fifth Plan (1974 - 79)	59%	27%	14%	0%
Annual Plan (1979 - 80)	52%	32%	15%	1%
Sixth Plan (1980 -85)	60%	30%	9%	2%
Seventh Plan (1985 - 90)	65%	24%	10%	5%

2 6 Investment Needs

A shortage of electricity services, with respect to estimated consumer demand, has been a consistent characteristic of all SEBs in India. Planning and investment strategies, institutional, regulatory

structures, and financing issues have been major failures in many of these SEBs. Ambitious targets for development of the power sector have not been met, while investment consistently lags behind expectations. It is now well recognized that the *private sector* has to play a leading role in the mobilization of infrastructure investment funds, if accelerated and efficient growth is to be maintained.

During the remainder of this decade, developing India must raise an enormous amount of capital to expand its power sector facilities to meet the needs of its rapid economic and social development. It has been estimated that approximately \$25 billion per year in capital expenditure will be required by the end of the current decade to meet the demands of the power sector by adding 80 gigawatts of generating capacity and related transmission and distribution system facilities. Similarly, investment requirements for other sectors (ports, airports, transportation, telecommunication, health, etc.) will exceed over \$200 billion for the remainder of the decade. Considering the limited availability of public funds and bilateral / multilateral soft loans, it is imperative to achieve greater private sector financing involvement in infrastructure projects.

In order to support continuing economic growth and reform policies, the public enterprises need to expand rapidly their infrastructure sectors in the coming years. Additional infrastructure investments are essential for their economies to fully realize the benefits of the potential economic growth. The likely demand for funds to finance these infrastructure projects appears to be enormous. For example, in the next 10 years, according to the World Bank estimate, investment requirements for infrastructure sectors in Asia (other than Japan) will exceed \$2.5 trillion. About 75% of this amount is likely to be financed by the private sector so as to enhance the efficiency of project implementation and also due to shortages of funds from public sources.

In this emerging dynamic environment, projects are complex and large, requiring special types of experience and expertise. Close coordination among various qualified parties across national boundaries is becoming a necessity. The ability to develop new projects, form alliances with other international parties, and mobilize finances in the international markets to bring such transactions to financial closure will be essential for the governments to succeed in the international marketplace.

3.0 Review of Private Sector Participation

3.1 Introduction

India is proceeding along two private sector investment tracks designed to attract foreign investment to meet impending power requirements: a) joint-venturing existing facilities, and b) attracting private IPP capital to green-field and partially completed projects. Any assessment of these national and regional efforts to date, and suggestions for improvement, should be viewed in terms of assuring both near-term viability from an investment standpoint, and long-term viability from a systems operation standpoint.

Given India's size and the complexity of its energy economy, satisfactory results will only come about through a more complex weaving of these two tracks than has been the case in other emerging countries. The private sector investment criteria for a transparent legal and regulatory system must be implemented, such as

- defining the roles of public and private players in each of these two types of investment,
- procuring private sector participation in each track and using compatible standards for competitive evaluation and due diligence,
- improving the creditworthiness of public enterprises (SEBs), and
- rationalizing power rates and tariff structures

In addition, however, investors are learning from other Asian and Latin American experiences to focus on issues relating to the long-term prospects of privatization and its viability under circumstances arising from a possible ongoing sector reform process.

A variety of specific factors require further legal delineation, including the integration of the grid and management of power dispatch from both existing entities and IPPs, the feasibility of securitizing the obligations of public entities and the IPP power sale arrangements (pre- and post-local and/or regional grid integration), and the extent to which local pension funds or other capital sources can be tapped for the power sector.

3.2 Green-field IPP Projects

The perception that India is the jewel in the crown for private power developers can be easily construed by the fact that there are 70,659 MW of potential IPP schemes now being sought after by the private sector. If all proposals were to bear fruit, India's capacity would be heading toward 150,000 MW by the millennium. The reality is that only a handful of IPPs are being developed in India, led by the controversial Enron-backed Dabhol naphtha-cum-LNG project in Maharashtra. Only 513 MW of IPP capacity has been commissioned since India first announced

its power sector reform program in 1991. These are the 3 x 45.8 MW units at Jegurupadu, the 45.8 MW project at Godavari and the 3 x 110 MW units at Hazira, all of which are generating power.

But the fact that 128 projects have been identified and 96 have reached Memorandum of Understanding (MOU) stage at least serves to underline the private sector's interest in India's power supply program. The 740 MW first phase of Dabhol is in firm construction stage, which sets it apart from many other high-priority schemes which are still struggling to reach financial closure. Many remain mired in issues relating to capital costs, tariffs, fuel supply, and guarantees for payment from the financially troubled state electricity boards (SEBs).

Included in **Annex C** is a list of all private sector power projects in India.

3.3 Transmission Projects

The Government has introduced a Bill in Parliament to amend electricity laws to recognize transmission as an activity independent of generation and distribution and to facilitate private investment in transmission projects. The following projects for bulk power transfer will be available for competitive bidding after the amendments have been enacted:

- AC interconnection between eastern and western regions (Estimated cost US\$ 85.7 million),
- Transmission system between CEPA project and northern region (US\$ 958.6 million),
- Transmission system between CEPA project and western region (US\$ 370.6 million),
- Connection between northeast and eastern regions (US\$ 100 million),
- HVDC line for Tacher II system (US\$ 356 million), and
- HVDC terminals for Tacher II system (US\$ 434.3 million)

3.4 Distribution Projects

Several state governments are recommending sweeping reforms in power distribution, including complete corporatization of the existing distribution system and a shift towards performance-linked return on investment. All reforming states are recognizing the need to break up the existing state electricity board's distribution system into manageable distribution zones. This will allow conversion of the existing distribution system into corporate units that could lend themselves more conveniently to the transition from public to private sector ownership. Recently, a Distribution Reform Committee (S. J. Coelho Committee) which was constituted by the Union power ministry has suggested the following eight models for the states to evaluate for private sector participation in the distribution system.

- Expanding of the area under the existing licensees,
- Contracting of services,
- Management contract,
- Distribution by municipal undertakings,
- Joint-ventures,
- Linking of independent power producers (IPPs) and distribution licensees,
- Outright sale through a licensee agreement, and
- Distribution cooperatives

Each model has been reviewed by the committee, which has specified that there are no standard solutions to the problem of restructuring the vertically integrated SEBs

The Orissa and Rajasthan distribution privatization moves have been expected to result in similar measures by other states. Andhra Pradesh, Bihar, Gujarat, Haryana, Punjab, and Uttar Pradesh have shown interest in private sector participation in distribution system. However, progress is likely to be slow since the form of privatization and role of foreign investors remains unclear.

3 5 Fuel Sector

3 5 1 Coal Sector Development and Supply

Legislation has been introduced to permit foreign companies to enter mining operations through equity participation with a national company, subject to approval of the Foreign Investment Promotion Board should the foreign equity be higher than 50%. It also has been decided to amend the Mines and Minerals Regulations and Development Act of 1957 to frame rules for setting up an independent regulatory body. That body will allocate coal and lignite mining blocks to the investors on competitive bidding. The transfer of blocks from Coal India Ltd, the dominant national coal company, and the establishment of recoverable percentages of coal will be included in the norms for bidding. The regulatory body also will arbitrate price disputes between the producers and consumers.

Production by the private companies would be allowed after the amendment of legislation and would begin only towards the year 2000 when, simultaneously, prices of the remaining grades of coal would be deregulated. At that time, both public and private sector companies will be able to sell coal at market-determined prices.

3 5 2 Gas Sector Private Investment

Gujarat Gas is India's largest private gas distribution company, supplying customers in Gujarat State, western India. BG plc, through its wholly owned British Gas Asia Pacific Holdings Pte Ltd, has acquired a further 16% of Gujarat Gas Company, after the closing of public tender. In July 1997, BG acquired 44.31% of Gujarat Gas Company from Mafatlal Industries Ltd and the Hindustan Oil Exploration Company. Gujarat Gas has about 1,000 km of gas pipeline serving around 300 industrial, 800 commercial, 74,000 residential, and 600 CNG customers in Surat, Ankleshwar and Bharuch.

Since 1994, BG has been a 50% partner with the Gas Authority of India in Mahanagar Gas, which is developing a gas distribution system in Mumbai. Currently it supplies more than 3,000 domestic customers. It is to begin connecting industrial customers in the near future.

74

4.0 Constraints on Private Sector Participation and Recommendations

4.1 Introduction

The recent coalition governments of India have largely maintained the progressive economic reform and private sector investment policies of the previous Congress government. However, the Government's ability to maintain the pace of economic growth at a level of seven/eight per annum (real GDP growth rates were 1994 - 7.2%, 1995 - 7.1%, and 1996 - 6.2%) is strongly predicated both on sustained macroeconomic confidence and the speed and efficiency with which critical infrastructure services can be upgraded and delivered.

For several decades, public investment and the execution of power sector projects has been below expectations. New construction and the rehabilitation of the existing power sector project stock have been supported almost exclusively by public funds and loans. The effectiveness of this lending has been diminished by chronic operational weaknesses of the SEBs which have led to procurement and implementation delays. As a result, serious bottlenecks are evident in the generation of power, transmission, and distribution of electricity and customer services with regard to billing, metering, and collection of revenues.

4.2 India's Major Barriers

It is estimated that US\$ 250 billion are required to finance India's power sector development over the next 10 years. However, in raising these funds, the Indian authorities face a number of obstacles. First, an appropriate policy framework to maximize the mobilization of private savings for the power sector has yet to be developed.

Second, neither the existing nor the proposed financial institutions in India have, or will have in the near future, the autonomy, management and staff capability, capital structure, and quality of portfolio that would enable them to mobilize necessary resources in domestic and international markets on their own strength.

Third, short-term funds are not suitable for the financing of long-term projects, such as power plants, causing serious term mismatch problems for the private power project developers (all infrastructure projects in general). The problem lies in the fact that India's capital market is underdeveloped and controlled, making it difficult to raise long-term local currency funds or to roll over short- and medium-term bonds on maturity.

Fourth, when foreign financial institutions are able to supply the necessary capital, they are willing to do so only with repayment guarantees. Given the enormous capital needs of the Indian power sector, neither the Government nor the country's internationally creditworthy financial institutions are willing or able to provide such guarantees indefinitely. India, however, lacks various market mechanisms and institutional arrangements necessary to tap this vast pool of foreign savings on a limited recourse basis.

It is significant to note that while India has one of the highest savings rates in the world, the financial intermediation has been far less than its potential. This is due, in part, to the narrow choice of savings instruments in the domestic debt market and, in part, to artificially low interest rates. If domestic savings are to be successfully mobilized through the debt market, appropriate policies and financial instruments must be introduced. This would not only benefit the power sector, but would also promote a more rational and balanced development of India's capital market.

4.3 Power Sector Specific Constraints

In general, the study found that the private sector (both domestic and foreign) perceives formidable risks to investment in the power sector. The following generic barriers were most often cited, by the private sector and financial institutions, as the principal constraints to private sector ownership and financing of power projects. Some of these constraints are country-oriented (India-specific) and project-oriented.

Country-oriented Constraints

- India's outdated legal, regulatory, and contractual framework (Electricity Act of 1948)
- The lack of clarity in the decision-making process by the central and state governments
- The public sector's dominance of ownership and operation
- The country's lack of experience with the private sector non-recourse financing of projects
- The use of SEBs for public employment services (highly over staffed)
- The use of SEBs for vote banks by promoting non-economic and unsustainable tariff structures
- The limited availability and convertibility of foreign exchange
- The high-level regulatory uncertainty
- The non-transparent bidding and procurement processes and lack of understanding of how developed markets work

Project-oriented Constraints

- The lack of SEBs' creditworthiness
- Restrictions or changes in the pricing or rate of return allowed
- The single-buyer market (no wholesale power competition in the power market)
- The limited capabilities of local construction and equipment firms
- The limited financial and technical capabilities of local joint-venture firms
- The uncertainty of down-stream investment capabilities of SEBs in the areas of transmission and distribution upgrade and modernization to evacuate IPP projects' generating capacities
- The lack of a comprehensive fuel-linkage policy
- The limited knowledge and institutional capabilities of SEBs for non-recourse project financing requirements by the international financing institutions
- The limitation of the escrow-account approach for bankable PPA

There is significant variation in the importance of the above constraints across the SEBs and states visited by the study team. Some constraints are more important to address over the long-term and beyond the scope of USAID's technical assistance program. However, the study team has identified the following constraints as critical near-term risks to private sector project development that must be alleviated before substantial private sector participation can proceed.

In order of priority

1) Lack of SEBs Creditworthiness

- Major inefficiencies in production and distribution systems
- Tariffs do not recover costs
- Poor management and institutional structures
- Lack of creditworthy purchaser of infrastructure services or products

2) Public Sector Dominance

- Fuel, Transportation, PPA, FPA
- Partial sale rather than total divestiture (i.e., Latin America, Australia, U.K., etc.)
- Unwillingness of Railway Ministry to guarantee fuel quality and transportation or enter into a tri-party (SEB, IPP Developer, and Railway India) contract

3) Policy Constraints

- Efficiency and costs
- Service of sector's foreign and domestic debt
 - ◆ SEBs' arrears on their debts to PFC, WB, Central Government, Railways, Contractors, and others,
 - ◆ Arrears to SEBs Public Sector Cash Transfers and arrears from unpaid bills,
 - ◆ Electricity Losses,
 - ◆ SEBs Administrative Independence,
 - ◆ Streamlining of SEBs Procurement Policies,
 - ◆ Regional Development Policies, and
 - ◆ Bulk Power Market Competition Policy
- Lack of fuel-linkage policy
 - ◆ Liquid fuel and natural gas allocation for power sector,
 - ◆ Coal mine linkage for IPP projects,
 - ◆ Coal import ceiling for coastal projects, and
 - ◆ Private sector development of new coal mines

4) Unclear Legal and Regulatory Process

- A decision-making process that is not transparent and /or is overlapping in several state and central agencies
- Unclear procurement process
- Inadequate dispute resolution and arbitration processes

Regulatory Uncertainty

- Unclear regulatory framework
- Lack of regulatory institutions that provide stability and fairness

5) The Limited Availability and Convertibility of Foreign Exchange

- Under the present GDP growth rate, unsustainable long-term reliance on foreign capital
- Limited availability of domestic capital
- Limited access to foreign exchange, etc

6) Public Sector Knowledge Gap

- Lack of understanding of non-recourse project financing,
- Bankable bidding documentation requirements
- Allocation of project risks

The importance of some of these barriers may vary depending on sources of project financing and composition of the project consortium

4 4 Recommendations

This section develops detailed recommendations that are designed to assist the USAID/India Mission in establishing priorities for the development of its Infrastructure Regulatory and Project Services (IRAPS) strategy. The recommendations and technical assistance are organized according to the five functional areas identified by the team, and private and public sector entities

- Legal and Regulatory Transparency
- Project Financing and Capital Mobilization
- Opportunities For Private Sector Participation in Projects
 - ◆ Generation
 - ◆ Transmission
 - ◆ Distribution
 - ◆ Fuel Supply
 - ◆ Fuel Resource Development
 - ◆ Rehabilitation and Modernization
- Market Competition
- Institutional Capacity Building of Public Sector

Figure 4 1 illustrates the major constraints for private investment and recommended interventions for USAID's technical assistance

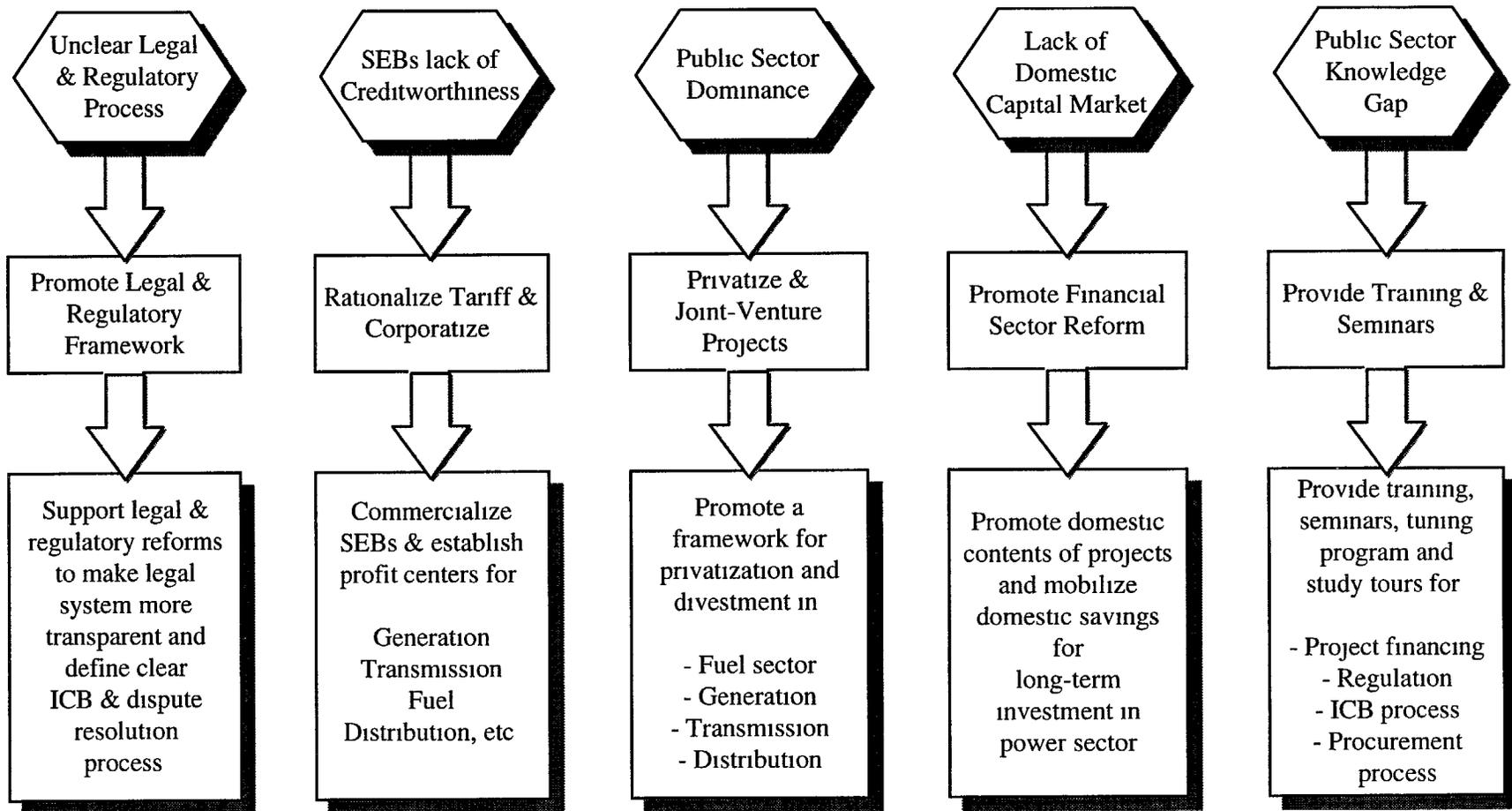
4 5 Transition Paths

In India, both the central and state governments have various choices for attracting private sector investment (by divesting ownership), and introducing competition for and within the power sector markets (or infrastructure markets). Consumer gains tend to be largest where unbundling promotes competition, and privatization is allowed with proper regulatory oversight. More countries have used private entry to build new assets rather than wholesale divestiture of existing assets as illustrated in Figure 4 2. But even limited entry can create constituencies that press for further liberalization. For example, after successfully promoting new power generation plants, the Philippines is preparing to privatize its National Power Company and Manila's water system. Competition in the domestic telecom sector has already been introduced.

Figure 4 3 shows the different ownership structures, ranging from very limited private sector participation under a management contract through to devolving full responsibility for long-term investment and operation of existing assets (“divestiture”) The difference between the “build-operate-transfer” and “build-own-operate” models is largely political “Transfer” or “concession contract” has been preferred where governments are concerned about the political implications of ceding control to private or foreign owners In practice, if private firms operate the assets efficiently, these concessions may be re-bid at the end of the concession term

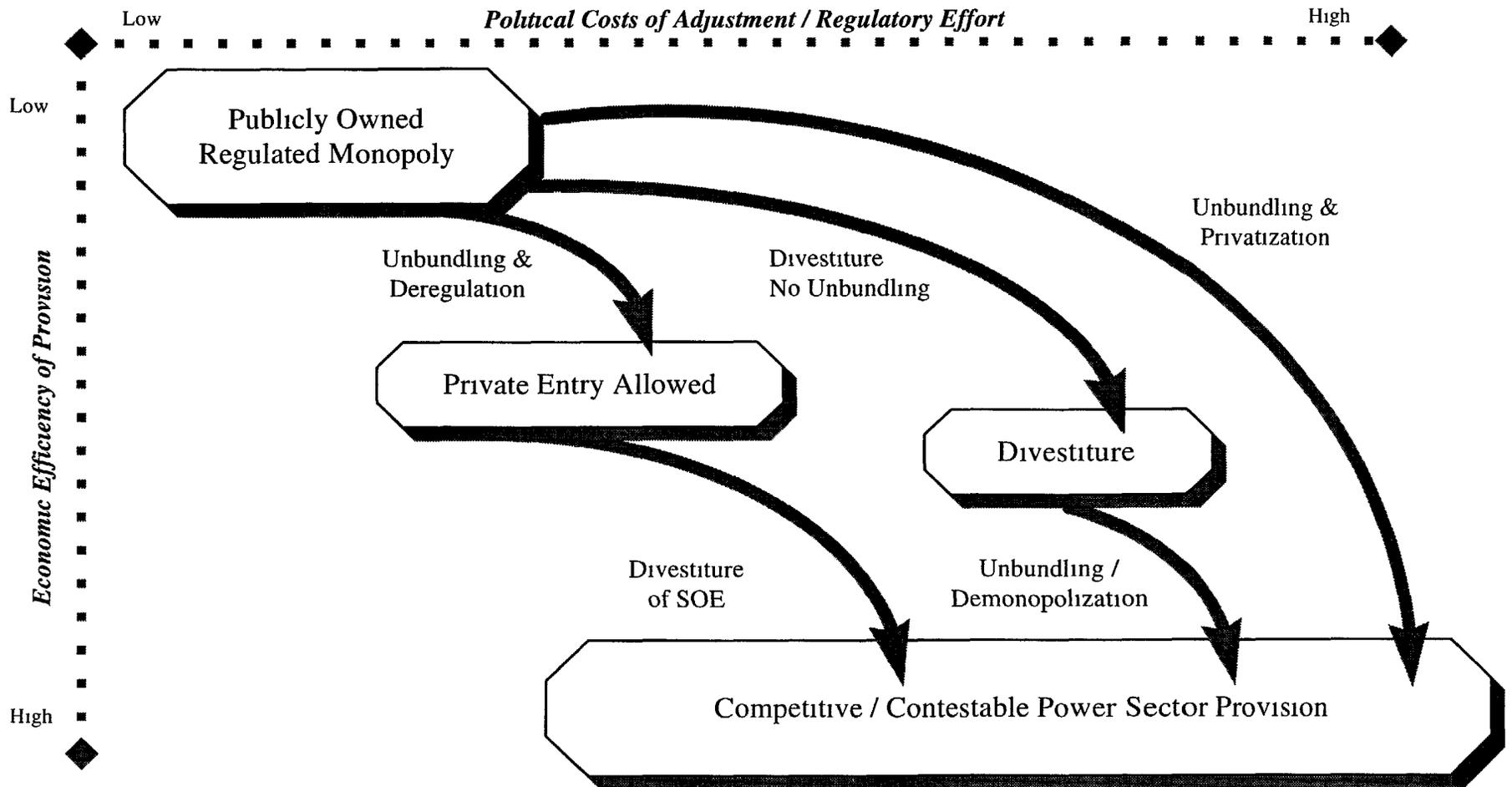
Figure 4 4 illustrates all potential areas (generation, transmission, distribution, fuel supply, fuel resource development, rehabilitation and modernization, etc) where USAID’s technical assistance may be directed to promote private sector participation

Figure 4 1
Power Sector Recommended Actions For USAID's Technical Assistance
Major Constraints For Private Investment



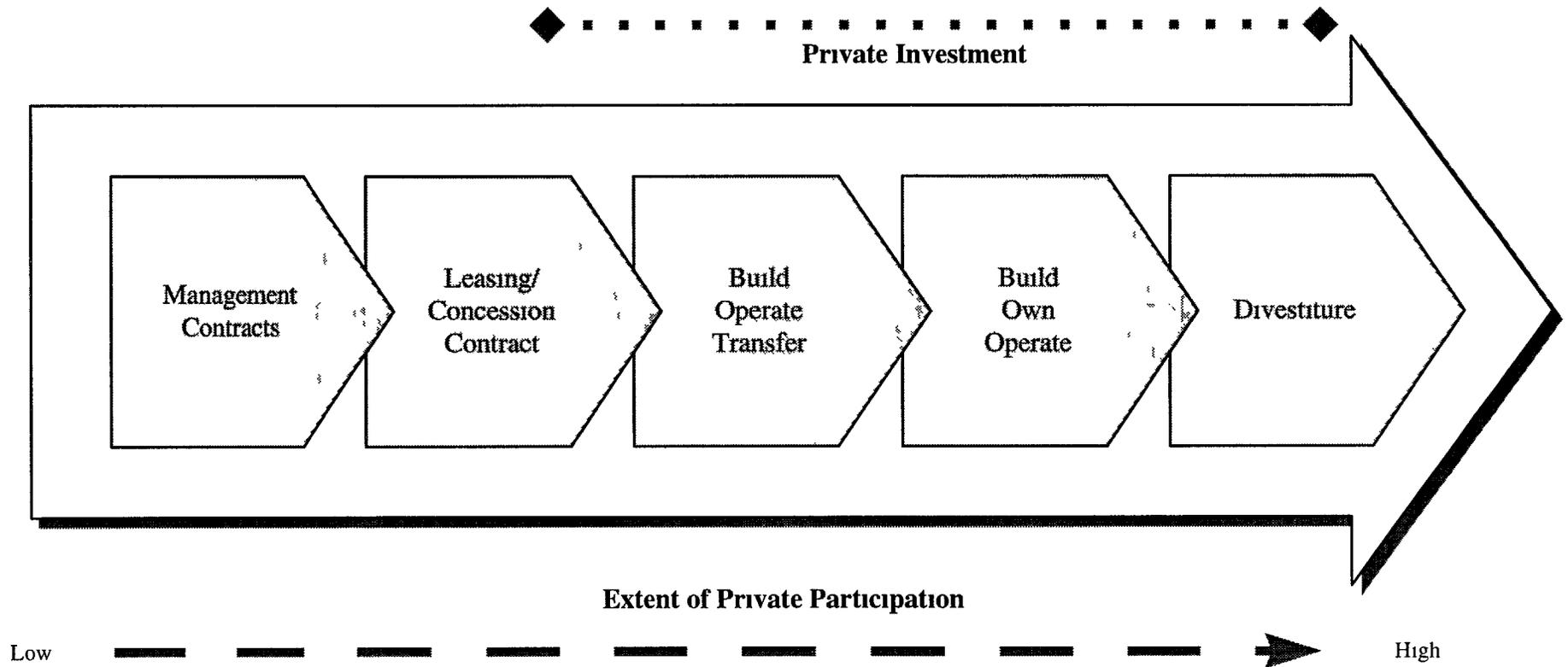
Short-term and Medium-term Solutions

Figure 4 2
 Transition Paths in Power Sector Privatization



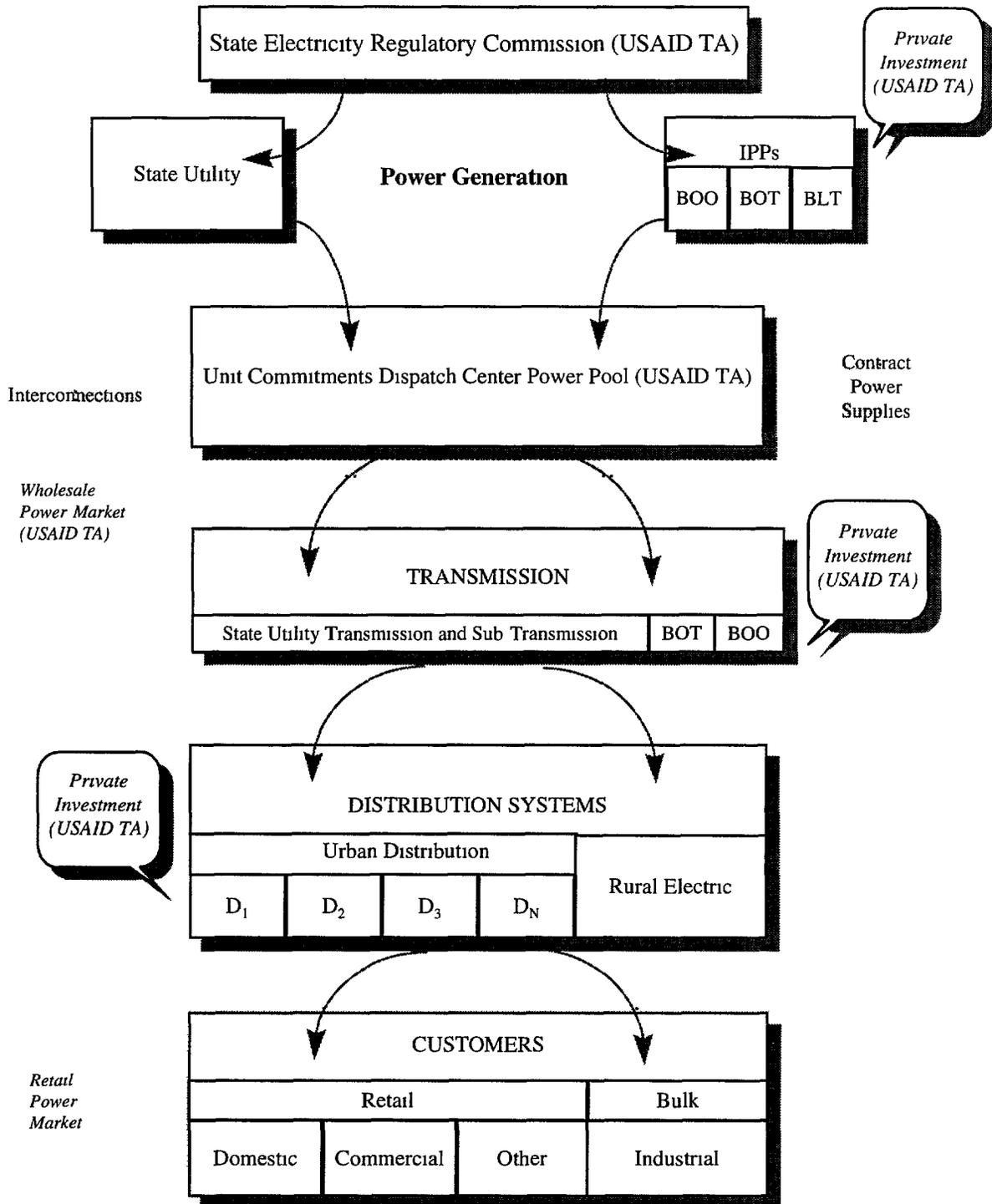
82

Figure 4 3
Various Ownership Structures



83

Figure 4 4
Illustration of Recommended Power Sector Areas
for USAID's Technical Assistance



84

4.6 Recommendations Screening Criteria

The following three principal criteria were used to screen recommendations of all five functional areas. The results will ultimately develop into a list of technical assistance (Section 5.0) programs for the USAID/India Mission which will provide guidance during the transition period.

Criterion 1 Comparative Advantage

This criterion addresses the extent to which USAID is suited to implement a technical assistance in a functional area, based on the lessons learned by the Agency in India and other donors, United States expertise, and new trends. It also includes an assessment of USAID's potential effectiveness relative to that of other donors, private sector organizations, and others active in this field.

Criterion 2 Private Sector Impact

This criterion refers to USAID's ability to have an important development impact in India's power sector sustainability in each of the functional areas. It also includes an evaluation of the Mission's ability to leverage or complement (but not duplicate) the efforts of other donors.

Criterion 3 Benefits

This criterion includes all potential benefits of a recommendation, qualitative and/or quantitative. Examples are:

Quantitative Benefits improved performance levels, improved asset valuation for privatization, potential rate-payers benefits, and potential cost avoidance.

Qualitative Benefits meets challenges of changing environment, contributes effective management of SEBs, and improves or streamlines legal and regulatory services.

For all three criteria, a **High, Medium, or Low** classification was assigned to each recommendation. All recommendations are likely to produce indirect benefits to which specific dollar values cannot easily be assigned, but which will result in more efficient and effective operations of power sector. In **Table 4.1**, classifications of all three criteria are included for all recommendations. It is important to note that various critical recommendations were given "low" or "medium" grade because of the limitations of annual funding availability from USAID (the consultants were told about US\$2 to US\$4 million per annum for all three infrastructure sectors: Ports, Power, and Roads).

Table 4.2 presents a summary of the recommendations made in **Table 4.1** and ranking of USAID's comparative advantage based on its limited resources, power sector development impact, and the counterpart agencies (state and central government levels) where USAID technical assistance would produce the greatest benefit.

Table 4 1 Recommendations

Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
<p>Legal and Regulatory Transparency</p> <p>a) India’s outdated legal, regulatory, and contractual framework (Electricity Act of 1948)</p> <p>b) Lack of clarity in the decision-making process by the Central and State governments</p> <p>c) The high level of regulatory uncertainty</p> <p>d) Non-transparent bidding and procurement processes and the lack of understanding of how developed markets work</p>	<p>Will require amendment of the Electricity Law of 1948 in several areas including SEBs ROR of 3%</p> <p>Support legal and regulatory reforms to make legal system more transparent and clearly define the bidding, procurement dispute resolution and arbitration processes</p> <p>Encourage the establishment of a transparent regulatory framework that is administered by a regulatory institution less dependent on the political process</p> <p>Support the implementation of CERC and SERC</p> <p>Provide model bidding documents for private sector participation and investment solicitation procedures, rules and process for green-field generation and R&M projects, transmission projects, distribution projects, coal mine projects, and LNG and natural gas distribution projects</p> <p>Clarify exactly what procurement practices are essential to multilateral lending agencies participation Promote a fair dispute resolution process for foreign investors in international courts</p>	<p>Low</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Medium</p>



Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
e) Lack of a comprehensive fuel-linkage policy	Promote private sector participation in coal mine development and operation	High	High	High
	Develop comprehensive fuel-linkage policy for the next generation of private power projects	Medium	Medium	High
	Develop fuel import policy (Coal, LNG, Petrol Coke, etc) and ceilings for the next five and ten years	Low (no role for USAID)	Medium	Medium
Project Financing and Capital Mobilization a) The limited availability and convertibility of foreign exchange b) The lack of SEBs' creditworthiness	Promote financial sector reforms that establish domestic capital markets for transparency, long-term debt instruments to channel domestic savings into private sector infrastructure projects Ensure that power sector reforms are being implemented in a way that reduces technical and administrative losses, increases tariffs, and corporatizes the key utilities so they develop competitive management structures Establish program to measure utility creditworthiness by international standards and achieve necessary reforms with clear targets and milestones	Low Low High High	High Medium High High	High High High High

Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
<p>c) The limited financial and technical capabilities of local joint-venture firms</p> <p>d) The lack of financial instruments to maximize the flow of funds to power projects</p>	<p>Vertically and horizontally separate distribution utilities and commercialize for full privatization and/or concession contracts</p> <p>Long-term development constraints USAID has no significant role</p> <p>Facilitate the implementation of the following project financing instruments for the power sector and other infrastructure projects</p> <p>Backstop Facility - In the simplest case, such a facility might offer to refinance after project completion</p> <p>Independent Power Development Fund - One way to attract the capital of foreign institutional investors, IPPs, and Power Companies would be to establish an Independent Power Development Fund or Facility (IPDF)</p> <p>Securitization – Financial institutions should invest only in negotiable bonds and equity instruments of SEBs They should sell their bonds and stocks at an appropriate time and reinvest in other new projects</p> <p>Other Instruments - Financial institutions might offer limited guarantees/assurances as to the contractual performance of SEBs and suppliers of fuel and foreign exchange availability for debt service and repatriation purposes</p>	<p>Low</p> <p>Low</p> <p>Low</p> <p>Low (no role for USAID)</p> <p>Low</p> <p>Low</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>

88



Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
<p>e) Limitation of escrow-account approach for bankable PPA</p> <p>f) The country's lack of experience with the private sector non-recourse financing of projects</p> <p>g) The limited capabilities of local construction and equipment suppliers</p>	<p>Improve SEBs' creditworthiness</p> <p>Develop appropriate financial instruments or mechanisms for private financing and guarantees for power sector projects Particular emphasis should be given to small hydro and renewable IPPs</p> <p>Long-term development constraints USAID has no specific role</p>	<p>High</p> <p>High</p> <p>Low</p>	<p>High</p> <p>High</p> <p>Medium</p>	<p>High</p> <p>High</p> <p>High</p>
<p>Opportunities for Private Sector Participation in Power Projects</p> <p>1) Green-field Generation Projects</p> <p>Fuel-linkage constraints Fuel development constraints Fuel transportation constraints</p>	<p>Promote private sector participation in the development of captive coal mines for mine-mouth power projects and/or transportation of coal to IPPs based on a model contract with the Coal Mine, Indian Railway and IPP developers</p> <p>Develop concession contract arrangement for the natural gas field development, operation and distribution pipeline construction on a BOOT / BOOM basis</p> <p>Assist state governments in the LNG terminal projects and distribution feasibility study</p>	<p>Medium</p> <p>High</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p>	<p>Medium</p> <p>High</p> <p>High</p>

56

Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
<p>ii) Rehabilitation and Modernization Projects</p> <p>Lack of comprehensive policy for private sector investors</p> <p>Incomplete or non-existence power plants condition assessment study</p> <p>Personnel Issues</p> <p>Lack of Contractual Documents and Agreements</p>	<p>Assist PFC, SEBs, NTPC, and NHPC to develop comprehensive policies for full privatization, LROT, and/or joint-venture</p> <p>Continue to support condition assessment and feasibility study for private sector investment in the existing power plants</p> <p>Develop a model human resources restructuring program based on the laws and employees' rights of SEBs, NTPC, and NHPC</p> <p>Provide technical assistance for the model Bid Documents for full privatization, concession contract, and/or LROT contract</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>High</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>High</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>High</p>
<p>iii) Transmission Projects</p> <p>Major constraints are</p> <p>1) Inability of SEBs to invest in evacuation lines and upgrading of subtransmission and distribution system</p> <p>ii) Undefined government policies for transmission pricing and power wheeling</p>	<p>Promote private sector participation in transmission and sub-transmission projects to remove inter- and intra-power wheeling and transmission constraints</p> <p>Provide technical assistance to develop power wheeling and transmission pricing mechanism at the CERC</p>	<p>High</p> <p>High</p>	<p>High</p> <p>High</p>	<p>High</p> <p>High</p>

Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
<p>Distribution Utilities</p> <p>Major Constraints are</p> <ul style="list-style-type: none"> i) Inadequate tariff policies ii) Inadequate billing, metering, and collections iii) High technical and non-technical losses iv) Inadequate asset management and maintenance v) Poor O&M practices vi) Personnel issues (over-staffing) 	<p>Develop Guidelines for the Independent System Operators (ISO), Grid Codes, Power Pooling and Settlement Agreements</p> <p>Perform a Benchmark Study to illustrate Indian SEBs technical, financial, and personnel productivity in comparison with the international "best practices "</p> <p>Provide technical assistance for tariff reform study</p> <p>Develop computerized distribution asset management and asset valuation program</p> <p>Develop model documents for concession and joint-venture contracts</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>
<p>Market Competition</p> <p>Major Constraints are</p> <ul style="list-style-type: none"> i) The public sector's dominance of ownership and operation 	<p>Promote a framework for decentralization and privatization that reduces the government's role in the power (infrastructure) sector in those areas where the private sector can be more efficient</p>	<p>Medium</p>	<p>High</p>	<p>High</p>

Constraints	Recommendations and Remarks	Criterion 1	Criterion 2	Criterion 3
11) Single-buyer market in the wholesale power market	Promote the notion of competition bulk-power market to introduce market competition and production efficiency improvement in the sector	High	Medium	High
<p>Institutional Capacity Building of Public Sector</p> <p>Major constraints are</p> <p>i) The use of SEBs for public employment services (highly over-staffed)</p> <p>ii) The use of SEBs for vote banks by promoting non-economic and unsustainable tariff structures</p> <p>iii) The limited knowledge and institutional capacity of both central and state government in dealing with private sector investment and understanding national-level implications of private sector investments</p>	<p>Long-term development issue USAID has no direct role in removing this constraint</p> <p>Promote programs to commercialize and corporatize SEBs operations</p> <p>Provide institutional capacity building technical assistance to both central and state government agencies for dealing with private sector project developers and investors</p>	<p>Low</p> <p>High</p> <p>High</p>	<p>High (negative)</p> <p>High (negative)</p> <p>High (positive)</p>	<p>Low</p> <p>High</p> <p>High</p>

**Table 4 2
Summary Recommendations**

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
<p>Legal and Regulatory Assistance</p> <p>a) Provide technical assistance for the implementation of State Electricity Regulatory Commission (SERC)</p> <p>b) Provide technical assistance for the implementation of Central Electricity Regulatory Commission (CERC)</p> <p>c) Provide model Bidding Documents for Joint-Venture projects (generation and transmission), Concession Contracts, PPA And FSA</p>	<p align="center">High</p> <p align="center">Medium</p> <p align="center">High</p>	<p align="center">High</p> <p align="center">High</p> <p align="center">High</p>	<p>First Option Andhra Pradesh Second Option Karnataka (TOR is included in Annex)</p> <p>MOP and CEA</p> <p>Reforming SEB or NTPC</p>
<p>Project Financing and Capital Mobilization</p> <p>a) Improve SEBs' Creditworthiness</p> <p>Provide technical assistance to measure SEBs' technical, financial, and personnel performance standards (Benchmark study) by international "best practices "</p>	<p align="center">High</p>	<p align="center">High</p>	<p>Sponsor 1 APSEB Sponsor 2 KEB</p>

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
<p>Opportunities for Private Sector Participation in Power Projects</p> <p><i>Green-field Projects</i> Assist Tamil Nadu state government (TIDCO) in the LNG terminal project and natural gas pipe-line distribution feasibility study</p> <p><i>Rehabilitation and Modernization Projects</i></p> <p>a) Provide technical assistance for model Bid Documents for full privatization, concession contract, and/or LROT contract for existing power plants</p> <p>b) Provide technical assistance for preparation of a model bankable power plant condition assessment report for full privation and/or LROT contract</p> <p><i>Transmission-Related Projects</i></p> <p>a) Provide technical assistance to develop power wheeling and bulk-power transmission pricing mechanism for the PGC services</p> <p><i>Distribution Unlines</i></p> <p>a) Provide technical assistance for tariff reform and agricultural subsidy mechanism study</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>Medium</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>	<p>TIDCO</p> <p>NTPC or APSEB</p> <p>NTPC or APSEB or KEB</p> <p>PGC</p> <p>APSEB or KEB</p>

Recommendations	USAID's Comparative Advantage	Sector Priority	Recommended Counterpart Agencies
b) Develop computerized distribution asset management and asset valuation program that will lead to distribution utility privatization and/or concession contract arrangement	High	High	APSEB or KEB
Market Competition Develop guidelines for the Independent System Operators (ISO), Grid Codes, Power Pooling and Settlement Agreement	High	High	APSEB
Institutional Capacity Building of Public Sector Provide institutional capacity building support for seminars and training program for the central and state government agencies for dealing with private sector project developers and investors	High	High	APSEB / KEB / MOP/ CEA / PGC

5.0 Recommendations for USAID's Technical Assistance Program

5.1 Possible Areas of USAID Technical Assistance

There are several ways in which USAID can assist in improving the legal and regulatory policies and institutional framework, hence facilitating the mobilization of funds from private sources and private sector participation in the power sector. USAID is already having a comprehensive dialogue with the Indian government on the policy and institutional reforms in the power and financial sectors (for example FIRE and EMCAT projects) in the context of its operations, economic, and sector work. Various institutional and operational options discussed below are to be reviewed by the governments (state and central) and USAID, the priorities have to be agreed upon between the two.

- A) **Power Sector Reform** The power sector reform should continue with an accelerated speed with particular focus on
- Enacting a comprehensive law to establish a regulatory framework for the power sector that would, inter alia, a) protect the autonomy and commercialized operations of enterprises, b) specify the basis for price determination in segments (e.g., coal, transportation, etc.) that continue to have monopoly operations, c) establish regulatory functions of the government and separate its ownership and management roles, and d) encourage private sector investment in generation and help to reduce barriers to the functioning of market forces
 - Commercializing and corporatizing the power sector
 - Allowing competition at the generation level (bulk power market)
 - Minimizing and simplifying administrative controls on IPPs
 - Making partial self-financing of project costs a must for all SEBs
- B) **Financial Sector Reform** The financial sector reform should also be accelerated with particular focus on
- Making foreign exchange easily accessible and convertible
 - Making interest rates market-determined
 - Allowing financial institutions to lend on commercial considerations

- Minimizing direct credit and following explicit and transparent criteria for such loans
 - Giving increased freedom to the SEBs to issue bonds as and when needed by them, and also to issue equity-linked instruments to respond to public preferences
 - Allowing SEBs to issue shares and list them at the stock exchanges in India
- C) **Laws and Regulations** In addition to the Electricity Law mentioned in (A) above, the enforceability of existing laws, such as, the Bankruptcy Law, should be improved. In addition, effective legal remedies and procedures for disputes should be established.
- D) **Financial Institutions** Financial institutions such as the proposed Independent Power Development Fund (IDPF) for private sector projects should be established and should be given genuine operational and financial autonomy.
- E) **Asset Divestiture and Securitization** SEBs' existing income-generating power assets should be allowed to be used as a basis for mobilizing additional funds. This can be done by packaging existing assets to form new companies which should list their stock and sell off a part of it to the general public. Alternatively, these companies can issue bonds against their income streams.
- F) **Standard Documentation and International Bidding** In order to provide a level playing field to all IPPs, and transmission and distribution investors, and to have an objective comparison of bids, standards / model contracts (e.g., Power Purchase Agreement, Fuel Sales Agreement, Transportation Agreement, Concession Agreement, Joint-Venture Agreement, etc.) should be prepared specifically incorporating all country risks and regulations. Similarly, standard and transparent bid evaluation criteria should be established. Based on these documents and criteria, international bids should be called for power projects.
- G) **Fuel Linkage and Policy** Liquid fuels and coal-mine linkage of approved IPP projects are causing discord rather than power generation. We were unable to discover any government policy with regard to import of coal for the coastal power plants, private sector transportation of coals, and requirement for the tripartite coal agreement (Coal India, Indian Railway, and IPP developer) for the linkage of approved IPP projects.
- H) **Asset Management and Valuation** At present, none of the SEBs in India maintain any form of computerized asset management program. However, under the proposed restructuring of the power sector, many SEBs will be vertically separated and privatized into three entities: a) Generating Company (existing generation facilities), b) Transmission and Dispatch Company, and c) a Distribution Company. For the near-term, the SEBs will retain control of the Transmission and Dispatch Company to provide a level playing field for the IPP developers, Generating Company and Distribution Utilities. Promotion of private sector participation in the reformed SEBs' generating facilities and distribution system will require extensive efforts for asset valuation in the absence of an asset management program.

- I) **Promotion of Foreign Investment** Transparent rules and regulations and a clearly defined regulatory institutional framework need to be introduced to facilitate direct foreign investment. In addition, various administrative overlapping central and state government procedures should be minimized and simplified. Also, one-stop investment promotion offices for IPPs, fuel sector, and transmission and distribution companies should be established at central and regional levels.
- J) **Grid Capacity and Access** The capacity of regional and provincial grids (transmission, sub-transmission, and distribution systems) should be expanded to keep pace with the increasing power-generating capacity. It would help to allay the fears of power producers about the quantity of power off-take. Private sector participation should be expanded for out-of-power plants and inter-regional high voltage transmission lines for the promotion of bulk-power wheeling and marketing to introduce competition in the power market. Multiple-buyers at the bulk power level will reduce the vulnerability of SEBs' default in escrow accounts, thus making IPP project financing more viable.

It is clear that a flexible approach and set of tools are required to reduce the constraints or barriers the team has identified. This report provides the power team's preliminary identification of constraints for private sector participation and recommendations on how USAID can provide technical assistance to the central and state government agencies in an effort to resolve these barriers and lower the risks to private sector participation. Input from the private and public sectors indicated that the USAID strategy will need to be implemented in three distinct time frames: short-term (next two years), medium-term (next five years), and long-term (next ten years).

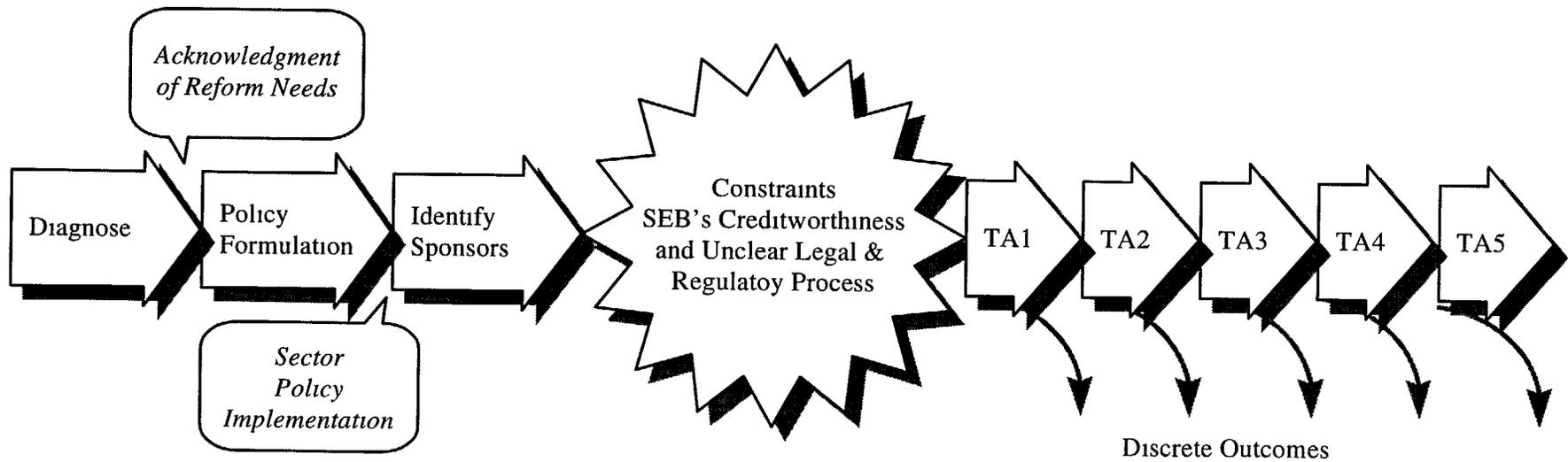
5.2 Priority Ranking of USAID's Technical Assistance

A list of technical assistance is included in **Table 5.1** based on the analysis of classification of recommendations of **Table 4.1** and **Table 4.2**. The following three levels of priority were assigned:

- A - Essential that action on the recommendation be implemented immediately, benefits will be realized in the short-term (two years)
- B - Recommendation will materially contribute to private sector investment, and specific technical assistance will be implemented within the medium-term (three years)
- C - Technical assistance will materially contribute to long-term (five years or more) sector performance, and specific action should be taken within one/two years

Figure 5.1 illustrates an example of USAID's specific role in removing the barrier for private sector investment.

Figure 5 1
 Example of USAID's Specific Role in
 Promoting Private Sector Investment



- TA1 Technical Assistance for the establishment of an independent Regulatory Commission
- TA2 Technical Assistance for regulation of tariff structure and levels at SERC
- TA3 Initiatives for private sector investment in generation, transmission and distribution
 Bid Document preparation, Concession Contract drafting
- TA4 Asset Management Program and Asset Valuation of Distribution Utilities
- TA5 Implementation of Distribution Joint-Venture and/or Concession Contracts

99

It is important to note that various parallel or simultaneous technical assistance will be required to remove all issues related to constraints such as “*Unclear Legal and Regulatory Process*” In two states, Andhra Pradesh and Karnataka, most of the front-end sector’s legal and regulatory policies are completed for the restructuring of the power sector. The consultants’ interviews with both SEBs indicate that USAID’s technical assistance for the implementation of SERC and tariff rationalization study would be most useful for accelerating private sector participation in generation, transmission, and distribution systems.

5.3 Recommendations on Functional Areas for USAID’s Technical Assistance

Our recommendations on functional areas for targeting USAID’s technical assistance are based on extensive consultations and dialogue with government officials (four state SEBs, MOP, PGC, PFC), industry representatives, and other multilateral/bilateral interest groups in the sector. Our approach to technical assistance recommendations is grounded in the view that, wherever possible, competition *in* or *for* the market is the most effective means of promoting and sustaining economic efficiency in a sector. However, we do recognize that in some cases where “natural monopolies” and network industries exist, the economic structure of a power market will require an effective and efficient regulatory framework.

Our key recommendations for coordinating technical assistance for all six functional areas of **Table 5.1** among the public sector entities (both state and central governments), are summarized in **Table 5.2** for power sector-specific institutional development efforts for a) Legal and Regulatory Framework, b) Generation System, c) Transmission System and Market Competition, d) Distribution System, and e) Institutional Capacity Building Studies and Seminars.

100

Table 5 1

USAID Technical Assistance Recommendations and Priorities
LOE Level of Effort

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p>Legal and Regulatory Transparency</p> <p>TA 1 Implementation of a State Electricity Regulatory Commission (SERC)</p>	<p>To establish an independent Regulatory Commission for tariff setting, customer protection and dispute resolution</p> <p>The general areas of proposed regulatory responsibility are the following</p> <p>Economic Regulation</p> <ul style="list-style-type: none"> • Distribution tariffs • Rate design • Financial analysis • Investment approval <p>Technical Regulation</p> <ul style="list-style-type: none"> • Licensing & Permits • System Performance • Technical Standards 	A	30	<p>Option 1 APSEB Option 2 KEB</p>

101

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
TA 2 Rules and Regulations for Central Electricity Regulatory Commission (CERC)	<p>Customer Service Regulation</p> <ul style="list-style-type: none"> • Quality of Service • Complaints • Consumer Protection <p>The purpose of this technical assistance is to streamline the overlapping regulatory functions between the central and state governments</p> <p>To develop a comprehensive policy for the jurisdictions of the central and state governments in the areas of</p> <ul style="list-style-type: none"> • Fuel import policies • Transmission sector participants • Power sector coordination • Policy support • Fuel transportation issues • Full divestment issues • Concession Agreements • Policy definition of social objectives such as rural electrification programs, agricultural tariffs and life-line rates 	B	40	MOP and CEA

102

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
TA 3 Model Bidding Documents for Generation, Transmission, and Distribution projects for private sector participation (BOO, BLT, BOOM, BOOT), and Concession contracts incorporating country risks for the fuel, transportation, and dispute resolution processes	To develop Bidding Documents of international standards and norms for the central and state agencies in the following areas <ul style="list-style-type: none"> • Distribution Joint-Venture projects • Concession contracts • Transmission BOT agreement • Fuel supply and transportation agreements • Others 	A	20	Reforming SEB (APSEB and KEB) and/or NTPC
Project Financing and Capital Mobilization				
TA 4 Conduct a Benchmark study for the SEBs	Perform the Benchmark study to illustrate Indian SEBs' technical, financial, and personnel productivity in comparison to international " <i>best practices</i> "	A	10	Option 1 Use KEB as sponsor of the study Option 2 Use APSEB as sponsor of the study
TA 5 Tariff reform and rationalization study	To improve SEBs creditworthiness	A	20	APSEB or KEB

103

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p>Opportunities For Private Sector Participation in Power Projects</p> <p><i>Green-field Projects</i></p> <p>TA 6 Assist state government in LNG terminal project and gas distribution feasibility study</p> <p>TA 7 Study for the planning of short-term and long-term fuel-linkage for power sector - coal, natural gas, imported LNG, petrol-coke, etc</p> <p><i>Rehabilitation and Modernization Projects</i></p> <p>TA 8 Model LROT projects documentation</p> <p>TA 9 Model condition assessment study for the LROT project</p>	<p>LNG will be a major source for power generation and gas utilization in the industrial sector in Tamil Nadu Objective is to rationalize the import of LNG and distribute gas optimally</p> <p>To develop a comprehensive fuel policy for the next generation of power sector projects</p> <p>To provide technical assistance to PFC, SEBs, NTPC, and NHPC to develop comprehensive policies for private sector investment in existing facilities</p> <p>To estimate the cost/benefit of power plant residual life extension and rehabilitation</p>	<p>A</p> <p>B</p> <p>A</p> <p>A</p>	<p>30</p> <p>15</p> <p>8</p> <p>15</p>	<p>TIDCO</p> <p>MOP/GAIL/Coal India/ ONGC</p> <p>NTPC, NHPC, PFC</p> <p>APSEB or KEB</p>

104

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<i>Transmission Related Projects</i>				
TA 10 Preparation of joint-venture transmission projects Bid Document, model concession contract, model power wheeling contract, etc , for institutional capacity building of SEBs and PGC	To improve the quality and completeness of transmission projects' Bid Documents for the private sector	A	10	APSEB and PGC
TA 11 Grid code and Independent system operator's guidelines	To provide comprehensive policies and guidelines for the IPPs, Distribution utilities PGC NTPC, NHPC, and SEBs generating units dispatch rules and regulations	A	5	APSEB or KEB
TA 12 Power Pooling and Settlement Agreement	To settle contractual payment agreement on a 24-hour basis	B	5	APSEB or KEB
TA 13 Regional (inter-states) and international (Nepal, Pakistan Bangladesh and Bhutan) power market development issues and options evaluation	To develop regional power market to reduce the over-burdens of coal-fired power plants in India	C	15	MOP
TA 14 Evaluation of benefits of transmission investment for mine-mouth coal-fired power plants	To mitigate the risk of coal transportation and transportation of 40% ash to remote power plants	B	5	MOP

105

USAID Technical Assistance Program	Objectives	Priority	LOE Person-Months	Counterpart Agency at State & Central Governments
<p><i>Introduction of Market Competition</i></p> <p>TA 15 Develop bulk-power market, power wheeling and transmission pricing for electricity banking, wheeling and third-party sale</p> <p><i>Distribution Utilities</i></p> <p>TA 16 Computerize distribution assets management program</p> <p><i>Institutional Capacity Building of Public Sector Entities (SEBs, MOP, CEA, NTPC, PGC, NHPC, CERC, etc)</i></p> <p>TA 17 Seminars on Procurement and international practices by bilateral lending agencies</p> <p>TA 18 Seminars on power projects (generation, transmission and distribution) financing mechanism (non-recourse project financing) and competition for private sector investments</p>	<p>To introduce competition in the bulk-power market This will also make financing of IPPs much more viable</p> <p>Asset management is the prerequisite for asset valuation and private sector participation in distribution utilities for joint-venture and concession contracts</p> <p>Capacity building of SEBs' procurement personnel</p> <p>Capacity building of central and state agencies</p>	<p>B</p> <p>A</p> <p>B</p> <p>B</p>	<p>5</p> <p>15</p> <p>4</p> <p>4</p>	<p>NTPC, NHPC PGC and SEBs</p> <p>Option 1 KEB Option 2 APSEB</p> <p>All SEBs, MOP, CEA, NTPC, etc</p> <p>All SEBs, MOP, CEA, NTPC, etc</p>

109

Table 5 2

**Summary Recommendations on Counterpart Agencies for
Implementing USAID's Technical Assistance**

Functional Areas for USAID's Technical Assistance Program	Counterpart Agencies
<p>1) Legal and Regulatory Framework</p> <ul style="list-style-type: none"> • Implementation of SERC • Rules and Regulations for CERC 	<p>Option 1 APSEB Option 2 KEB CERC, KEB or ASEB</p>
<p>2) Generation System</p> <ul style="list-style-type: none"> • Gas Distribution Study • Fuel-linkage for Power Sector Study • LROT Project Documentation • Condition Assessment Study • Model Bid Documents 	<p>TIDCO MOP/GAIL/ONGC/Coal India SEB or NTPC SEB SEB</p>
<p>3) Transmission System & Market Competition</p> <ul style="list-style-type: none"> • Bulk-power wheeling and transmission tariff study • Transmission Bid Document • ISO and Grid Code • Settlement Agreement • Regional Power Market Study • Transmission for Mine-mouth IPPs • Model Bid Documents 	<p>PGC PGC PGC PGC PGC PGC PGC</p>
<p>4) Distribution System</p> <ul style="list-style-type: none"> • Assets Management Program • Benchmark Study • Tariff Reform Study • Joint-Venture / Concession Bid Documents Model Bid Documents 	<p>KEB and/or APSEB CBIP KEB and / or APSEB KEB and/or APSEB</p>
<p>5) Institutional Capacity Building Studies and Seminars</p> <ul style="list-style-type: none"> • Procurement Seminars • Seminar on Non-recourse Project Financing • Competition in Bulk-Power Market • Power Pooling and Settlement Agreements 	<p>All SEBs, NTPC, PGC, NHPC All SEBs All SEBs All SEBs</p>

107

Annex 1 Private Power Projects in India

Asset sales

Orissa State Electricity Board has been restructured, and eventually both generation and distribution activities could be privatized. An independent regulatory commission has been established. Unbundling of generation from transmission and distribution activities has also occurred, with hydro and thermal generation plants being held separately.

Private management of distribution in one of the state's four networks commenced in September 1996 on a trial basis under contract to BSES, but this ran into trouble and the contract was terminated. The scheme may be revived as a joint venture. Rajasthan is adopting a similar joint venture policy.

The Orissa and Rajasthan privatization moves have been expected to result in similar measures by other states. Andhra Pradesh, Bihar, Gujarat, Haryana, Punjab, and Uttar Pradesh have shown interest. Progress is, however, likely to be slow, since the form of privatization and role of overseas investors remains unclear.

Private Power Needs

As much as 25,000 MW of the 57,000 MW needed by 2003 and 57,000 of the 142,000 MW cumulatively required by 2005 could come from the private sector.

Well over 80,000 MW of Indian private schemes claim some form of agreement. However, the cancellation of Dabhol threw most into uncertainty, especially those reached on a negotiated rather than competitive bid basis.

A number of Indian states have now solicited small-scale private power projects, and numerous proposals have been made, some of which are listed below. Other forthcoming schemes are numerous.

List of Projects in various stages are as follow

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Andhra Pradesh	Andhra Pradesh State Electricity Board (APSEB)	Coal & Hydro	1000 MW	<ul style="list-style-type: none"> • Under Solicitation • 800 MW Coal • 200 MW - Hydro •
Andhra Pradesh	Visakhapatnam - Hinduja National Power	Coal	1 040 MW	<ul style="list-style-type: none"> • Most clearances received including CEA • Counter-guarantee awaited
Andhra Pradesh - various sites		Naphtha		<ul style="list-style-type: none"> • 16 companies chosen for naphtha projects after solicitation
Andhra Pradesh - Ramagundam	BPL	Coal	520 MW	<ul style="list-style-type: none"> • CEA approval
Andhra Pradesh - Krishnapatnam B	BBI Power	imported coal-fired	500 MW	<ul style="list-style-type: none"> • Operational in 1999
Bihar - Chandrapur	Kepco	coal fired	780 MW	<ul style="list-style-type: none"> • Plant to be upgraded on a Lease Rehabilitate Operate basis
Bihar Nabinagar	Power Grid Corp	Coal mine-and-power scheme	1 000 MW	<ul style="list-style-type: none"> • Under Solicitation, re-bid solicitation by Powergrid • Further large schemes selling power to several states are planned for offer including complexes at Chandil and Renughat in Bihar

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Goa	State Govt of Goa	Naptha	280 MW	• RFP is under evaluation
Goa - various sites	Reliance			• Five small power projects chosen after solicitation
Gujrat - Ghogha	Gujrat Power Corp	Lignite	375 MW	• RFQ Under evaluation
Gujrat - Pipavav	GSEB	Naptha	615 MW	• Short-listing is completed
Haryana - Yammunagar	HSEB	Coal	700 MW	• RFQ To be issued
Himachal Pradesh Sawra - Kuddu	State Govt of H P	Hydro	226 MW 144 MW 70 MW 12 MW 800 MW	• Total Hydro projects identified in the State is 2000 MW • Status of RFQ and RFP Unknown
Karnataka - various sites			600 MW total capacity	• 14 small power schemes awarded to 10 consortia
Karnataka - Toranagalu	Jindal, Tractebel	Coal	260 MW	• CEA approval
Karnataka	K Electricity Board	Various Fuels	8 200 MW	• All hydro projects sites are identified
Karnataka - Bedthi	Karnataka Power Corp	Hydro	400 MW	• BOT status unknown

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Karnataka	Mangalore Power Company - China Light & Power, Cogentrix	Imported coal-fired	1 000 MW	<ul style="list-style-type: none"> Counter-guarantee received
Kerala - various sites			550 MW	<ul style="list-style-type: none"> 19 small power schemes awarded to 9 companies
Kerala - Manjeswar	Finolex Cables	naphtha/coal-fired	500 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala - Kannur	KPP Nambiar	naphtha-fired	500 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala - Cheemeni	BPL Power	naphtha/coal fired	500 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala - Kasargod	RPG Industries	naphtha/coal fired	778 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala - Mankara	Palakkad Enserch	naphtha/gas-fired	348 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala Vichinjam	Kumar	naphtha fired	300 MW	<ul style="list-style-type: none"> PPA signed solicited project
Kerala - Cochin	Cochin Refineries	Naptha	500 MW	<ul style="list-style-type: none"> RFQ Document Under Review

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Madhya Pradesh - Gwalior	Essar Power	naphtha/gas-- fired	330 MW	• PPA signed
Madhya Pradesh - Narsinghpur	Global Power	thermal	166 MW	• PPA signed
Madhya Pradesh - PENCH	Soros ABB	coal-fired	500 MW	• CEA approval
Madhya Pradesh	Bhilai Power CEA, SAIL, laarsen & Toubro	coal-fired	500 MW	• CEA approval
Madhya Pradesh	STI Power - STI GE Capital	oil-fired	347 MW	• CEA approval
Madhya Pradesh	Korba - Daewoo	coal fired	1 070 MW	
Madhya Pradesh Small Hydro in various locations	Madhya Pradesh Govt	Hydro	25 MW Av Size Total 500 MW	• None
Madhya Pradesh - Rargarh	Jindal Strips Genting Bhd	coal-fired	1,000 MW	• Proposal
Maharashtra Bhadravati	Central Indian Power Company	coal-fired	1,082 MW	• Mine-and-power scheme • CEA and PPA received

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Maharashtra - Patalganga	Reliance	naphtha/gas-fired	410 MW	<ul style="list-style-type: none"> Clearances received and PPA signed in 1996
Maharashtra Various Locations	Maharashtra State	Hydro Coal Naphtha	600 MW Pump Storage 400 MW P S 4 - 100 MW fossil fuel various locations	<ul style="list-style-type: none"> Total of 1,757 MW IPP projects are identified for private sector
Meghalaya Various Locations	Meghalaya State	Coal Hydro	1,000 MW 3 000 MW	<ul style="list-style-type: none"> Preliminary stage of development
Orissa	ICMC Power Corp & Hyundai	Coal	2000 MW	
Orissa	Southern Energy Inc	Coal	16 660 MW units Total of 10,560 MW	<ul style="list-style-type: none"> Pre in the sky project proposed by CEPA
Orissa	Ib Valley - AES	Coal	420 MW	<ul style="list-style-type: none"> Counter-guarantee may need revision following PPA changes
Orissa - Hirna	CEPA	Coal	3,960 MW	
Rajasthan - Jalpa and Kapurdi	Raj West Power	lignite-fired	900 MW 600 MW	<ul style="list-style-type: none"> Operational in 2000 Needs financing

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Rajasthan - Barsingsar	Hindustan DFC, Eastern	lignite-fired	500 MW	<ul style="list-style-type: none"> Operational in 2000 Awarded in Sept 1996
Rajasthan - Dholpur	RPG Enterprises	naphtha-fired	789 MW	<ul style="list-style-type: none"> Operational end-1999 Awarded September 1996 Needs Financing
Rajasthan - Thar	Energen	solar	200 MW	Solicited
Rajasthan - Thar	Amoco, Enron	solar	50 MW	
Rajasthan - Suratgarh	Raj State Elect Board	Coal	1000 MW	<ul style="list-style-type: none"> Under Solicitation
Various other Projects	RSEB	Coal Naptha & Renewables	4000 MW	<ul style="list-style-type: none"> Status unknown
Sikkim - Teesta -3	State Govt of Sikkim	Hydro	Total of 3000 MW	<ul style="list-style-type: none"> Various Preliminary stages of development
Tamil Nadu - Basin Bridge	Vasavi Power	diesel	200 MW	<ul style="list-style-type: none"> Operational late 1998 First PPA signed in Tamil Nadu
Tamil Nadu - North Madras II	Videocon	coal-fired	1 050 MW	<ul style="list-style-type: none"> Operational in 1999 CEA approval

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Tamil Nadu - Pillaiperumalnallur	InteGen	naphtha/gas— fired		<ul style="list-style-type: none"> • PPA signed • 20 liquid-fueled short gestation projects awarded in 1997
Tamil Nadu - Tuticorin	SPIC	coal-fired	500 MW	
Tamil Nadu - Ennore	Trisakthi	coal-fired	500 MW	
Tamil Nadu - Cuddalore	Cuddalore Power	coal-fired	1 320 MW	<ul style="list-style-type: none"> • Solicited
Tamil Nadu - Encore	Tamil Nadu Industrial Dev Corp (TIDCO)	LNG	2000 MW	<ul style="list-style-type: none"> • RFQ Under Evaluation
Tamil Nadu Jayamkondam	TIDCO	Lignite	1500 MW	<ul style="list-style-type: none"> • Status unknown
Tamil Nadu	Zero CMS	Lignite-fired	250 MW	<ul style="list-style-type: none"> • Counter-guarantee awaited
Uttar Pradesh Rosa	IndoGulf PowerGen	coal-fired	567 MW	<ul style="list-style-type: none"> • CEA approval
UP Pratapur	Reliance Industries Ltd	Coal	2000 MW	
West Bengal - Balagarh	Balagarh Power	Coal	500 MW	<ul style="list-style-type: none"> • CEA approval

Project Location	Sponsor	Fuel	Capacity in MW	Remarks
Various Seaboard Sites	Enron Intl Corp	LNG	Total of 10,000 MW	<ul style="list-style-type: none"> No Comment
Various Parts of India	National Thermal Power Corp BSES Indian Oil Corp	Coal Naptha Gas	15,000 MW	<ul style="list-style-type: none"> NTPC expects to raise about \$ 7 7 billion over next ten years About \$ 3 3 billion through international capital market
Haryana - Panipat UP Mathura Gujrat Baroda	Indian Oil Corp	Naptha	300 MW 110 MW 500 MW	<ul style="list-style-type: none"> Joint-Venture Partners and project financing status unknown

India Infrastructure Needs Assessment

SECTION 3

Roads Sector

Prepared by

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Tillman Neuner

India Infrastructure Needs Assessment

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Table of Contents

Abbreviations and Acronyms	1
1 0 State of Sector and Improvement Needs	1
1 1 Road Network and Traffic	1
1 2 Road Administration	1
1 3 Improvement Needs	2
2 0 Review of Private Participation	3
3 0 Constraints on Private Sector Participation	7
3 1 General	7
3 2 Institutional Constraints	7
3 3 Procedural Constraints	8
3 4 Financial Constraints (Toll Roads)	10
3 5 Financial Constraints (All Roads)	11
4 0 Recommendations for USAID Interventions	13
4 1 General	13
4 2 Relieving Institutional Constraints	13
4 3 Relieving Procedural Constraints	14
4 4 Relieving Financial Constraints	15
Annexes	
Annex 1 Salient Features of the Government of India Policy on Private Sector Participation on National Highways	
Annex 2 Mission Statement of NHAI	
Annex 3 MOST Assessment of Development Needs on National Highways up to 2010	

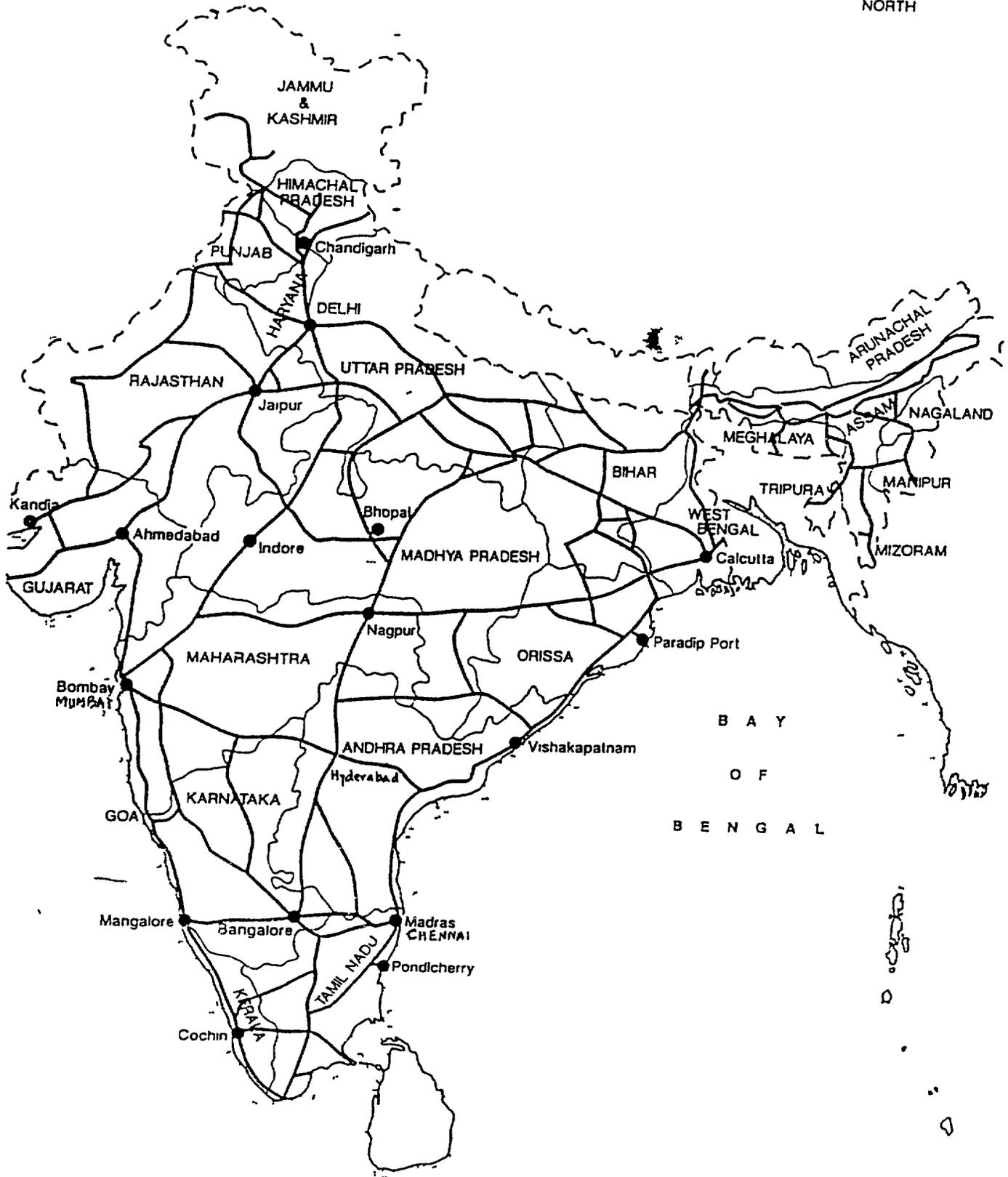
- Annex 4 List of BOT Projects on NHs Already Contracted Out to Private Investors
- Annex 5 Narmada Bridge on NH 8 in Gujarat
- Annex 6 Thane-Bhiwandi Bypass on NH 3 and 4 in Maharashtra
- Annex 7 Bangalore-Mysore Infrastructure Corridor in Karnataka
- Annex 8 Security for Loans to Concessions Based on Tolls
- Annex 9 Constraints and Proposed USAID Interventions
- Annex 10 Choice of State for USAID Intervention

Abbreviations and Acronyms

ADB	Asian Development Bank
AITD	Asian Institute of Transport Development
BOT	Build-Operate-Transfer
DBFO	Design-Build-Finance-Operate
FHWA	Federal Highway Administration
IDFC	Infrastructure Development and Finance Company
IL & FS	Infrastructure Leasing and Financial Services
MDR	Major District Roads
MOST	Ministry of Surface Transport
NH	National Highways
NHAI	National Highway Authority of India
OECD	Overseas Economic Cooperation Fund
PWD	Public Works Department
SH	State Highways
TIDCO	Tamil Nadu Industrial Development Corporation
USAID	United States Agency for International Development

121

PRIVATE PARTICIPATION IN INDIA S ROAD SECTOR
National Highways Network



INDIAN OCEAN

1.0 State of Sector and Improvement Needs

1.1 Road Network and Traffic

The road network in the country is as follows

- Primary roads comprising National Highways 34,608 km
- Secondary roads comprising State Highways 128,622 km
- Other roads comprising major district roads, other district roads, village roads, municipal roads
2,737,080 km
2,900,310 km

Under the Constitution, responsibility for the development and maintenance of National Highways (NHs) (see map) rests with the central government while all other roads are the responsibility of the state governments concerned. The respective governments are empowered to enact legislation governing various aspects of roads. Roads currently carry about 80% of the passenger traffic and 60% of freight traffic. Passenger traffic is expected to rise from the current level of 1,200 billion passenger km to 2,900 billion passenger km in 2010, and freight traffic from 500 btkm to 1,500 btkm during the same period.

1.2 Road Administration

Presently, nearly all NHs are being developed, maintained, and managed under an agency system. The Public Works Departments (PWDs) of the respective states oversee execution of the work, although a few sections are with the Border Roads Organization. The Ministry of Surface Transport (MOST) has overall responsibility including planning, budgeting, and standardization. The National Highways Act of 1956 governs policy regarding these roads. The Government of India under an Act of Parliament in 1988 established the National Highways Authority of India (NHAI). The execution of externally aided projects on National Highways has been entrusted to NHAI. Since then, arrangements have been made for NHAI to receive the loan assistance directly from the World Bank, ADB, etc., with guarantees from the Government.

State Highways (SHs) and Major District Roads (MDRs) are under the control of PWDs of the states and union territories, and their subdivisions. Rural roads are mostly with rural engineering organizations attached to the Departments of Rural Development. The PWDs are traditional agencies handling a variety of civil works and only in some cases have road functions been made

a separate unit of PWD. The road functions of PWDs need to be restructured to cater for an expanded and improved roads system, an activity that is now under way in several states

1.3 Improvement Needs

For various reasons, particularly to reduce dependence on imported oil, Government policy dating back to pre-Independence has sought to throttle the development of road transport and the expenditures on roads. However, traffic on roads has nonetheless grown rapidly and, as a result, the development of the road network has not kept pace, both in terms of quality and quantity. On the one hand, the network now needs expansion to provide connections by paved road to all communities, currently only five villages out of ten have been connected with all-weather roads. On the other hand, due to resource constraints, the improvement of main roads—that is, NHs and SHs (together 163,230 km)—has been undertaken in the past as a staged development process, by spreading resources thinly and widely over the main arteries. This has led to deficiencies in meeting the needs of heavy traffic in terms of road capacity, structural strength of road pavements, and inadequate bridges. The problem is compounded by insufficient attention to post-construction management and maintenance of assets and reckless overloading of vehicles, especially two-axle goods vehicles.

In terms of road width, the current position in respect of main roads is as follows

Total Length		163,230 km
of which		
a)	Four Lane	3,000 km (2%)
b)	Two Lane	56,000 km (34%)
c)	Single Lane	104,230 km (64%)

For reasons of safe overtaking and passing, the main roads must have a minimum of two-lane carriageway (7 m wide) in line with the international practice. In addition, about 25,000 km of high traffic density corridors need to be upgraded to four lanes (including some expressways). Moreover, these main roads, although they constitute less than 6% of the total road network, carry more than 60% of the total road traffic. This has resulted in a high cost of vehicle operation, wastage of fuel resources, and increased accidents, environmental degradation, and journey time.

Because of these road conditions, transport throughput is severely eroded. The commercial vehicles are able to go only an average of 200-250 km per day compared to 400-500 km per day in developed countries. There are still a number of railway level crossings that are in great need of replacement. According to some estimates, the economic losses due to inadequate capacity and poor riding quality are on the order of Rs. 100 billion per annum. Such losses obviously affect the nation's economy.

124

2.0 Review of Private Participation

In June 1995, the National Highways Act of 1956 was amended to permit participation of the private sector in development and maintenance of NHs, and to allow the project sponsor to collect and retain the tolls ('fees' on NHs as the word 'toll' is a state subject under the Constitution) Central government has also taken over powers to acquire land for the NHs However, the institutional arrangements for acquisition of land as per the modified Act are still to be put in place MOST entrusted NHAI with implementation of private sector participation on NHs Salient features of the current policy and incentives offered for encouraging private sector participation are given in Annex 1

NHAI is an autonomous body and is empowered to raise funds from the market and by collecting fees on the use of NHs, in addition to receiving funds from the Government As of now, NHAI has jurisdiction over about 1,000 km of NHs Most of these roads are built to international standards under Asian Development Bank (ADB) or World Bank financing, or are proposed to be upgraded under these programs (NHAI mission statement is at Annex 2) In the meantime, nearly all construction on NHs remains under MOST

In June/July 1995, the NHAI invited bids for conducting feasibility studies for seven Super National Highways connecting major cities and ports in India (length 13,000 km) The projects found to be feasible were to be awarded to private parties on a competitive basis for development in a BOT format Although many of the big Indian business enterprises had shown interest in the offer, not much headway was made For the time being, the Government has shelved the entire process—possibly due to the high capital cost and doubtful viability of the projects and the lack of funds for land acquisition

Current MOST policy, deriving from the most recent change in Government, is based on removal of deficiencies on the existing NH network This will require an expenditure exceeding Rs 800 billion in the next 10-15 years (Annex 3 gives a breakdown of the schemes of upgrading) Of these, the areas for private investment identified so far are as follows

- Four-laning of existing roads 4,000 km
- Major Bridges 50 nos
- Railway Overbridges 50 nos
- Bypasses around congested cities 30 nos
- Expressways (new alignments) 1,000 km

Pursuant to this policy, MOST mandated NHAI in 1997 to undertake four-laning of existing NHs and a limited number of access-controlled expressways in high traffic density corridors The four-laning sections to be taken up initially are high-priority sections of the Delhi-Calcutta-Chennai-Mumbai-Delhi quadrangle that will be executed wholly under concession arrangements or that will be financed by foreign lenders and the Government

125

The Government's current construction program on NHs is being funded for the most part from budgetary resources in addition to funds borrowed from the World Bank, ADB, and Japan's Overseas Economic Cooperation Fund (OECF). So far there has been no private participation on these foreign-aided schemes. However, a small number of government-financed schemes (10 bridges and 86 km of bypasses), executed by MOST directly or by NHAI, has been contracted to private investors (see List, Annex 4). In financial terms, these projects are estimated to cost Rs 4.4 billion. These schemes are thus only small- and medium-size projects.

Four-laning projects under NHAI are yet to be initiated. The NHAI is now in the bidding process for the four-laning of Hosur-Krishnagiri (NH 7) and Chinglepet-Tindivanam (NH 45), both in Tamil Nadu and Jaipur-Kishangarh (NH 8) in Rajasthan, covering a total length of about 200 km. For levy of tolls, only an open system of toll collection can be adopted as there is no control of access on such roads. This would call for a careful study of traffic patterns and location of toll plazas to take care of segregation of local and through traffic.

For State Highways (SHs), several states have embarked on major programs to improve these roads. The World Bank, ADB, and OECF are providing loan assistance. In addition, these institutions are helping several states to finance restructuring of the PWDs, this would provide an improved institutional framework for private participation in the SHs of these states. A number of states have already initiated private participation in their road sectors as they required no new legislation to authorize the imposition of tolls. The following are among the salient achievements:

- **Maharashtra** has already proceeded with several projects in the state sector and has announced a number of bold measures to encourage private entrepreneurs. It has also set up a State Road Development Corporation for this purpose. This is an autonomous body and has already raised Rs 12 billion from the market. Contracts worth Rs 7 billion have been awarded already for construction of an expressway between Mumbai and Pune and several flyovers in Mumbai city.
- **Rajasthan** and **Madhya Pradesh** have already attracted private entrepreneurs for small-size bridges and bypasses. The Government fixes toll rates and offers are invited on the basis of lowest concession period. No traffic guarantees are given.
- **Gujarat** has invited offers for 4-laning of a few SHs with Infrastructure Leasing and Financial Services (IL & FS) being one of the promoters.
- **Andhra Pradesh** has set up the Andhra Pradesh State Road Development Corporation to take up road and bridge projects through the private sector. The Corporation has mobilized (by private placement of bonds) an amount of Rs 4 billion with the guarantee of the state government. Andhra Pradesh has also identified seven arterial corridors to be posed to the private sector, and they plan to undertake technical and financial engineering studies of these corridors through foreign and domestic consultants.

126

- **Haryana, Uttar Pradesh, and West Bengal** have also initiated the process of private participation in roads
- **Tamil Nadu** has set up a Tamil Nadu Industrial Development Corporation (TIDCO) for taking up infrastructure projects. TIDCO has collaborated with Transroute International France and IL &FS to construct and operate toll roads connecting industrial areas
- **Karnataka** has entrusted the Bangalore-Mysore Infrastructure Corridor to a private developer on a BOT basis, and the Karnataka branch of the Federation of Indian Chambers of Commerce and Industry plans to float a corporation to help finance infrastructure projects. The state government has set up a Department of Infrastructure to coordinate the activities of various infrastructure sectors under one umbrella

ADB has also come up with a new private financing initiative. They are cooperating with IL & FS in financing a bridge across the Yamuna River from New Delhi to the new community of NOIDA

The pattern encountered so far in private sector participation in roads is summarized below

- Public agencies have solicited proposals for the provision of toll roads on the basis of bidding documents that left most of the design work to the bidders
- Recovery of the bidders' investments could be either with or without public subsidy, and maximum rates of toll typically were specified in the request for bids, with bidders having the option of specifying the actual (lower) rate of toll or the maximum period of toll collection, or both. It is evident that traditional toll collection will not be practicable for all road upgrading schemes
- In most cases, public agencies provided some form of guarantee, either for the transaction as a whole or for the traffic or some other aspect of the transaction
- The sponsoring private party could be either a contractor (of varying degrees of skill) or a business enterprise with little or no experience in road building which would associate itself with or contract with one or more construction firms
- Private sector road schemes have been highly leveraged and have required the support of loans from established financial institutions or other sources
- New financial institutions with varying degrees of private participation have been established (e.g., in Maharashtra, Tamil Nadu, Andhra Pradesh) or are in the process of establishment (e.g., in Karnataka) to provide finance for infrastructure (including road) projects. Such institutions have been raising funds by issuing bonds, usually with tax preferences. These bonds are nearly always repayable in substantially less than 10 years

- At least in some cases the return on the investor's equity is likely to be well over 20%

The following typical schemes are described in greater detail in the Annexes to this chapter

Second Narmada Bridge	(Gujarat)	Annex 5
Thane-Bhiwandi Bypass	(Maharashtra)	Annex 6
Bangalore-Mysore Infrastructure Corridor	(Karnataka)	Annex 7

128

3.0 Constraints on Private Sector Participation

3.1 General

The liberalization policy was announced in 1991, but despite the issuance since of several policy statements and the work of various implementing bodies, few road schemes with private participation have been built thus far. Nevertheless, numerous obstacles have been overcome in some cases and constraints are not so severe that they cannot be surmounted with persistence and ingenuity. Moreover, it is not clear whether the schemes that have been built, or those in the development and implementation stage, will result in an appropriate balance between the public and the private sector.

The slow speed with which the schemes are progressing is caused in part by the efforts of inexperienced public administrations to avoid entering into improvident concessions. In addition, the road sector carries the immense inherited momentum of road building and maintenance by contractors working under the direction of government engineers. Road building with private participation involves a major cultural shift in direction, requiring for the first time financial arrangements by private entrepreneurs and large-scale use of private consultants and contractors. Currently in India, such firms do not exist in adequate numbers and with adequate staff to deliver complete road works according to designs suited to current traffic conditions and subject to objective criteria. Moreover, the projects are being offered in some cases without undertaking proper engineering and financial studies by the Government that would offer a level playing field to bidders and that the Government would equip with some reasonable benchmarks to evaluate the offers.

Institutional and Procedural constraints thus represent major obstacles to private participation in the roads sector. Another constraint is represented by **Financing** problems. On the one hand, private parties cannot achieve satisfactory rates of return (under Indian conditions) without receiving loans on favorable terms to complement their equity investment. On the other hand, lenders are unwilling to proceed without adequate security, but the assets created by the schemes (the roads) are too illiquid to protect the lender. The transactions will need to be reconfigured or other security will need to be provided for the loans to be made. Funding from dedicated road funds or other predictable sources would be another means to bridge the financing gap. These constraints are discussed briefly in the following paragraphs.

3.2 Institutional Constraints

Until very recently all roads in India were built and maintained by some sort of public works agency with large establishments, using, in addition, many small labor and supply contractors. The same system applied to small bridges and culverts, but large bridges were erected by larger construction firms working with their own designs. These public works agencies have great difficulty in accommodating private concessions to their normal way of working; the agencies will need to shift from designing and controlling works by building methods to controlling them by performance specifications. Some staff will become superfluous and others will need new

skills. The conditions in individual public work agencies may deviate somewhat from this pattern, but the main features are the same.

By contrast, the NHAI, although created nearly 10 years ago, has become active only recently. It has a small staff (under 100) and little or no commitment to traditional methods. Unlike public works agencies, NHAI is committed to using contracted help in all its operations and to fostering private participation. However, NHAI's staff also have to orient themselves to managing with the large-scale use of consultants and contractors, and NHAI is faced with the severe shortage of Indian firms experienced in modern methods of road design and construction. Only a few construction firms have equipment for large-scale works, and no equipment is available to others from rental agencies. This is one reason for the limited numbers of large-size road contractors.

NHAI's staff thus needs to be augmented in deliberate stages and trained to perform and cope with its new tasks. A business plan that is being prepared with World Bank assistance needs to be elaborated and implemented on the basis of a program of devolution of roads from MOST to NHAI. A program for maintaining NHAI roads needs to be developed in which the private sector will play a major role.

At the same time, a program will be required to develop capacity within the Indian road consulting and contracting industry to serve the requirements of NHAI. Some progress in this regard has already been made in connection with ADB and other foreign-aided projects, but further experience is needed by Indian firms working independently so that NHAI will be able to function efficiently.

Whereas the institutional effort required at NHAI is a "greenfield" effort of building in a new, small organization, the opposite problem is posed at the state level. Here a private sector activity will need to be accommodated in a very large, long-established PWD with entrenched procedures and cultures. State PWDs are characterized by professional staffs unfamiliar with using consultants who provide complete designs and contractors who work to such designs. These professionals are experienced instead in self-designing works and carrying them out with large establishments and large numbers of small contractors. Several of the state PWDs are undergoing restructuring with massive foreign assistance, these programs include some activities intended to give greater scope to the private sector. However, implementation is not complete. Other state PWDs have retained their traditional formats. The team visited states in both categories.

3.3 Procedural Constraints

If NHAI and state PWDs are to make greater use of the private sector in building and maintaining roads, they will need to develop and install procedures not available currently in India. While a few road projects have gone forward with private sector participation and considerable effort has been expended in developing techniques to this end, much work remains to make the process fully efficient and transparent. In many cases, detailed designs and cost estimates were not available to Government negotiators, with the Government not having spent the money for this work and the concessionaire being made responsible for it. Bids thus have

been received and concessions negotiated without the Government side having a clear description of the product the concessionaire is obliged to deliver and without the Government having an objective basis for comparing proposals. Moreover, financial analyses were not prepared on a value-engineering and present-worth basis to allow the Government negotiators to compare the technical and financial merits of various proposals. Although Government engineering staff are unlikely to be familiar with value-engineering and present-value analyses, they would not be able to apply them, in any event, with the documentation being generated at present. Finally, existing procedures for control of the quality of the concessionaire's work are inadequate and need to be made more exacting—both while the road works are being built and during the operation stage.

NHAI will need to provide maintenance for roads not contracted out under concessions. It intends to execute this work by contract and will need to develop appropriate documentation and procedures for contracting and overseeing such maintenance. This will provide another important opportunity for private participation in the road sector.

Private participation in building roads is hampered by the need to obtain a plethora of governmental clearances. While getting clearances is included in the concessionaire's due diligence obligations and is part of the normal business process, it slows down the concessionaire's work and makes it more costly. It may indeed discourage some who might otherwise come forward to take up a road project. Some improvements in the clearance process have already been made, but further streamlining is needed.

Private Indian contractors will inevitably be essential players in any scheme for private participation in roads, either as promoters or partners of the concession or as subcontractors to the concessionaire. However, the number of properly equipped road contractors is still limited and expansion of this industry will occur most efficiently if contractors can avoid investing in a full equipment park and rely instead on equipment rental firms for some of their needs, as is the practice elsewhere in the world. The absence of an equipment leasing industry thus is an important constraint on greater private participation in the road sector.

Concessionaires will inevitably face difficulty in protecting their roads against damage by overloaded vehicles. Roads subject to such abuse will not last, and serious disputes will arise between the Government and the concessionaire as to who should bear the cost. The issue of overloaded vehicles has been studied in India for a long time and has generated many reports. The problem persists. It is tied up not only with problems of enforcement and the benefits to the police from lax enforcement, but also with the availability of larger, less damaging vehicles from Indian manufacturers and with under-capitalization of truck operators. The problem needs to be examined in the context of road concessions so that it does not become another constraint to private participation in the sector. Allied to this is the movement of containers, which is more suited to multi-axle vehicles. The Asian Institute of Transport Development (AITD) is trying to look at this aspect as part of a comprehensive trucking operations study in the country. They would need to focus more attention on this issue.

3 4 Financial Constraints (Toll Roads)

Two major constraints need to be addressed

- Finance for road design
- Finance for road provision

If private concessionaires are to bid efficiently for road construction, all bidders have to bid on the basis of the same design. Therefore the preparation of proper design must be financed primarily by the Government, which currently lacks the necessary funds to design even urgently needed road improvements. With regard to road provision, under the current system the Government is expected to support private sector financing by sharing the costs or by guaranteeing such factors as the completion of the work or the levels of toll-paying traffic to be carried out on completed roads. Sharing costs and risks through governmental guarantees raises many complex problems regarding the appropriate level of responsibility of the public and private sectors on a toll road project. These issues require intensive analysis, which should be undertaken on behalf of the Indian authorities. Dedicated road funds have some application in the case of toll roads but their major role is in connection with commercialization of the road system.

Private participation in road projects depends on the establishment of clear and fair legal relationships between the concessionaire and the Government, and on bankability of the transaction so that the concessionaire can raise loans to cover part of the investment. Without access to commercial loans, many transactions will not be feasible and the total volume of work that could be done with private participation will be greatly reduced. The issues relating to financial structures of concessions are discussed in Annex 8. These problems are technical, financial, and legal, but also involve broader policy questions, particularly for such intermediaries as Infrastructure Development and Finance Company (IDFC). Considerable work has been done on a case-by-case basis in developing legal documentation for road concessions, but a ready source for consultation to solve outstanding questions, such as *force majeure* and additional issues as they arise, should be available to facilitate the concession process. Issues relating to providing better security to financing institutions as well as more general issues related to the supply of capital to concessions need, in addition, to be dealt with systematically on a policy basis.

Private participation in road projects requires widespread knowledge of this approach both among the concerned officials at the union and state levels and among the interested parties in the private sector. A dissemination program for this purpose is needed and should last for several years.

The need for good roads, for reliable funding to support them and for a receptive climate for private participation in roads requires documentation in a manner that invites public support, particularly by the business community. In addition, road users in general and the business community in particular need to become fully aware of the benefits of good roads to the economy and of the vital role the business community and road users can play to promote the

funding and development of the road system with major private participation in the provision of roads

3.5 Financial Constraints (All Roads)

The comments made so far have addressed the constraints to private participation in the road sector based on the collection of tolls. Tolls are feasible in only a limited number of circumstances such as new roads, bridges, and bypasses. Other means should be considered to apply private sector techniques to the remainder, the bulk of the road system. Foremost among such techniques is commercialization, which the India Infrastructure Report, prepared under the chairmanship of Dr. Rakesh Mohan, described as “a new wave, a new necessity”.

If roads were commercialized, road companies could raise investment and loan funds in a commercial manner on the basis of their resources. But how, in the absence of tolls, could a commercial road company get paid by its customers, the road users?

An effective and convenient way of empowering road users to pay for roads would be through dedicated road funds, run by boards on which road users would be represented, and which would get their revenues from surcharges on fuel and from license fees imposed on heavy-axled vehicles, preferably set at levels equivalent to the road damage caused by them.

The level of funding should eventually be determined by road users' representatives, but would initially have to equal current road funding levels. The managers of these road funds would have but one function – to distribute revenues to the commercial road companies, whether private or public, in proportion to the traffic carried on their roads. Such an arrangement would not be unique to India. The UK Highways Agency distributes funds in this way to private concessionaires under the Design-Build-Finance-Operate (DBFO) system which enables the private sector to finance and improve selected British roads. The Highways Agency specifies the improvements on selected road sections and invites the private sector to bid for concessions to build and maintain them and be paid an agreed price per unit of traffic on the improved road. This agreed price is determined by the bidding process and the traffic risk is shouldered by the concessionaire, not the Highways Agency. Payments of this kind, based on traffic counts, are known in the UK as “shadow tolls”.

The rule of the funds following the traffic would be necessary to protect the management of the road funds from pressures to finance roads built for purposes other than serving traffic needs.

Road funds, with designated revenues and under independent management, at both the union and state levels, could thus be critical to a road program with private participation. Such schemes exist in India but are not yet very much elaborated. Further effort in this regard is needed.

Commercialization, which need not necessarily involve privatization, would require the conversion of current road management into profit-making road companies, which would be paid on the basis of a fixed tariff per vehicle mile. A commercialized road system would enable all of its elements to be improved by the private sector and should also be open to competition from new, privately provided facilities such as the proposed Bangalore-Mysore expressway.

A forthcoming World Bank book (*Commercial Management and Finance of Roads*, by Ian Heggie) describes the concept of commercialization as follows

“Roads are big business and should be managed like a business. They should be brought into the marketplace and put on a fee-for-service basis. In other words, the road sector should be commercialized, which involves

- creating an arms-length agency to manage at least the main road network on a commercial basis,
- introducing an explicit road tariff,
- making sure that road users pay for extra spending on roads,
- depositing the proceeds from the road tariff into a road fund,
- appointing a representative public-private board to oversee management of the road fund, and
- ensuring that all works financed from the road fund are subject to rigorous technical and financial auditing ”

Whether the above description is, or is not, entirely appropriate for India, now could be the time to consider the commercialization of all India’s roads, or at least of all its main roads, as an alternative to the current attempts to rely only on toll roads for private participation in the roads sector

The essential feature of a commercialized road system is that the road fund would be supported by a compulsory stream of revenues derived from road users. A fund supported by statutory revenues would, of course, be able to float private loans for road construction on the basis of such revenues. Moreover, road users would presumably be willing to support additional levies in themselves in return for improved roads. While revenues to the fund would be raised by the Government, their use would reflect private sector principles. In the long run, the fund may even be fed by revenues raised through assessment by the road users themselves which would require a statutory scheme to ensure that all road users would participate and to mediate a position binding on all road users

Accordingly, the recommendation regarding financial constraints includes a study to help put road financing in India on a commercial basis

4.0 Recommendations for USAID Interventions

4.1 General

This section of the report makes recommendation for USAID interventions to help remove the identified constraints. One of the chief constraints already described is the need to expand the pool of Indian civil engineering firms and organizations with related skills to assist in the design, bidding, selection, and supervision of works to be handled with private participation. For that reason the report recommends the use of Indian firms as primary contractors wherever possible, to be supplemented by foreign advisers where essential skills are lacking. This approach is intended to establish the practice of contracting out and to raise the skills both on the side of the Government and its contractors. The initiatives proposed for USAID consideration are summarized in Annex 9, with very broad preliminary indications for the duration of each activity and the level of effort envisaged. The Annex also shows the proposed counterpart agency in each case. It is clear from the Annex that substantial costs will be incurred in rupees, and the assumption is made that some of these costs will not be for the account of USAID but of a counterpart agency in India. Finally, care will be required to ensure that USAID assistance is well coordinated with that of other external aid agencies in the road sector.

4.2 Relieving Institutional Constraints

NHAI needs to be able to plan its future operations on the basis of reasonably firm indications of the work that MOST will entrust to it. Such an exercise will reflect the decisions of MOST on schemes that MOST wishes NHAI to execute and the capacity of NHAI to undertake work on the roads MOST wishes to entrust to NHAI. Obviously NHAI should have adequate lead time to prepare the projects and marshal its resources. An initiative by USAID would therefore be very useful to assist MOST and NHAI to plan a program of NH devolution for an initial five-year period. USAID could facilitate this process by making use of the resources of the U.S. Federal Highway Administration (FHWA) that has long experience in the operation of a national roads program within a federal system. It is understood MOST is in touch with the FHWA to promote private sector participation in the highway sector.

Once NHAI has a program that it must address, it needs to prepare a work plan to reflect the program. Subsequent to the work plan, NHAI would need to examine the resources available in its own staff and within India to determine what actions would be required to gear itself up to discharge the work plan. A program to recruit and train staff and to engage consulting help must also be developed. USAID assistance in these efforts would be very helpful to enable NHAI to meet its work plan.

USAID intervention in the much more daunting problems of the state PWDs will need to be limited to the specific issues of private participation in road schemes, including maintenance-by-contract. The team has carefully reviewed the situation in the four states it visited and concluded that USAID's efforts at the scale envisioned would best be applied in the State of Karnataka (Annex 10).

No specific initiatives are recommended to address institutional issues at the Karnataka PWD, but procedural interventions recommended below will have some impact on the PWD culture

4.3 Relieving Procedural Constraints

NHAI is entrusted with two types of NH schemes, those prepared and executed under external financing and those under NHAI or Government financing, with or without private participation. The foreign-aided schemes have benefited from international consultancies that provided Indian design firms the opportunity to adapt to international standards of design, construction, and supervision. NHAI must now develop these systems for use on schemes not funded externally and put out on concession, making full use of Indian firms as primarily responsible parties and only supplemented by foreign advisers working with these firms to fill skill gaps. These consultancies could assist in project services covering designs, bidding and tender award, concession negotiations, and construction supervision for schemes not covered by external lenders, one each on a NH and a SH (in Karnataka) a bypass, a major bridge, and a rail flyover. No schemes of these types are included in the foreign-aided projects. In addition, a scheme would be included to improve a SH in Karnataka to the four-lane standard (NHs to four-lane standard are already included among externally aided projects and thus no project of this type need be assisted under the USAID initiative). This intervention will serve to set a pattern for works built under concessions by NHAI without the participation of external lenders. Similarly, the intervention will help Karnataka PWD to develop procedures for these types of road works on a concession basis and should provide a pattern for use by other PWDs. The USAID initiative would also include an element to disseminate the procedures and documents to other states.

USAID should also support assistance to NHAI to help that agency in meeting the upkeep requirements on its roads by contract maintenance. An Indian engineering firm working with a foreign maintenance engineer is recommended to take the lead on this study to ensure that recommendations are developed with full appreciation of the complexities of Indian public works practice. Contract maintenance is also being developed at the state level under foreign-aided schemes, but the situation of NHAI is quite different (as noted above) and deserves a separate effort. Moreover, the dissemination of the NHAI effort, which is also included in the USAID intervention, should be combined with the results of other similar studies to ensure greater impact. A similar effort is recommended for the Karnataka PWD.

The problem of multiple clearances merits a study of the clearance process and recommendations for consolidation and simplification. A consultancy by an Indian expert is most likely to address the full complexities of the process and the points where some changes are likely to be accepted.

Thus far only large Indian firms have been able to acquire equipment needed to undertake major road works. Smaller firms that are not sufficiently capitalized have been excluded. A system of equipment leasing commonly used in other countries is not available in India for road construction machinery. It is recommended that USAID assist with a consultancy to NHAI and IDFC to determine how such equipment leasing could be established and to assist in a program to promote such firms.

A USAID intervention in association with NHAI and AITD to address the problem of overloaded vehicles could substantially improve the quality and longevity of Indian roads and would assist in making private participation in roads more feasible and effective. As roads are improved and larger articulated vehicles gain greater acceptance, particularly in the context of container movements, a more systematic approach to the problem may become possible. Better compliance may be achieved by concentrating enforcement on major improved roads and by coupling these efforts with toll procedures. Indian expertise will ensure that the recommendations allow for the full complexities of Indian conditions, and a foreign expert will supply the experiences from other countries, particularly developing countries with similar overloading problems.

4.4 Relieving Financial Constraints

With India's expanded roads program and especially with increased reliance on private participation, USAID can provide help to the central and state governments in elaborating existing initiatives toward dedicated road funds. The Rakesh Mohan Committee has made such a recommendation and both MOST and the Government of Karnataka are interested in pursuing these concepts. The United States has had long experience with such funds at both federal and state levels and U.S. experts are available to assist an Indian expert in analyzing the problem to suit Indian conditions and to devise a solution that would work there. The team recommends that USAID support such an initiative—both in terms of the support such funds could give to toll roads and, more importantly, in terms of the basis such funds could provide for a fully commercialized road system to help put road financing on a commercial footing. Collateral issues such as control and management of the fund, the use of road boards, permanent counting stations, and shadow tolls, and electronic pricing should also be included. The study should be done at the union level and in Karnataka.

The team recommends a consultancy to investigate technical problems relating to security arrangements for loans to concessionaires. These are partly financial and partly legal problems and require, in the first instance, expertise in Indian financial practice and legal systems. However, foreign expertise will also be required to provide examples of practice elsewhere which might possibly be adapted to local conditions. This consultancy should be based at IDFC and NHAI. Consultancy help should also be available to IDFC to provide assistance in policy issues related to financing of concessions.

USAID can provide important help in the dissemination of procedures and requirements for private sector participation in roads by supporting an Indian training firm in the preparation of seminars and training materials, and in organizing training events to familiarize persons in the public and private sectors with private participation in roads. These efforts should also help to increase the availability of private capital to promote road concessions.

It is recommended that USAID also support an Indian firm strengthened by foreign experts to develop, in the context of private participation in roads, a statistical base and policy framework related to the patterns of expenditure and financing sources, and of transport and service capacity for the Indian road sector in general and for the Karnataka road system in particular. The consultancy should also develop and execute a program to raise the consciousness of road users in general and business firms in particular concerning the role of private participation in roads through seminars for the Chambers of Commerce, All India Motor Transport Congress, and similar organizations and

through technical visits abroad and establishment of linkages with road user groups in the U S and with the FHWA

132

Annex 1 Salient Features of the Government of India Policy on Private Sector Participation on National Highways

February 1998

- 1 The policy of privatization will be implemented by the NHAI and in exceptional cases by the State Public Works Department
- 2 The basic principles in identification of NH projects for private investment would be that the project is an approved project of the Ministry of Surface Transport and it is capable of yielding adequate financial return
- 3 The Government will provide support by carrying out all preparatory works such as
 - Feasibility study
 - Land for right of way and roadside facilities
 - Relocation of utility services
 - Cutting of trees
 - Removal of encroachments and resettlement and rehabilitation of persons affected
 - Environmental clearances

Depending upon financial viability, the cost for the above activities may be recouped from the project

- 4 Suitable traffic support/guarantee will be provided on a case-by-case basis
- 5 Exemption will be given from import duty on identified high-quality construction plant and equipment
- 6 Foreign Direct Investment up to 74% would be permitted automatically Beyond that, proposals would need clearance from the Foreign Investment Promotion Board
- 7 A five-year tax holiday is available followed by a further five-year period of 30% exemption and this concession can be availed of in any 10 consecutive years during the first 20 years of operation (Section 80-IA(12)(ca) of the IT Act 1961)
- 8 Up to 40% may be excluded from income tax of the income derived by financial institutions from finance they provide for infrastructure projects
- 9 Income Tax exemption is available on the income from dividends and interest on long-term capital gains derived from investments in the form of shares or long-term finance to any enterprise set up to develop, maintain, and operate an infrastructure facility

- 10 Subscription to equity shares and debentures are eligible for deductions under Section 88 of the Income Tax Act
- 11 Real estate development can be made an integral part of BOT projects to enhance their financial viability
- 12 NHAI can provide capital grants to the developer of a road project for project cost, on a case-by-case basis
- 13 NHAI can participate up to 30% of total equity of a company floated to develop a road project
- 14 The ownership of the land for the highway construction and roadside facilities would continue to vest in the Government. Mortgaging and subleasing of this land for raising finances is not allowed. However, land will be given on lease to entrepreneurs
- 15 There will be provision for unified check barriers at the inter-state borders for the use of all governmental authorities. Such barriers would be located outside the right of way with proper entry/exit layout
- 16 Dispute resolution and arbitration would be under the Indian Arbitration and Conciliation Act, 1996 (It incorporates UNCITRAL provisions)
- 17 Entrepreneurs would be protected against *force majeure* situations including political, non-political, and legislative changes
- 18 There will be a standard concession agreement that addresses the concerns of various stakeholders in the project

Annex 2: Mission Statement of NHAI

1996

Functions

The following functions have been allotted to the Authority by the Ministry of Surface Transport

- Execution of Externally Aided Projects and Maintenance thereof
- Implementation of the Policy of Privatization in Highway Sector
- Development of Wayside Amenities
- Planning and Development of Expressways

Mission

The mission of the Authority is the maintenance of National Highways network to world standards, within the strategic policy framework set by the Government of India, and the promotion of economic well-being and the quality of life of the people

Towards these objectives, the Authority plans to

- a) Take responsibility for development and maintenance of all National Highways in the country within a period of five years
- b) Manage the National Highways in a manner that provides safety and comfort to those who use them
- c) Improve and extend the National Highway network in an efficient and environmentally sensitive manner
- d) Seek viable ways to involve the private sector in provision, maintenance, and operation of roads
- e) Encourage research and develop effective liaison with institutions involved in research in road and road-related issues
- f) Increase safety including improved road geometrics
- g) Provide on-route facilities for road users
- h) Provide a congenial environment including landscaping and effective and pleasant roadsides to ensure safe, comfortable, and pleasant driving
- i) Promote the scheme of free plantation along the roads as well as beautify all major intersections and junctures

Annex 3: MOST Assessment of Development Needs on National Highways up to 2010

February 1998

Sl No	Category of Work	Length/No	Est Cost (Rs billion)
1	Widening Single Lane to Two Lane Including Pavement Strengthening	5,200 km	52
2	Widening of Two Lane Roads to Four Lanes (or More)	14,000 km	420
3	Strengthening of Existing Two Lane Roads and Providing Paved Shoulders	15,000 km	90
4	Bypasses around Congested Cities	40 nos	20
5	Construction of Bridges	470 nos	10
6	Miscellaneous and Safety works	-	50
7	Expressways on New Alignments	2,000 km	<u>160</u>
			802
			say Rs 800 billion

Source MOST/NHAI

Annex 4 List of BOT Projects on NHs Already Contracted out to Private Investors

February 1998

	Name of Project	NH No	State	Length (km) or number	Est cost (Rs million)	Status
A <u>Bridges</u>						
1	Second Narmada Bridge	8	Gujarat	1 no	1,130	Preconstruction activity
2	Six bridges in Andhra Pradesh	5	Andhra Pradesh	6 nos	500	Preconstruction activity
3	Patalganga Bridge	17	Maharashtra	1 no	330	Preconstruction activity
B <u>Railway Overbridges</u>						
1	Chalthan	8	Gujarat	1 no	100	Under construction
2	Nardhana	6	Maharashtra	1 no	350	Preconstruction activity
C <u>Bypasses</u>						
1	Thane-Bhiwandi	3,4	Maharashtra	24 km	170	Open to traffic
2	Udaipur	8	Rajasthan	11 km	240	Under construction
3	Durg	6	Madhya Pradesh	18 km	680	Preconstruction activity
4	Coimbatore	47	Tamil Nadu	<u>33 km</u>	<u>900</u>	Preconstruction activity
				10 bridges	4,400	
				+ 86 km	Rs 4,400 million	
					Rs 4.4 billion	

Source MOST/NHAI

Annex 5- Narmada Bridge on NH 8 in Gujarat

1	Location	Second Two Lane Bridge near Zadeshwar on NH 8 (13 spans of 96.9m + 2 end spans of 56.095m)
2	Carriageway	7.5m wide with 1.5m footpaths on either side
3	Estimated Cost	Rs 1130 million
4	Date of Award	November, 1997
5	Concession Period	15 years (including construction period of 3 years)
6	Name of the Entrepreneur	Larsen & Toubro Ltd , India
7	Toll Rates	In opening year, cars Rs 11 buses & trucks Rs 33 light commercial vehicles Rs 28, applicable on both bridges. Revision permitted on the basis of Wholesale Price Index
8	Notable Features	<ol style="list-style-type: none">i) Bidder decided on the basis of lowest concession periodii) No guarantee of traffic. However, Government would not provide any competing bridge facility on Narmada during the concession periodiii) Arbitration as per provisions of the Arbitration and Conciliation Act 1996 of Indiaiv) Minimum equity of Entrepreneur to be 51% during the construction period and 26% thereafterv) Project would be monitored by a Steering Group with representatives of Government of India, Government of Gujarat and the Entrepreneurvi) The Steering Group shall appoint a Consultant of repute to check, monitor, and approve the designs and construction in terms of the agreementvii) No government guarantee for repayment of loans or debentures floated by the Entrepreneurviii) No advance or support loans by the Government

144

Annex 6: Thane-Bhiwandi Bypass on NH 3 and 4 in Maharashtra

1	Length	24 km
2	Estimated Cost	Rs 170 million
3	Broad Scope of Work	Reconstruction of existing road to standard of two lane carriageway with 2.5m wide paved shoulders and 1m wide earth shoulders on either side
4	Date of Award	September, 1995
5	Name of Entrepreneur	Ideal Road Builders Ltd Mumbai
6	Date of Opening of Facility	June, 1997
7	Concession Period	7 years 9 months
8	Notable Features	<ol style="list-style-type: none">i) No traffic guaranteesii) Entrepreneur arranged loans from banks by providing his own personal assets as security. The track record of Entrepreneur who was collecting tolls on Kalwa Kasheli bridges on this bypass earlier provided some level of confidence to the banksiii) The project completed about six months ahead of schedule and this benefits the Entrepreneur as an additional period for collection of tollsiv) Toll rates fixed by the Government. The bidder chosen on the basis of lowest period of concession. Rates same as obtaining earlier on the bridges on the bypassv) The agreement signed between three parties viz, Government of India, Government of Maharashtra and the Entrepreneurvi) Just before transfer of project, the Entrepreneur has been obligated to provide a periodic renewal coat on the road as part of the offervii) The Entrepreneur is financier as well as contractor and O & M operator

145

Annex 7 Bangalore-Mysore Infrastructure Corridor in Karnataka

- 1 Entrepreneur(s) Kalyani Group of Companies, VHB International Ltd and SAB International Ltd have signed a Memorandum of Understanding with Govt of Karnataka in February 1995 They have formed the Nandi Infrastructure Corridor Enterprise (NICE) Ltd to develop the project on BOT basis
- 2 Broad Scope of Work
- | | |
|---|---------------|
| i) Bangalore-Mysore Expressway | 111 km |
| ii) Southern Section of Bangalore Outer Peripheral Road | 41 km |
| iii) Link Road connecting Expressway with SH No 17 | 9 km |
| iv) Elevated Link Road to downtown Bangalore | <u>3 km</u> |
| Four Lane expressways (limited access) | <u>164 km</u> |
- 3 Notable Features
- i) Real Estate Development permitted by Government of Karnataka en-route It envisages five self-sustainable townships, each with a population of 100,000 with elementary schools, parks, recreation facilities
 - ii) Utilities (water, electricity and communications) will be designed and constructed within the corridor There would be 400 MW power-generating facilities
 - iii) Project awarded through MOU route
 - iv) Land being acquired will enable future widening of expressway to six lanes
 - v) Project would serve to create centers of excellence for technology research and industry
- 4 Project Status Land being acquired and engineering for the various components in progress (The consortium has organized India International Infrastructure Engineering Ltd to manage the development of the project It will provide engineering program management, construction management and engineering services)

Annex 8 Security for Loans to Concessions Based on Tolls

- 1 Ever since independence nearly all ports, power systems and roads, as parts of the commanding heights of the economy, have been provided directly by the Government or its instrumentalities. Consequently assets for those sectors were acquired by the expenditure of funds that were raised by taxation or by borrowings of the Government or its instrumentalities.
- 2 Since the Government changed its erstwhile policy and allowed for private participation in these sectors, it has sought to attract private money to them. However, few private sector schemes have so far been able to arrange viable financial plans. First, private parties have not been willing to risk substantial amounts of their own funds for equity to support their participation in infrastructure schemes. Second, without this equity, lenders will not finance the schemes unless other security is provided by the sponsoring private parties. Generally, assets in the ports, power and roads sectors are immovable and difficult to sell and do not provide good security to lenders. Even though assignment of revenues could provide collateral for lending, revenues in these three sectors are uncertain.
- 3 Accordingly, most lending that has so far been arranged for schemes in these sectors has involved guarantees by Government or governmental agencies. This result has tended to defeat the main purpose for private participation in the three sectors. Moreover, with explicit or implicit limits on the Government's exposure to contingent liabilities, a point will soon be reached when governmental guarantees will no longer be available. The Infrastructure Development and Finance Company (IDFC) newly founded by the Government, may eventually become private, but for the foreseeable future its guarantees will also represent an implicit charge on the Government's exchequer.
- 4 Financial plans need, therefore, to be developed that truly represent private additions to investment resources rather than continued dependence on public finances. Indian investors have available to them opportunities which have short time horizons and high returns. Implicit in high returns is a pattern of small, highly leveraged equity bases. To reduce the need for government guarantees in the infrastructure sector, financial plans for such schemes should address these two difficulties. With respect to the first issue, long-term financing could be arranged so that near-term maturities are for private account and long-term maturities for government account. With respect to the second issue, investors will only commit more equity if revenues are adequate to ensure high returns on them. If revenues are maintained at low levels, only high leverage can provide adequate return to equity. Therefore, if the Government wants to attract private equity to these sectors, revenues must be increased to ensure adequate returns and the Government must allow revenues to be maintained at that level.

Annex 9 Constraints and Proposed USAID Interventions

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
<p>1 Removing Institutional Constraints to private sector participation by strengthening public and private in particular, removing the lack of institutions at the Union & State level capable of conceptualizing and managing private participation in the road sector</p>	<p>NHAI Mission, Work Program Staff Consultancy by Indian management consultancy firm with foreign advisers to assist in</p> <ul style="list-style-type: none"> • Preparation of a strategy of devolution of authority over National Highways (NHs) from the Ministry of Surface Transport (MOST) to the National Highways Authority of India (NHAI) • Preparation of a 5 year work program (1998 - 2003) for NHAI for maintenance operations improvement and development of NHs under NHAI authority • Implementation of the work program including execution of suitable training programs <p>The consultancy should pay particular attention to increasing opportunities for the participation by the private sector in NHAI work to support NHAI's policy of operating with a small establishment and relying primarily on consultants contractors and entrepreneurs Also interactions with the US Federal Highway Administration (FHWA)</p>	<p>MOST & NHAI</p>	<p>12 / 12 / 0 10 / 6 12 / 12 / 0 10 / 6 20 / 10 / 0 20 / 60</p>	<p>Establishment and efficient operation of a program and a national agency oriented to effective private participation in the road sector and to be a window to the states</p>
<p>2 Removing Procedural (Legal Administrative and Project Services) Constraints by removing the constraint of</p>				
<p>a) lack of procedures for studies and bidding and standard documents to solicit and contract private participation in the road sector at the national level and in Karnataka and lack of widespread knowledge</p>	<p>a) Documentation Tendering and Execution of Sample Projects, (NHAI and Karnataka) Consultancies by a group of Indian civil engineering firms working with a small team of foreign advisers</p> <p>(i) to prepare engineering documentation including designs and cost estimates to the degree of accuracy required for the effective and transparent solicitation and comparison of proposals from the private parties to build and operate and recover costs on the</p>	<p>NHAI & KNT-PWD</p>		<p>Establishment at NHAI and at Karnataka PWD and in India s private sector of the capacity to prepare and execute road projects and road maintenance with</p>

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
of these procedures and documents at the lower levels of government	<p>basis of tolls for</p> <ul style="list-style-type: none"> • two bypasses (each not less than 10 km long) • two major bridges (each not less than 300 m long) • two railway overpasses or road fly-overs • one section of widening from 7.0m to 14.0m (not less than 30 km long) <p>The selected projects should be located one each on NHs and SHs in Karnataka except for the widening which will be a SH in Karnataka and the NHs should be located preferably in</p> <ul style="list-style-type: none"> • States with major foreign aided road restructuring programs and • States with backward levels of development <p>The documentation to be developed should include a complete financial analysis to show revenues likely to be generated from tolls other sources of financing (including subsidy) and cash flows detailing funds as and when required for construction interest and operations (including fee collection and maintenance) The consultancy should also include preparation of elements for a standard concession agreement drafted in collaboration between Indian and foreign legal experts and relevant financial institutions</p> <p>(ii) to assist NHAI and Karnataka PWD in tendering, contract award and execution of the projects</p> <p>(iii) to assist in dissemination of the above procedures and documentation to various levels of government in</p> <ul style="list-style-type: none"> • Karnataka • States with major externally aided road program • Other states <p>Dissemination would be achieved through conferences seminars and training courses</p>	<p>NHAI & KNT- PWD NHA</p>	<p>50 / 3 / 0 15 / 6 65 / 3 / 0 20 / 6 20 / 1 / 0 10 / 6 100 / 9 / 0 20 / 6</p> <p>360 / 96 / 0 80 / 48</p> <p>- / - / 0 40 / 24 (lump sum)</p>	private participation

149

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
b) lack of procedures for road maintenance by contract	b) Contract Maintenance - NHAI and Karnataka Consultancy by an Indian civil engineering firm with a foreign adviser <ul style="list-style-type: none"> i) to assist in preparation of suitable documents for routine and periodic maintenance of private parties contracted by NHAI for NHs not under a toll regime and State of Karnataka for SHs for tendering, contract award and execution of such maintenance and ii) to assist in dissemination of contract maintenance procedures 	NHAI & KNT-PWD	12 / 6 / 0 20 / 6	Establishment of contract road maintenance at NHAI and other road agencies in India
c) multiple clearances for undertaking road projects with private participation	c) Streamlining Clearances Consultancy by an Indian expert to examine the various statutory and other clearances required for undertaking road projects and to make recommendations on streamlining these procedures	NHAI & KNT-PWD	6 / / 0 10 / 3	Simplification and acceleration of clearances for road projects
d) lack of facilities providing road building machinery on rental basis	d) Road Equipment and Rental Firms Consultancy by an Indian civil engineering firm working with a foreign adviser to assist in establishment of firms to provide road building machinery to contractors on rental basis	NHAI & IDFC	12 / 2 / 0 10 / 6	Establishment of firms to provide road building machinery on rental basis
e) overloaded vehicles burdening the efficient use of roads, particularly roads with private participation	e) Overloaded Vehicles Consultancy by an Indian civil engineering firm working with an Indian management consultancy firm and a foreign adviser to review existing studies and recommendations on vehicle over loading and introduction of multi-axle vehicles (especially in relation to container movements), to examine and recommend on various methods and programs to reduce the number and better manage the problems related to illegally overloaded vehicles on NHAI roads particularly those contracted to private parties	NHAI & AITD	6 / 6 / 0 10 / 6	Improvement of management of problem of overloaded vehicles
3 Removing Financing Constraints by developing financial means for private participation in the road				

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
sector and by fostering commercialization of roads in particular				
a) lack of an assured source of governmental financing for road projects with private participation	<p>a) Road Funds and Shadow Tolls</p> <p>Consultancy by an Indian and a foreign expert to identify and develop governmental means and current strategies for support of private participation in road infrastructure such as dedicated road funds and dedicated road revenues and to specify means and methods for commercializing roads. The consultancy would also include examination of such issues as management of the road funds on commercial principles, establishment and operation of road boards, and setting up of permanent count stations as a basis for traffic information systems and shadow tolls and electronic pricing. The consultancy would examine these issues for India at the Union level and for Karnataka at the State level.</p>	MOST & MOF KNT-PWD & DOF	12 / 12 / 0 30 / 6	Increased knowledge and acceptance by private sector, particularly road sector for funding of roads on commercial basis and for private participation in road sector
b) lack of legal documentation to provide credit worthy concessions	<p>b) Lending for Concessions</p> <p>Intermittent consultancy by Indian and foreign experts in law and finance to advise on legal and credit worthiness issues related to award of concessions to private entrepreneurs for road infrastructure and on policy issues related to private participation in road sector</p>	IDFC & NHAI	12 / 9 / 0 45 / 36	Development of procedures for security to financial institutions that lend to private entrepreneurs for concessions
c) lack of private capital for roads because of lack of knowledge by public and private entities directly concerned with building and maintaining roads on basis of private participation in road sector	<p>c) Dissemination of Private Participation Practices</p> <p>Consultancy by Indian training firm to develop seminars (three per year for three years) for individuals in the public and private sectors to familiarize them with procedures and requirements for private participation in infrastructure together with fellowships of public sector participants</p>	IDFC & FICCI	/ - / 0 20 / 36	Increased knowledge and acceptance in public and private entities of private participation in road sector

15

Constraints in the Roads/Highways Sector	TA for USAID	Counter-part Agency	Level of Effort Indian PM/ Foreign PM/ US\$ m Cost / Mo Duration	Expected Outcomes
<p>d) inadequate funding for roads because insufficient knowledge and consciousness concerning road financing issues due to lack of</p> <p>1) statistical base and policy framework on expenditure and financing for Indian road sector in the context of increasing private participation in road sector and</p> <p>11) consciousness by road users particularly commercial users, of role of private participation in the road sector</p>	<p>d) Improved Awareness about Good Roads Consultancy by an Indian firm supported by foreign experts</p> <p>1) to develop, in the context of increasing private participation in the road sector a statistical base and policy framework related to the patterns of expenditure and financing sources and of transport and service capacity for Indian road sector in general and for Karnataka road system in particular</p> <p>11) to develop increased consciousness of the role of private participation in the road sector through</p> <ul style="list-style-type: none"> • seminars for members of chambers of commerce road transport associations and the other private sector organizations • interactions with FHWA and NGO s in the US such as the American Trucking Associations and American Highway Users Alliance including professional exchanges and familiarization and technical visits 	FICCI & AIMTC	<p>12 / 6 / 0 20 / 6</p> <p>- / - / 0 40 / 36</p>	Development of increased consciousness for private participation in the road sector

152

Annex 10: Choice of State for USAID Intervention

- 1 The team visited the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu. All these are fairly well off states. The team did not visit any backward states.
- 2 One of the major interventions the team considered was the creation of a dedicated road fund at the State level in order to overcome the difficulty that road projects are not financially viable on the basis of tolls alone. Tolls currently are the main instrument being pursued by both the Central Government and the State Governments to encourage private sector participation in roads and road funds would provide another means of finance where tolls are not viable. Moreover, such funds would allow financing systems such as shadow tolls. The team's discussions covered this issue in each of the four states and, in addition, the team also discussed initiatives in each of the states for private participation in roads.
- 3 The capital of Maharashtra, Mumbai, is also the financial capital of the country and the State Government has a generally enlightened bureaucracy. However, the State Government did not appear to be enthusiastic on the concepts of dedicated road funds and shadow tolling. Tamil Nadu has not shown active interest in a State Road Fund. On the other hand, both Andhra Pradesh and Karnataka are receptive to the idea of an independent road fund at the State level and are looking for assistance and guidance as to how to incorporate such a fund and the modalities of its management and operation. The World Bank and ADB are also planning to explore this concept. The World Bank is also pushing this idea in Andhra Pradesh particularly in the context of providing an assured mechanism for maintenance of existing assets. Pursuant to an undertaking to the World Bank, the State Government of Andhra Pradesh is reported to have notified creation of a State Road Fund, however, it is not yet operational. In addition, both Andhra Pradesh and Karnataka have taken a number of policy initiatives in encouraging private participation of roads.
- 4 In view of the World Bank presence in roads in Andhra Pradesh, it might be a better strategy for USAID to pick up on Karnataka. The latter has recently established an Infrastructure Department so as to take a holistic view of the various sectors of infrastructure including roads in the State. The State Chambers of Commerce and Industry is also active in as much as they have set up an Infrastructure Committee to voice the concerns of the business community and they have even committed themselves to set up an Infrastructure Corporation, initially this corporation will take up projects in the urban area of Bangalore. The State Government working with a developer from the United States is also proceeding with an innovative project called the Bangalore-Mysore Infrastructure Corridor. The corridor involves construction of a private expressway of about 100 km and includes power, water and telecommunications facilities using the road right of way. Several new towns will be developed along the corridor. This project could provide a good demonstration.

project for the USAID. The State also appears to be possessing private capital that can be tapped to finance infrastructure for the socio-economic growth of the State.

- 5 So, on balance of considerations, Karnataka would be a preferred State for USAID activities in the road sector followed by Andhra Pradesh. This would be in addition to the NHAI at the Central Government level which that Government have mandated to be the implementing agency for encouraging private sector participation on the entire NH network (35000 km). Whereas NHAI now have formal jurisdiction over about 1000km including the segments being developed with loan assistance from the World Bank, ADB, OECF. NHAI will gradually have a presence all over India and could then act as a window to the states, particularly the backward ones which also would need to benefit incidentally out of USAID. Also the bureaucracy at the Central Government are better positioned to get exposed to international practices and culture in various sectors of the economy including roads. Therefore, percolation is easier from the Centre to the States.

- 6 Accordingly, the team recommends that USAID work with the NHAI at the Central Government level and with the State PWD of Karnataka in association with the Karnataka Department of Infrastructure at the State level. For policy aspects, MOST and IDFC would also need to be associated while working with NHAI.

India Infrastructure Needs Assessment

SECTION 4

Ports Sector

Prepared by

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Table of Contents

Abbreviations and Acronyms	1
1 0 State of Infrastructure and Improvement Needs	1
1 1 General	1
1 2 Port Capacity	1
1 3 Traffic Projections	1
1 4 Cost of Expansion	2
1 5 Port Planning	2
1 6 State Ports	3
2 0 Review of Private Sector Participation	5
2 1 General	5
2 2 The Port Trusts as Statutory Authorities and as Monopolistic Service Ports	5
2 3 Port Legislation and the Private Sector	6
2 4 Present Changes in Policy and Practice	8
2 5 Impact of Present Developments	9
2 6 The Tariff Authority for Major Ports	10
2 7 The 1996 Government Guidelines for Privatization	12
2 8 Fiscal and Tax Policies Associated With Privatization	13
2 9 Implementation of the Privatization Policy in Port Trusts	13
2 10 Implementation of Privatization Policy in State Ports	14

3 0	Constraints on Private Sector Participation	17
3 1	General	17
3 2	Leases and License Documents as Constraints to Private Sector Participation	17
3 3	Tariffs	17
3 4	Composition of Payments by Licensees and Concessionaires Licensing Fees, Royalties, and Rents	19
3 5	Impact of Private Sector Intervention	19
3 6	Transfer of Property at the End of Contract	20
3 7	Conclusion	20
3 8	State Ports	21
4 0	Recommendations for USAID Involvement	23

**Annex 1 Private Participation in India's Ports Sector
Constraints and Proposed USAID Interventions**

Abbreviations and Acronyms

ADB	Asian Development Bank
BOT	Build-Operate-Transfer
BOOT	Build-Own-Operate-Transfer
CRISIL	Credit Rating Information Services of India, Limited
IDFC	Infrastructure Development Finance Company
IFC	International Finance Corporation
JNPT	Jawaharlal Nehru Port Trust
MOU	Memorandum of Understanding
RITES	Railways Investment and Technical Services
TecEcon	Name of a Consulting Firm
U K	United Kingdom

1.0 State of Infrastructure and Improvement Needs

1.1 General

India has about 6,000 km of coastline serviced by 11 major ports and 142 intermediate and smaller ports. Their throughput was 257 million tons in 1996/1997, 90% of which was handled by the major ports. Traffic composition is liquid bulk (42%), dry bulk (34%), break-bulk general cargo (15%), and containerized cargo (9%). Container cargo accounts for some 38% of general cargo against 60% or more in other countries, this is mainly due to the small size of consignments, to the shortage of container facilities, and to the slow adaptation of the domestic transport system to containerization. It is catching up rapidly and increased 28% annually on average from 1992-1993 to 1996-1997, much more than total port traffic at major ports, which increased by 3% annually during the early 1990s, by 8% on average from 1992 to 1996, and by 5.5% from 1995/1996 to 1996/1997.

1.2 Port Capacity

Total capacity of Indian ports, based on actual productivity, was estimated at 169 million tons in 1992 (traffic 167 million tons), 175 million tons in 1995 (traffic 215 million tons), and some 210 million tons in 1997 (traffic 257 million tons). The ports, therefore, have been permanently working beyond capacity—the traffic-to-capacity ratio being approximately 1.2. Productivity is still low compared to other ports of the region, but has been improving over the years. It has nearly doubled from 1984 to 1997. Average pre-berthing time has been reduced from 3.6 to 1.3 days, so has turnaround time from 11.9 to 6.8 days, and the ratio of idle time to total time at berth has remained at a high 39% on average, reflecting the resistance of dock labor to changes in work schedules. Break-bulk productivity is average at some 850t/ship/day. Container productivity is increasing at terminals operated by trust ports. The trend overall is positive—a labor agreement was signed in 1994, which resulted in some rationalization of manning scales, a modest revision of cargo handling standards, and increases in productivity. There has been no major strike since 1991, worker/days lost by port unions and workers was reduced by 40% in 1996/97 over 1995/96. But the price is high—salaries are much higher than in other industries, labor attrition is slow, abuses are still numerous, being a registered worker is a privilege and a rent, workers are known to lease their jobs on the labor market to some of the many unemployed of the big cities. With 33,000 dock labor workers at Mumbai, 13,000 at Calcutta and 11,000 at Chennai, port trusts suffer massive, costly, and inefficient over-staffing.

1.3 Traffic Projections

Facilities and equipment have been generally inadequate or obsolete, which limits the impact of productivity increases. Based on Plan objectives, the 1997 *India Infrastructure Report* projects a 12% average annual increase in port traffic over the next 10 years, container traffic was estimated to grow by 20% annually, bulk traffic by some 12%, while the development of break-bulk traffic was expected to be slower. The latest projections are for a total traffic of some 650 million tons in 2005, or 3.45 times the 1997 traffic. However, as seen from above, traffic

increases were much lower in the past. The projections, therefore, seem optimistic and are considered as such in private by some officials. Significantly, traffic increased only by 5.5% in 1996-1997 over 1995-1996, with declines of 1% to 4% in four major ports, including Mumbai and Calcutta. From these projections, the 1997 Infrastructure Report derives a need for 138 million tons additional capacity by 2001, and an additional 215 million tons by 2006. These figures assume a 3% annual increase in productivity from 1996 onwards. A careful monthly follow-up of productivity and operational procedures at the different ports and terminals and for different commodities and cargo handling methods would be necessary to assess the exact needs in new facilities, the opinion has been expressed by operators in Mumbai that no additions to capacity would be necessary if productivity were what it should be. This may be exaggerated, but is significant of the magnitude of improvements needed in operations as well as in traffic projections and other economic studies.

1.4 Cost of Expansion

The *Infrastructure Report* estimated the cost of expansion to 2006 at Rs 250 billion (US\$ 6.6 billion). Projections indicate that the port trusts may generate internally some Rs 250 billion, leaving a gap of Rs 120 billion to come from borrowing on the domestic and international capital markets, unlikely equity contributions from central government (as statutory corporations, port trusts have no share capital), or, lastly, by way of private sector participation. Apart from any consideration of operational efficiency, the intervention of the private sector is therefore a condition of obtaining the necessary resources. Still, the port trusts, which pay no taxes, have been able to self-finance their investments so far, some of them, such as Mumbai, have substantial reserves, which they invest in government bonds or in loans to other ports.

1.5 Port Planning

Literature on Indian ports is abundant, starting with the India Port Modernization Study of 1992, continuing with the 1994 Policy Reforms in the Indian Port Sector (TecEcom), the 1995 World Bank India Port Sector Strategy Report, Chapter 12 of the 1997 India Infrastructure Report, and the Proceedings of the second Port Privatization Seminar of 1995 (see Section 2.4) and of the 1995 National Seminar on port Vision 2002 by the Confederation of Indian Industry. The Ports Policy Reforms Bill recommended by consultants TecEcom in 1994 was not issued, nor were the recommendations of the Confederation of Indian Industry for a National Port Policy implemented. A Policy Paper is therefore missing in central government. In early 1998, the Ports 2020 Study by RITES was in progress. It has as an objective to identify infrastructure development needs for the next two decades. RITES is also drafting a port legislation for corporatization "exactly on the British model". This team was explained by foreign members of the RITES team that it would be "exactly on the British model". This, however, may not fit India's needs. The British model developed in specific circumstances. It followed the repeal of the major Dock Labor Scheme and related legislation, a repeal which is not considered in India now, even if the dock labor system calls for reform.

16 State Ports

As noted above, state ports still play a small role, the state of Gujarat alone handles 77% of traffic of these ports (16 million tons). All coastal states are apparently anxious to develop their port sector. This may, in the long term, alter significantly the pattern of traffic between ports. The start of operations at the major new port of Pipavav, developed as a joint venture between the State of Gujarat and private interests, and strategically located between Kandla (an oil port) and Mumbai (a general cargo port) is significant in that respect. Coastal states have issued Policy Statements but no coordination exists at the national level since the National Port Policy within which maritime states would have been free to formulate their own policies and programs has not been defined. The states of Gujarat, Maharashtra, and Tamil Nadu have established State Port Authorities in the form of Maritime Boards with powers similar to those of the Boards of Trustees of the trust ports. Visits to the two states of Karnataka and Andhar Pradesh revealed that their present public port administration is embryonic, based on documentation, it is more developed in Gujarat. The situation in other states has not been assessed. The projected port developments in states may result in some overcapacity, but they will encourage competition and may therefore be a challenge to established ports, which may be tempted to live on acquired niches and take their traffic for granted.

2.0 Review of Private Sector Participation

2.1 General

A first Seminar on Port Privatization was organized in New Delhi by the Indian Institute of Port Management in 1994 under the aegis of the World Bank, a second one took place in 1995 under the umbrella of the Associated Chambers of Commerce and Industry of India. The proposal of private sector intervention in ports was initially received with suspicion by some of the eldest managers and with interest by the youngest ones. The reactions at the Associated Chambers of Commerce and Industry Seminar were especially significant, since they reflected the views of the private sector. There were complaints as regards the communication gap between private and public sector, boards and trustees of the main ports, also about the slow decision making process, requests that competition between ports should be developed (in the past, the policy was rather of assignment of cargo to specific ports), claims that Customs were a barrier to the movement of traffic, statements about the poor productivity of labor, lastly, dock labor representatives made strong representations that they were fully decided to protect their acquired rights, benefits, and privileges, the latter, statutory, contractual, customary or abusive, are well known to be substantial and a strong deterrent to change. In principle, there is at present no objection to private sector intervention, which is officially part of the globalization and liberalization policy of Government and has been formulated into Guidelines (see Section 2.7). However, private sector participation is new to Indian port culture and systems. It introduces a chain reaction, which upsets the traditional set-up of port administration, it necessitates the elaboration of new statutory and contractual instruments. The present period is therefore one of questioning and of adjustment, it is indeed remarkable that, despite these difficulties, so much has been achieved in the area of port privatization over such a short period of time. By 1996, two years after the start, private sector projects in ports were in progress for some US\$ 700 million equivalent.

2.2 The Port Trusts as Statutory Authorities and as Monopolistic Service Ports

The major port authorities are established by the 1963 Major Port Trusts Act as trust ports—that is, as corporations created on the same lines as local authorities by statutes rather than by articles of agreement, surplus-making but not distributing their profits, operating in the public interest and therefore not paying taxes, generally autonomous but not independent, and run by government-appointed boards not by representatives of a diversified shareholding. Lastly, they were classified as Essential Services under the Essential Services Act, making them regulated public utilities. These major ports exercise conservatory functions such as dredging. They have regulatory powers such as policing of ship movements or licensing operators. In addition, they operate all or most of the port services (cargo handling, storage, pilotage, etc.) on force account and as such are said to be service ports. These service ports operate as monopolies. They generally derive from commercial activities (such as cargo handling or demurrage on cargo stored for long periods on their premises) the resources necessary to cross-subsidize heavy infrastructure, made up of costly and lumpy investments. The system, in its original form, is therefore self-contained and leaves little room for private sector (or any other third party) intervention, despite clauses to that effect in the port legislation. As regards the nature of ports and

port authorities, the Indian doctrine differs from the British which, over the last four decades, has increasingly considered ports as strictly commercial enterprise, a trend that has quite naturally led to their complete privatization. India, on the contrary, remained faithful to the basic concept of ports being run as a trust in the public interest, hence their name of *trust ports*, a concept prevailing in the United States, in Australia, in Canada, in France, in Spain, that is in countries of *droit administratif* as well as in countries of *common law*. This does not exclude privatization, far from it, but means that privatization is to be built on different premises, with different consequences, and through different techniques. This is a sufficient reason to express some concern on the straight reproduction of foreign schemes to the Indian context, a practice that seems far too prevalent for not raising doubts as to its wisdom. To succeed, any privatization scheme must be adapted to, and adapt itself, to the basic concepts of local public administration, and public law and practice, even if these are changing, changes will not take place overnight.

2.3 Port Legislation and the Private Sector

At least four sections of the Major Port Trusts Act (1963) permit private parties' intervention, in the form of (i) leases of ports' immovable and movable property, (ii) construction of berthing facilities, (iii) performance of services to be rendered by the ports under terms and conditions fixed by the port trust, and (iv) lease or sale of the rights of the Board of the trust port to levy rates. No provision of the Act permits build-operate-transfer or other similar schemes, they are not prohibited either, the Act simply ignores them. This is not surprising. These schemes have been known for centuries in countries of *droit administratif* or Roman law, in these countries, their legal status, conditions of implementation, motives of changes and cancellation, etc were set by hundred of court decisions, some of them being major landmark decisions that are part of a corpus of law well known from managers, civil servants and regulators. On the contrary, they were only recently introduced in common law countries such as India. They appear as recent novelties on which little is known. Readings in Indian Administrative Law are illuminating in that respect, case law hardly exists. A long training and cultural changes will be necessary if these schemes are to be implemented successfully and without recourse to excessive litigation.

As mentioned above, the port culture did not encourage private sector involvement and the dock labor regime discouraged it. The private sector did not seem anxious to invest in infrastructure and share the difficult management of dock labor with the port trusts and/or the dock labor boards, they preferred to concentrate on the delivery of services with a high and quick return, such as freight forwarding and transport intermediation. At the same time, they complained that facilities were inadequate or obsolete and the management of operations inefficient. Port trust managers did not seem to apprehend the fact that, by not encouraging private investments, they bore all the risks of financing facilities unevenly used by port operators at random intervals. The more the facilities became obsolete, the less efficiently they were used and the less revenue they generated, which in turn discouraged new investments. Before 1994 therefore, no initiative was taken to implement and develop the sections of the Major Port Trusts Act that permitted private sector involvement, no standard contract and licensing conditions were issued, and no procedure was developed to organize private sector intervention.

16c

At the beginning of 1997, there are still many signs of suspicion and hostility towards port privatization. Opinions expressed in writing by officials insist that government control must be retained over the port sector, that privatization may not mean increase in efficiency, but result in more exploitation of labor or operation of substandard equipment, when in fact, it is known that port labor is rather exploiting its position in a lucrative niche and it is rather the equipment of the port trusts which is sub-standard.

It is also not a minor detail that the use and abuse of the word "*privatization*" by Government and others cause a semantic confusion which in turn results in confusion of concepts. The word ends up as a scarecrow. It would have helped if port managers and staff had been explained that leases, concessions, build-operate-transfer (BOT) and other similar schemes are not privatization. They are legal procedures for an improved performance of services of public necessity in the public interest, using the techniques of commercial management rather than of government administration, transferring financial burdens and risks to private parties, permitting the private sector to generate reasonable profits, and being based on a cooperation between a private sector which operates and a public sector which regulates.¹ In the U S, they are designated as public utilities, that is industries that are useful for and used by the public at large to satisfy essential and common needs. The French use the word *partenariat* (partnership), the Quebecois use the word *désaisissement* (relinquishing). All three countries reserve *privatization* for the full transfer of property, which it is, and which it is only. This is how the case should be pleaded in India, even if one admits that the use of *privatization* produced a culture shock that may have been necessary. One might argue that, precisely, complete port privatization in the form of a sale of ports would have been better than partial privatization in the form of leases and BOT schemes. The 1991 U K Ports Act provides a model for it. Here, statutory port corporations were dissolved and transformed into Company Law companies, the shares of the newly established port companies were sold on the market. But the 1991 Ports Act is noticeably the only legislation of this kind in the common law world, including the United States. This seems to indicate that the sense of a common ownership of ports by the people of each country, as represented by government, is, for the better and for the worse, strongly embedded in the civil society. The same is true of India, this cannot be ignored, language should not ignore it either, semantics need to be careful. A port privatization scheme on the British model is not going to develop in India. Neither public opinion nor the government would accept the risk that, through sales of shares, foreign interests may take control of ports. Encouraging it would have an adverse psychological impact and would jeopardize the results already obtained. One should insist, on the contrary, on the fact that strong partnership between the public and the private sector in Build-Operate-Transfer (concessions) and other contracts is the best way to reach the ultimate objectives of good public service, that is the best use possible of economic resources in the global public interest, in a good cooperative atmosphere between public authorities and private interests. To summarize, the presentation of the privatization case is not, at present, exactly what it should be, its marketing is still inadequate, more finesse, talent and eloquence is required. One has to penetrate

¹ Significantly, in countries that make a clear distinction between administrative law and common or civil law, the law of BOT leases and other procedures is administrative law, concessions are administrative contracts. In common law countries, such as the United States, the case law on concessions BOT and leases of public properties etc is strongly influenced by public law concepts such as the public interest and public necessity. Over time the gap between the two types of legal systems has largely disappeared. India also has an administrative law evolving in the same direction.

the minds of the Indians, and especially of the civil servants, to deliver the message in such a way that they will receive it. A considerable effort of explanation, communication and coordination between speakers (starting with bilateral and multilateral aid agencies) is necessary.

2.4 Present Changes in Policy and Practice

A double movement has been taking place—one in the area of legal status of port authorities, the other in the scope of their activities and functions.

First, Government, following suggestions made in the 1994 and 1995 seminars, is considering the corporatization of port trusts by transforming them into share corporations under the Companies Law. In that case, their equity, first entirely government-controlled, would eventually open to private investors. Corporatization will be experienced in the port of Ennore near Chennai. Original shareholders will be the Trust Port of Chennai and the state of Tamil Nadu. Too often, in other countries, corporatization has meant simply the updating, modernization and streamlining of port statutes to make them more similar to the statutes of commercial corporations rather than of statutory corporation. This is not enough. It may have adverse impacts, when burdensome but necessary government control is eliminated for the only benefit of port managers, they then enjoy the freedom of operations of the private sector without having to report to shareholders. Corporatization must translate in the opening of the corporate equity to different shareholders. Then the *affectio societatis*, which is the essence of the corporation, is reconstituted, adequate control is then exercised by investors whose money is at risk in the corporation. Any other corporatization, which would make the port a corporation sole, would be window dressing. The port, as a corporation sole, has only the appearance of a corporation. This may be enough for being sued and other technical aspects of management, but this is not sufficient for making it a corporate body. Corporatization will be experienced in the port of Ennore near Chennai, original shareholders will be the Trust Port of Chennai and the State of Tamil Nadu. There are two issues.

(a) Corporatization would result in taxation of the new corporatized port companies. It is said that at the present tax rates, trust ports would go bankrupt if they had to pay taxes. This is a clear indication that their present profits, which have been reported in different documents as largely due to inadequate depreciation and insufficient investments, are artificial. There is no reason indeed why ports, especially service ports, which are producers of services and offer them on the market, would be unable to finance their share of public expenses through taxation.

(b) The regulatory functions of the port trusts may have to be exercised by other government agencies, since a Companies Law company has no jurisdiction in that respect. In Singapore, the recent corporatization of the port was followed by the establishment of a Singapore Port Authority exercising the regulatory functions. In Port Klang in Malaysia, where the transfer of commercial operations, including pilotage, to private parties, has been massive, the port authority remained as a public body to exercise the regulatory functions.

- (ii) Second, by allowing private interests to build and/or operate their own facilities in ports, port authorities would become landlords leasing their facilities and permitting the development of private terminals, rather than service ports operating on force account. The port trust would become a facilitator, a promoter, a catalytic agent, and a policy planner. Competition would be introduced in some ports, since different terminals with different operators would handle the same categories of cargo. That trust ports would become landlord ports was identified as early as 1994, at the very beginning of the privatization process.

As a consequence of the above, the 1963 Major Port Trusts Act and the 1908 Ports Act are to be revised and a Committee has been appointed for that purpose. As mentioned, this has not been preceded, however, by any formal declaration of a new port policy. However satisfactory it is, from management and financial structure points of view, to see statutory corporations transformed into commercial companies, it is strange that the movement takes place when these corporations are reducing the scope of their services and commercial activities to concentrate on quasi-public duties.

2.5 Impact of Present Developments

Admission of private operators will be progressive. In each port, therefore, these operators are and will be competing with the port trust still operating its own facilities. This will have three consequences:

- (i) Conflicts of interests, especially regarding tariffs, are likely to develop as long as the port trusts have not disposed of all their commercial enterprises, if they ever do.
- (ii) As private intervention will expand, it will deprive port trusts of major sources of revenue from cargo handling and storage, port trusts will need to reorganize their finances so that revenue from leases, concessions and licenses, and revenue from real estate investments, at present disappointingly low, compensate losses made on the transfer of cargo handling and other commercial activities.
- (iii) Also as private intervention develops and the direct involvement of the port trusts in operations diminishes, new management talents will be necessary in the trusts for monitoring private sector activities, contracting, analyzing offers and projecting their financial impact, and managing real estate—all points made clear by this consultant as early as 1994 in the 1994 Port Privatization Seminar (see Section 2.4 above). The more privatization, the better public administration needs to be in a sector as highly competitive as the shipping and port sector, where operators are astute in their proceedings, flexible in their ethics, and anxious of grabbing any business opportunity.

2 6 The Tariff Authority for Major Ports

According to the 1963 Major Port Trusts Act, port tariffs were established by the boards of the trust ports and sanctioned by the Government. Courts have judged that they have no jurisdiction to decide on the reasonableness of rates. Sections 42 and 48 of the Act stipulate that the tariff charged by the private entrepreneur cannot be more than what is charged by the port trusts for similar services. It is therefore not only the port trust as an agency that is considered an Essential Service, but in fact any port service performed in the port by any operator. The criteria are no longer institutional, but activity-related, or material. Altogether, the 1963 regime is rather strict. The 1994 and 1995 port privatization seminars concluded that this regime ought to be made more flexible. Specifically the Confederation of Indian Industries requested that the private operator should be free to fix its tariffs, on a cost-plus basis, under some control.

A 1997 legislation established a Tariff Authority for Major Ports to which all tariff fixation powers have been vested, under control of the Government, which may supersede the Authority and give it directions for the performance of its duties. The establishment of the Authority is said to be due to two causes:

- (i) First, it was part of the conditions of an Asian Development Bank (ADB) loan (information provided by the ADB)
- (ii) Second, it resulted from pressure from the port private sector, which has disparate relations with port trust managers and is suspicious of tariff fixing by the trust ports when private terminals are in competition with trust terminals.

The private sector is likely to play the Authority against the trust ports, and maybe vice versa, to the best of its interests. The ADB expected the Tariff Authority to be an independent regulatory agency, more or less on the United States model of independent regulatory commissions. It did not expect that the Authority would in fact be another agency under direct government control. Given the Indian administrative tradition and style, however, this should have been expected. Further, the incompleteness of the judicial control of administrative decisions might have recommended a more cautious institutional approach. The establishment of the Authority reduces the degree of autonomy of port trusts. This is more surprising since, at the same time, port trusts have obtained increases in the monetary ceilings of contracts for investment or modernization that they are authorized to execute without prior government approval.

The Tariff Authority is not an independent body. According to Sections 24 and 25 of the Ordinance:

- (i) the Authority will, in discharging its functions, be bound by such directions on questions of policy as the Central Government may give from time to time, and
- (ii) the Government may supersede the Authority if the Authority fails to comply

The wording of these two Sections is remarkably similar to that of Sections 110 and 111 of the Major Port Trusts Act, 1963 regarding Government supervision of port trusts. From which it may be concluded that the Tariff Authority is certainly not a new type of political entity, it derives its resources from the budget, it has no specific revenue such as earmarked taxes which would secure its independence. It intends to free itself from Government dependence by charging fees for its services, to be paid by ports and port users². It is nothing but another agency of the executive branch of Central Government, and has no different legal status than any other agency of the executive branch. It is in any case uncertain that a more innovative legislation, establishing a truly independent agency, would have passed the constitutional test. This should be kept in mind if other regulatory agencies of similar nature are to be established.

The Tariff Authority appears eager to fully exercise its powers. In January 1998, it ordered the closure of a container depot opened by the Jawaharlal Nehru Port Trust (JNPT) for the storage of non-documented export containers previously stored in the main terminal where they caused congestion. A review of the legislation fixing the Authority's powers does not establish that it had jurisdiction for ordering such a closure and thus for interfering with port administration. There is a consensus that it acted *ultra vires* and that a judicial review would have quashed the decision. The port trusts resent the establishment of the Tariff Authority, in addition, they seem to doubt that it has been adequately staffed with personnel conversant in port affairs. It is the Authority's intention to operate an agency filled with professional expertise. While this will be welcome as likely to improve its efficiency, this may be a drain on port-related human resources. It would be a pity if the most refined economic or financial staff of the port trusts would be tempted to join the Authority in New Delhi to occupy prestigious supervisory positions. The on-going privatization movement and the increasing competition of port trusts by State ports make necessary the presence of the best port staff in the ports trusts, not in the capital.

As early as December 1997, the tentative view of the Tariff Authority was its statutes should not be interpreted strictly and it had jurisdiction to go into "*matters of operational efficiency*", a vague term in any case. Despite an Attorney-General's opinion, the Authority stated that it had jurisdiction on leases on all port land (not only on waterfront properties) as well as on port services, also that it may be open to it to prescribe conditions to regulate the use of land and property, more that it should have jurisdiction on charges levied by shipping agents, forwarding agents, stevedores, Customs house agents. It announced its intention to recommend to the Government "*appropriate amendments to the Statute to give it jurisdiction over all port-related charges*". Going further, the Authority considered that it should be given, rather than to the Board of the Port Trusts under Section 53 of the Port Trusts Act, 1963, power to waive rates, demurrage or other charges. Such Section 53, as presently worded in favor of the Port Trusts, appears to the Authority as "*an aberration*". However, transferring that power to deliver waivers from the Port Trusts to the Authority would reduce Port Trusts autonomy, jeopardize their relations with port users, and delay decision making, since it would be necessary to report and plead each case in New Delhi.

² When the United Kingdom Government established in 1964 the National Ports Council (dissolved in 1980) to exercise various regulatory and planning functions in the U.K. port system it provided for its compulsory financing by contributions from the port authorities themselves which the port authorities strongly resented.

Regulation of tariffs may be necessary, but a choice will have to be made between managing the ports locally or managing them from an office in New Delhi

The Authority's jurisdiction does not extend to the state ports, they remain free of fixing their tariffs. The port trusts have therefore requested that the Authority's powers be extended to cover the state ports to avoid predatory pricing by these ports. The states are likely to resist such interference and it is doubtful that the request will be satisfied. Further, establishment of a Ports Regulatory Authority is rumored, probably because the corporatization of ports makes it necessary to exercise the regulatory functions. The Tariff Authority seems eager to become that agency. If such a system is established, whether with one or with two Authorities, and since the Government exercises, vis-à-vis the Authority(ies), the same powers of supervision that it enjoys at present over the port trusts, a new layer of control will have been introduced to a system that knows no shortage of government agencies and layers of command. It is unfortunate that a step as important as the establishment of the Authority has not been part of an overall well-defined port policy.

The above describes the situation as it was in January-February 1998. A Seminar chaired by the Tariff Authority took place in Chennai on or about February 20, 1998. At the time of finalizing this report, no information as to its outcome has reached the writer.

2.7 The 1996 Government Guidelines for Privatization

Short of a comprehensive policy paper, central government issued the 1996 "Guidelines," to be followed by major port trusts for private sector participation, these will apply until trust ports issue regulations under the Major Port Trust Act regarding privatization. The Guidelines assume that "major expansion is required in the port infrastructure in the country in order to handle the seaborne traffic on account of increasing foreign and coastal trade." Government expects from private sector's intervention (i) the mobilization of substantial resources required for the financing of infrastructure, (ii) the improvement of efficiency, productivity, and quality of service and the development of competition in the delivery of port services, (iii) a reduction in the gestation period for setting up new facilities, (iv) an introduction of the latest technologies, and (v) improved management techniques. All these objectives are valid, they reflect, and derive from, the present weaknesses that remain in Indian ports, despite the ongoing improvements.

The Guidelines identified a non-limitative list of areas for private sector intervention, mainly leases of existing facilities, construction and operation of additional assets, such as container terminals and captive facilities, and leasing of equipment. Altogether, they are quite restrictive and strongly influenced by the public character of ports. They can be summarized as follows:

- (1) Private facilities should be available to all users on equal and competitive terms, subject to priority given to ships of the concessionaire or lessee, priority berthing orders of central government should also be honored, and privatization "should not result in the creation of private monopolies," despite the fact that Indian ports have so far operated largely as public monopolies.

- (ii) Trust ports will prepare feasibility reports and/or scrutinize feasibility reports prepared by private investors
- (iii) All leases, concessions (whether Build-Operate-Transfer or others) will be granted on the basis of open tenders, technical and financial bids will be presented separately
- (iv) Leasing of facilities will be considered only if such leasing results in additional investment. At the end of the lease, assets will revert back to the port free of cost including equipment and augmented portion of assets, if any, private entrepreneurs shall introduce only modern technology and brand new equipment, and for concessionaires, all equipment acquired will be handed over to the grantor at depreciated, not market price
- (v) Lessee and concessionaires will pay (a) an upfront fee for license, (b) lease rent, and (c) royalties on cargo handled, lessee will guarantee a minimum tonnage of cargo and submit a Performance Bond before starting operations. Whatever the traffic, they will have to pay royalties based on covenanted figures, not on actual traffic. To recover its own costs, the trust port (the licensor) will collect its own ship and wharfage dues. These would be collected by the concessionaire or lessee and paid to the licensor. However, according to Section 42 of the 1963 Major Port Trusts Act, the Boards may authorize any person to perform services "*on such terms and conditions as may be agreed upon*". The approach is strictly contractual. By introducing an automatic licensing fee, the Port Trusts introduce a tax element where it has no place. Licensing fees are part of the tax system, such system must be reviewed before establishing and fixing a new fee
- (vi) Concessionaires and lessees will be bound by all existing labor laws, no retrenchment of labor will be conducted without concurrence of labor and conditions of service will not be inferior to those enjoyed before

2 8 Fiscal and Tax Policies Associated with Privatization

The Government modified its financial policies to offer the following incentives to private investors in port infrastructure, mainly (i) a five-year tax holiday followed by a tax rebate of 30% on earnings in the next five years of project commissioning, (ii) creation of the Infrastructure Development Finance Company (IDFC), (iii) automatic approval of foreign equity investment up to 74% of project costs, higher percentages necessitating the clearance of the Foreign Investment promotional Board, and (iv) a tax concession of 40% to financial institutions on income from the financing of infrastructure

2 9 Implementation of the Privatization Policy in Port Trusts

Details of private sector development were given in the December 1997 CRISIL Advisory Services Report and will be briefly summarized here. Five types of private sector intervention can be identified

- (i) Build-Operate-Transfer or Build-Own-Operate-Transfer Schemes, i.e., concessions involving massive private sector investments for multiple user berths, this has been the case at JNPT (container terminal) and at Kandla (container freight station and associated facilities)
- (ii) Captive facilities associated with onshore or inland industries, also involving concessions with massive upfront investments by the private (or public or mixed) sector, this has been the case at New Mangalore (coal), Mumbai (coal), JNPT (chemical terminal), Ennore (coal, liquid bulk, natural gas), and Kandla (single buoy mooring)
- (iii) Reconstruction and modernization of existing facilities (Mormugao for coal traffic and ship repair complex)
- (iv) Leasing of common user berths (Haldia and Mumbai for container traffic), with priority berthing rights for the benefit of ships belonging to, or chartered by, the lessee
- (v) Development of auxiliary services such as towage and pilotage

Category (ii) seems to develop more rapidly than the others. This is justified and in the best common interest. Costly captive facilities, used by ships at uneven intervals, are better financed, equipped, and operated by user industries, they are in fact part of the production and delivery chain. In that respect, India does not innovate, but follows a worldwide pattern. Category (iv) raises issues of fairness when ports are congested, the rule of first-come-first-served is strongly embedded in the port culture, priority berthing is not accepted well by non-priority users. Disputes on this point caused the cancellation of a reserved berth scheme in Mumbai. Significantly, although unverified, it was reported to the consultant that private interests opposed to the scheme launched a campaign to demonstrate that the award of the reserved berth contract resulted from corrupt practice. An official inquiry proved this to be inaccurate, but the result expected, that is the non-renewal of the lease, had been obtained. No port expert familiar with shipping and port business would be surprised by this development.

No less than 21 additional port projects that may be offered in the course of the next two years for private sector participation have been identified during the consultants' mission. Seven are captive projects for oil, chemicals, liquefied gas, etc., seven are for container facilities, two are for ship repair facilities, and the others are more vaguely defined.

2.10 Implementation of Privatization Policy in State Ports

Again, the CRISIL Report gives all the necessary details on the implementation of the privatization policy in state ports. These will not be repeated here. Generally, states have issued Infrastructure or Port Policy Papers and/or Orders that provide sound basis for action and tend to be more open and flexible than the Central Government Guidelines, especially in regard to tariffs. Gujarat was the first to issue such a Port Policy Statement in December 1995, its salient

features appear in the CRISIL Report. The most recent was that of Karnataka. It is given as an example below.

The Karnataka government set the principle that private investment in infrastructure should “contribute to economic growth and public welfare” and have as an objective “the rapid economic development of the State.” This objective of public interest is qualified by the statement that “Government will make efforts to ensure that the projects are conceived with the objectives that they are commercially viable before offering them to private interests” (Order IDD 1 VIP 97, 26 12 1997, line 7). Projects would be in principle offered through competitive bidding, but Memoranda of Understanding (MOUs) will suffice where the investor proposes a project “of a visionary nature” or a project that the Government had not proposed because “it did not appear to be commercially viable” (Order, line 8). Government commits itself to take decisions on project proposals within 90 days of submission (Order, line 14) and will ensure that “all requisite clearances are made available at one point by a single window agency” (Order, line 17). Recognizing that infrastructure projects deserve special treatment because of their long gestation period, the Government granted generous tax incentives: (i) entry tax exemption on equipment and machinery, (ii) 3-year tax holiday of the sales tax and contract tax related to construction, and (iii) exemption from stamp duties. In addition, government land may be leased at concessional rates, tariff flexibility is granted, and lastly, if the project is not commercially viable, the investor will be authorized to invest in commercial and real estate ventures “to ensure a reasonable composite internal rate of return” (Order, line 18).

A detailed review of the different schemes presented to the consultants during their meetings with officials or with private parties indicate that real estate operations are likely to be central to most of the BOT or BOOT schemes, as they appear to be the only way to offset the costs of large and lumpy investments such as capital dredging, breakwaters, and even wharves.

3.0 Constraints on Private Sector Participation

3.1 General

Judging by the number of privatization schemes in progress, there would seem to be no major constraint to private sector participation. Still, some of the constraints inherent to the internal functioning of Indian government agencies exercise a pervasive influence on the privatization process. For example, the long gestation period of government projects due to a slow decision-making process inside government agencies and to the concentration of decision-making at the highest level has been invoked as one of the motives for privatization. Still, the process may be as lengthy when it comes to the approval of private sector investments. The consultants noticed during their interviews in government agencies or of private sector entrepreneurs that many schemes were said to be in the pipeline, but also invariably it was said that "arrangements have not been finalized yet," perhaps because the necessary capacity for handling private sector intervention was missing in the agencies and there was a lack of mutual confidence between government agencies, including the port trusts and the private sector. Constraints and obstacles to the intervention of the private sector are therefore more subjective than objective and, as such, do not lend themselves easily to outside intervention.

3.2 Leases and License Documents as Constraints to Private Sector Participation

As mentioned above, the 1963 Major Port Trusts Act contains few clauses on private sector participation. This Act is said to be under revision. A new Act should cover matters such as but not limited to the role of port trusts as landlord ports, investments and financial policies, the ability to enter into joint ventures and corporations, and general conditions for licensing. Copies of one License Agreement for a BOT project and of Lease Conditions have been made available to the consultant. It is understood that they are currently used as models. Judging by the reactions of users consulted, it seems, on one side, that these conditions do not satisfy them and that they are a constraint to private involvement, however, on the other side, the progress of such involvement may lead to the conclusion that these conditions are on the whole acceptable. Interviews indicate that, as much as the conditions themselves, the apparent greed and suspicious attitude of the port trust negotiators is a major cause of conflict. It is therefore necessary to come to an agreement on standard conditions of contract that would satisfy the interests and needs of all parties involved (bankers, concessionaires, and grantor).

3.3 Tariffs

The 1996 Guidelines for private sector privatization indicated that tariffs fixed by a Tariff Authority to be established "would be a ceiling and both the private entrepreneurs and the port would be free to charge less than such notified tariff." The 1997 Ordinance amending the Major Port Trusts Act gives extensive powers to the newly established Tariff Authority to fix the frame and rates of maximum tariffs. Both the Conditions for Leases and BOT License Agreement confirm that these rates are maximums. The licensee may apply for revision of tariffs. In the

case of concessions, the BOT Agreement stipulates nothing about procedures or guarantees for the benefit of the concessionaire. In the case of leases, any revision of tariff is to be supported by a recommendation of the port trust that it considers the tariff revision to be justified by increases in tariffs by any other agency or increases in wages or for any other acceptable reason. There is no mention of any freedom of implementation of tariff scales, indeed, the licensee is "to refrain from indulging in any discriminatory practice against any user", which is likely to prevent preferential tariffs to the benefit of regular or frequent users. Further, the Government may at any time supersede the Tariff Authority's decisions and/or give it policy directions.

None of the documents includes stipulations regarding the currency in which tariffs are to be computed. There are, in that respect, three solutions:

- (i) computation of tariffs and payment in rupees,
- (ii) computation in a foreign currency and payment in rupees, and
- (iii) computation and payment in foreign currency.

Based on the fact that they are investing in foreign currencies, the investors operating cargo terminals asked to be authorized to charge their clients and to be paid in such currencies, to which the Tariff Authority objects in principle. The argument is that many investors invest in foreign currency, they run their exchange risks, port investors should do the same. The issue is not that simple given the present trends in world ports in that respect. A distinction must be made between charges on ships and charges on cargo.

- (i) Charges on ships (mainly port dues, towage, and pilotage) are paid to the Port Authority by the shipowners, nationals, or foreigners whose revenue from freight, paid by shippers and consignees of the port country, are computed and paid in hard currencies (US\$ mainly). To recoup part of the freight charges disbursed from the country's foreign exchange reserves, many Port Authorities in developing countries charge on ships in foreign currencies. This is the case for most ports of West Africa, for Tunisia and Morocco, Egypt, and the Suez Canal, and finally for the port trusts of India. They charge and collect ship dues and pilotage in US\$. This has the additional impact of protecting them against foreign exchange risks and to avoid asking for tariff increases when the national currency erodes.
- (ii) Charges on cargo (wharfage, stevedoring, and storage charges, etc.) are paid to the Port Authority and to the cargo operator by local importers and exporters. Traditionally, these charges are computed and payable in local currency. A trend currently exists in some countries (especially Africa) to have them computed in foreign currencies and paid in local currencies as a hedge against the depreciation of the local currency.

The issue is further complicated by the distinction that may or may not be made between national and foreign ships, or between imports and exports, and cargo in transit. Clearly, the problem

needs careful and open examination to elaborate clear rules on the matter, which may be adapted on a case-by-case basis, taking into consideration the terms, conditions, and duration of commitments of the investor towards foreign sources of financing. A computation in foreign currency (or in Special Drawing Rights) and a payment in rupees covering all or part of the foreign exchange risk would eliminate that constraint to private sector involvement, and to make the Licenses a bankable document.

3.4 Composition of Payments by Licensees and Concessionaires Licensing Fees, Royalties, and Rents

As indicated above, licensees and concessionaires are to pay an upfront fee for license, lease rent, and royalties on covenanted traffic. In addition, they will act as agents of the licensor for the collection of ship and wharfage dues. These port trusts, which have operated so far as service ports without any private sector participation, have managed to acquire substantial profit from their licensees by accumulating three different categories of payments bearing no relation whatsoever to their own costs. The following points are relevant:

- (i) First, a fee for a license is not automatically justified, under the 1963 Major Port Trusts Act, operators have a statutory right to operate facilities in port premises, they already pay taxes as operators to the central government, there is no reason that they pay an additional fee to a Port Trust which has been established for the purpose of accommodating the needs of the operators.
- (ii) Second, royalties in concessions are usually justified by monopolies, as is the case in water distribution systems, their justification where there is competition is disputable, other approaches, such as a fixed fee plus a sharing of profits beyond a minimum level of traffic, may be a better solution.
- (iii) Whether there should be royalties in case of simple leases is also questionable. Rather, there should be a system of penalties if leased facilities are under-utilized.
- (iv) By having the licensee act as an agent for collecting wharfage and other dues, the trust ports would recover their investment and maintain their own costs through ship and cargo wharfage, at no collecting cost, and they will no longer have any operating cost in regard to leased facilities. Further, where concessionaires will finance construction and maintenance of wharves and terminals, wharfage may no longer be justified.

3.5 Impact of Private Sector Intervention

With the likelihood of private sector intervention attracting traffic through increased productivity and marketing, the port trusts will benefit automatically from the superior management of their lessees and concessionaire, without any effort from them and with reduced costs. The combination of licensing fees, rent for land, royalties, wharfage, port dues, and possibly other payments would provide the trust ports with formidable rents at no cost, whatever the volume of traffic. Therefore, privatization is likely to first enrich the licensor, which will pay no tax and no

dividend to its shareholder, the people of India, and is likely to resist any corporatization that would have adverse tax impacts. This will be to the detriment of the country's economy. In addition, the rents so obtained will further delay any action in the area of reform of the dock labor system. Private monopolies may not have been justified and the directives for participation of the private sector were right in denouncing them. However, public monopolies will be likely to act in their own corporate interest rather than in the public interest, which is their *raison d'être*.

3.6 Transfer of Property at the End of Contract

The transfer of property at the expiration of the license or of the concession is another issue. The conditions for leases provide that assets should be transferred at a depreciated price. The conditions for BOT provide that assets be transferred at no cost to the licensor. This is not acceptable and would probably prevent the concessionaire from investing in any equipment that would be at the risk of not being fully depreciated at the end of the concession. More detailed stipulations are necessary to be applicable to each category of assets. Some of them may be part of the concession, others may not be. The market value of assets at the time of transfer may be the basis for the liquidation of the concession. Other issues needing further examination include reserve and renewal funds and how concession accounts may be kept separated from the concessionaire's own accounts.

Stipulations necessary to make the concession contract a bankable document would include (i) the licensee remains owner of the facilities and equipment during the duration of the concession, (ii) assets may be assigned, (iii) if the licensor's consent is necessary for such assignment, the consent should not be unreasonably refused, and it should be possible to submit such refusal to arbitration. In addition, there should be a procedure permitting the assignment of revenue, other than rent for lease of land, from the concession. ADB staff considered the present lease and concession documents to be sub-standard, but they were not specific, nor were they available to discuss their criticisms. Indian financial institutions reported do not understand the problems of ports, which have long gestation periods before being profitable. Grace periods before loan amortization are considered necessary. The matter of financing heavy and lumpy infrastructure needs to be reviewed and studied.

3.7 Conclusion

More than disputing the details of concession and leases, all private parties visited by the consultants agree that the main problem is in attitudes. The private sector resents that staff in port trusts, whose performance as port managers has not been convincing in their eyes, exercise a strict control on their operations. Staff in port trusts tend to feel they are charitable toward the private sector in permitting them to invest their money in ports and think that the private sector may benefit from their directions and advice, which private parties contest vehemently. Negotiating with port trusts is said to be a very painful exercise, based on information collected, the consultant can only confirm the view expressed in the CRISIL Report of the lack of an objective, transparent, and equitable approach to transactions. The wording of lease and concession documents reflect a statutory rather than contractual approach. While it is generally agreed that this type of legal instrument has a double (statutory and contractual) character, the

distinction is not apparent. This is not surprising, given that privatization is new to Indian port administration. In fact, a lot has already been done. It is necessary, however, to elaborate standard documents acceptable to both Government and the private parties, such elaboration should therefore be conducted in joint meetings, possibly with outside help to benefit from international experience. It is highly significant in that respect that what should be a Concession Contract for a BOT scheme is titled License Agreement—the word License implying a statutory rather than contractual approach to the arrangement.

3.8 State Ports

The consultant collected information on four states: Gujarat, Karnataka, Andhra Pradesh, and Orissa. Again, the CRISIL Report gives sufficient information, which will not be reproduced here. Generally, states are more open and flexible than central government and port trusts, and flexible in their approach to private participation: single window clearance mechanisms, freedom of tariffs, etc. However, the capacity of state administrations is limited. For example, they may be tempted to be lax in releasing large areas of land to investors at excessively favorable financial conditions. They need guidance in that respect and in many other matters. They do not have the capacity to appraise projects and analyze proposals. Project proposals by bidders are inadequate since the preparation of projects involves the spending of large sums of money.

170

4.0 Recommendations for USAID Involvement

The objective of USAID should be to develop institutional capacity in the port sector

The following findings should guide USAID intervention

- (i) There is no policy constraint to private intervention in ports, but considerable streamlining of practices and procedures is necessary, further, the whole port system is changing. Managers have to devise and operate the changes at the same time as they accommodate the needs of the private sector
- (ii) Presence of the private sector is necessary and accepted for financial and efficiency reasons, but the port private sector tends to manipulate the system for the best of its interests. The sector is easily monopolistic, oligopolistic, or prone to cartellization. The interests of the private sector must (a) satisfy the essential service character that the law attributes to ports, and (b) truly reflect market forces. This implies some degree of regulation, any lease or concession will therefore be both contractual and statutory
- (iii) The Asian Development Bank is strongly involved in ports. The local International Finance Corporation (IFC) Office does not deal with infrastructure and leaves it to their Head Office in Washington, DC. The IFC representative was absent from Mumbai when the consultant visited this city. He reportedly tried to develop some action in port matters, but failed and was somewhat discouraged, this has to be checked and confirmed. Lastly, the Dutch Government is launching a much-needed project to improve cargo-handling techniques in trust ports. Any technical assistance or other intervention in port matters would necessitate additional and structured consultation with ADB, the IFC, and other aid agencies and a structured liaison program
- (iv) Government gives priority to ports. Advice and consultation are said to be welcome. The main technical assistance necessary would be advice and consultation on draft legislation, and draft license and concession documents, in association with local lawyers and representatives of the private sector. This is where there is a gap. The ADB states candidly that they have not been sufficiently involved in institution building. This is not fully accurate given their initiative regarding the Tariff Authority and their technical assistance program to that new agency
- (v) While senior staff appear well informed of international developments in the area of ports, this is not true of other managers and officers. They lack international exposure. The absence of Indian port staff in international training programs such as those organized by the International Maritime Organization (London) or the International Association of Ports and Harbors (Tokyo), or in national programs is

noticeable Still, information from outside is anxiously requested Mention was made, for example, of Continental Europe experience in concessions and leases

- (vi) In Karnataka and Andhra Pradesh, everything needs to be done at the central level Significantly, the state of Gujarat, which has made the greatest progress in the area of ports, benefited from a permanent technical assistance by a resident economist Andhra Pradesh and Karnataka would need (a) a joint seminar on public port administration and private intervention in ports, which could be organized in liaison with the Indian Port Management Institute in Madras, the capacity of which needs evaluation, and (b) the elaboration of a manual of appraisal of port investments and involvement of the private sector in ports

A USAID Five-Year Program may include

- (i) An average of 40 person-days/year (probably less after two years) of consultation and advice on legislation, regulations, concessions, leases, and other instruments of private sector intervention This may also help solve the problems raised by the establishment of the Tariff Authority Counterparts would be the Ministry of Surface Transport and local lawyers
- (ii) Definition of a technical assistance program for Andhra Pradesh and Karnataka to help them establish a reasonably light and effective system of port administration and monitoring of private sector intervention Such definition would require 40 person-days
- (iii) Implementation of the technical assistance programs above including two carefully prepared courses in India, one of initiation and the other of consolidation 18 months later The preparation of the seminar should include the production of a set of streamlined documents on the different aspects of port management, presenting a coherent set of doctrine and practice on the matter Such preparation will be major work requiring some 120 person-days of services, plus printing and other associated costs
- (iv) A structured program of participation of Indian staff in international and U S port training programs (IMO, University of Louisiana, etc)

**Annex 1 Private Participation In India's Ports Sector
Constraints And Proposed USAID Interventions**

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
Lack of communication and cooperation between aid agencies resulting in ill-coordinated policies and actions	Establishing a permanent consulting group on ports and a formalized partnership	Proposing formalized partnership to IBRD, IFC, ADB and others	None	Joint policies in the port sector
No policy constraint but lack of an objective and transparent approach to privatization transactions New policy is formulated in directives, still rather restrictive	Change in administrative culture, which may be encouraged by commercialization and corporatization of present port trusts	Advice in port policy as requested by MOST	MOST	None Action does not lend itself to such an objective
The enactment of a new user-friendly Act to promote private participation in the development of ports is overdue Trust ports are at present service ports, conducting port operations on force account, and statutory corporations with regulatory jurisdiction They should in future be landlord ports, not conducting operations directly, and commercial corporations under company law Since the transformation in landlord ports will take time, trust ports will compete with their own lessees and concessionaires	Careful preparation of new legislation A Committee has been appointed in MOST The consolidation of the 1908 Ports Act and of the 1963 Trust Ports Act is considered, which seems to raise suspicion in state ports that the Central Government may increase	Technical assistance (better formulated as consultation) to help MOST to take a broad and innovative view of the issues	MOST	Elaboration of new legislation within one year

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
	the number of its own trust ports			
<p>The Tariff Authority was established at the request of ADB and of private parties, these suspect that, when Trust Ports operate in competition with their own terminals, they may manipulate tariffs under their control to the detriment of lessees and concessionaires</p> <p>The 1997 Ordinance to amend the Major Port Trusts Act gives extensive powers to the Tariff Authority to fix the frame and rates of tariffs. The Government may at any time supersede the Authority's decisions and/or give it policy directions. The establishment of the Tariff Authority restricts the autonomy of existing Port Trusts and to increase centralization by the recourse to an additional bureaucratic decision making level. ADB-financed technical assistance to Tariff Authority may encourage the development of a huge regulatory body, which has already given evidence of its desire to extend its jurisdiction to all port activities and management.</p> <p>Revision of the approach to tariff fixing</p> <p>Lessees, port trusts and concessionaires should propose their own tariffs to be applicable as ceilings over a covenanted period of time. Approval should be implicit, the Tariff Authority, if such is needed, making formal intervention only when they disagree with the proposed tariffs.</p>				As above

182

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
Existing bid documents and concession contracts contain unacceptable clauses, such as those regarding tariffs termination, ownership and transfer of assets, etc. These documents are not bankable. This seems to be due to a lack of familiarity with concessions that may have led MOST to accept less than adequate documents prepared by consultants.	Revision of existing documents on concessions.	Advice and consultation on documents.	MOST, local lawyers, private sector.	Production of acceptable documents within one year.
Directives on private sector participation are restrictive regarding dock labor. Dock labor problems are only partly solved, despite that it is known to be one of the main causes of the insufficient productivity of Indian ports.	Continue reform port labor.	None.	MOST.	An internal and highly political issue. At best, Government attention may be brought to the problem as an essential one.
Lack of clarity regarding the financing by the private sector of heavy and lumpy investments such as breakwaters and wharves, as opposed to superstructure and equipment. Status of finance in port sector unclear with some ports having sizable reserves. Wording of present concessions and lease agreements reveals a rent-seeking attitude from port trusts.	Clear rules applicable to port finances and investments should appear in new legislation.	Advice in drafting legislation. Advice in fixing financial objectives of trust ports to rent-seeking. Advice on taxation and possible dividend payments by trust ports.	MOST.	Insertion of clear and modern financial clauses in new legislation.

Constraints in the Ports Sector	Recommendations to Overcome	TA for USAID	Counter-part Agency	Expected Outcomes
Weak public port administration in Andhra Pradesh and Karnataka	Training and technical assistance	One strongly structured port sector management course with didactic material If resources permit, technical assistance visits at intervals	State Port Agency and Chamber of Commerce	Course within 18 months
Major ports prepare detailed feasibility studies of proposed concessions and make them available to bidders for preparing bids. State governments leave this to the bidders themselves. This results in poor response as bidders are reluctant to spend large sums of money at the bidding stage.	Training of state governments staff and elaboration of project preparation manuals	Assistance in writing manual	same	Manual to be issued within 18 months
Indian port staff are notably absent from international port training courses and seminars or international gatherings	Presence of selected staff, mainly from middle management, to such courses and seminars	Sponsoring and financing	MOST and Ports	Admission to International Maritime Organization Management Course. At least 4 trainees/year in different courses

15

