PUBLIC-PRIVATE PARTNERSHIPS IN INFRASTRUCTURE DEVELOPMENT

A Primer

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The views presented in this primer, however, may not necessarily be considered to represent the official views of the Secretariat of the United Nations.

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INTRODUCTION

Governments worldwide have increasingly turned to the private sector to provide infrastructure services in energy and power, communication, transport and water sectors that were once delivered by the public sector. There are several reasons for this growing involvement of the private sector which include:

- Availability of additional resources to meet the increasing needs of investment in infrastructure services
- Increased efficiency in project delivery and operation
- Access to advanced technology
- Sustainable development in infrastructure facilities and services.

More recently, and as in other sectors of the economy, the policy shift towards a market economy has also led to a growing interest in public-private partnerships (PPPs) in infrastructure development.

Private participation in infrastructure is not new, however (see box 1). PPPs\(^1\) in their present forms may be viewed as a relatively new addition to an ever-evolving relationship between the public and private sectors. In recent years, more and more countries have come up with their own brand of PPP models and administrative arrangements for project implementation in line with their legal, social and administrative systems and which can help achieve political objectives of governments.

In a public and private partnership arrangement, each partner, usually through legally binding contract(s) or some other mechanism, agrees to share responsibilities related to implementation and/or operation and management of a project. This collaboration or partnership is built on the expertise of each partner that meets clearly defined public needs through the appropriate allocation of:

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\(^1\) Several other terms such as private sector participation (PSP) and private participation in infrastructure (PPI) are also used. These terms may not always have the same meaning. For the purpose of this primer however, the terms PPP, PSP and PPI have been considered to have the same meaning and may have been used interchangeably.
• Resources
• Risks
• Rewards, and
• Responsibilities

The allocations of these elements and other aspects of PPP projects such as, details of implementation, termination, obligations, dispute resolution and payment arrangements are negotiated between the parties involved and are documented in written contract agreement(s) signed by them.

Box 1: Private participation in infrastructure is not new

The history of private sector participation in infrastructure development is quite old. Private sector participation in the transport sector, for example, dates back to seventeenth century canal and road concessions in Europe and the United States of America. Private companies built the American railways in the nineteenth century. Many early public transport systems in European and American cities were also developed by the private sector under various municipal charter or franchise arrangements with revenues coming from fares and land development.

The situation in many countries in Asia was not very different either. For example, railways in the Indian subcontinent were first introduced in 1853 through private initiatives. The Great Indian Peninsula Railway Company introduced the first railways in India near Mumbai with British capital and organization. Subsequently, other companies built railways in other parts mainly radiating inward from the three major port cities of Mumbai (Bombay), Chennai (Madras) and Kolkata (Calcutta). The then Government in India encouraged the setting up of railways by private investors under a scheme that guaranteed an annual return of 5 per cent. The Government also authorised the companies to acquire necessary land with compensation for the construction of the railway lines and railway establishments. Once completed, the company was passed under government ownership, but the operation remained under the control of the company that built them. This was essentially the build-transfer-operate PPP model of the present times. Most of the early municipal water and power supply systems in the Indian subcontinent were also built and operated by private operators under various agreements with the government.


PPPs have become attractive to governments as an off-budget mechanism for infrastructure development as this arrangement may not require any immediate cash spending. The public sector’s other main advantages include the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation. The private sector considers an optimal whole life cycle costing for the project, which allows the government to get better value for money from the project. This is not possible in a conventional procurement as in such a case design, construction, maintenance and operations usually are undertaken by different agencies.
There are significant differences between a conventional construction procurement project and a PPP project that need to be clearly understood. The main differences include:

- A PPP project is different from a conventional construction project and should not be developed and managed like a construction project.
- A PPP project is viable essentially when a robust business model\(^2\) can be developed.
- The focus of a PPP project should not be on delivering a particular class/type of assets but on delivering specified services at defined levels.
- The risk allocation between the government and the private sector provider is much more complex than that in conventional construction procurement. Both parties should clearly understand the various risks involved and agree to an allocation of risks between them.
- A PPP contract generally has a much longer tenure than a construction contract. Problems may be expected to arise over the long contract tenure. Managing the relationship between the private provider and the contracting government agency over this long contract tenure is vital for the success of the PPP project.

In a developing market, PPPs are often plagued by common misconceptions in peoples mind. However, most of these are not generally true. Some of the common misconceptions and the truth are mentioned below.

- Government has no concern in PPPs. The truth is whether or not government has any direct participation in a PPP project, it always has a stake in it (see section IIIB).
- PPP is privatization. Privatization in the sense of full transfer of ownership is only one of the many models and is not commonly applied.
- Public sector has no control over the project. The truth, government always retains various forms of control through regulatory, legal and other measures.
- PPP projects are large. PPP projects do not always have to be large.
- PPP projects cannot be implemented by local bodies. In many countries local bodies have the legal authority to implement PPP projects and they have implemented such projects (in the Philippines, for example).
- PPP projects are panacea to infrastructure development. Meeting all infrastructure needs through PPP mechanisms may not be feasible as they have many limitations (see below).
- PPP projects are less expensive. It may not be true if the higher cost of borrowed finance cannot be offset through efficiency gains (see Section III C).
- The poor do not benefit from PPPs. Depending on project, the poor may or may not directly benefit but much depends on the project design itself (see Section III D).
- Governments can always finance at a lower cost. In such a case, governments may not consider to implement the project through the PPP modality.

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\(^2\) The term business model is used for a broad range of informal and formal descriptions that are used by enterprises to represent various aspects of its business, including its purpose, offerings, strategies, infrastructure, organizational structures, trading practices, operational processes and policies, and financial performance.
Higher growth of national economies in recent years have led to unprecedented demand for infrastructure services in producing goods and services and in maintaining supply and distribution chains efficient, reliable and cost-effective. PPPs have become important to meet the growing demand for infrastructure services in view of the fact that available funding from traditional sources in most countries falls far short of the financing needs of their infrastructure sectors. However, availability of private funding or interest of the private sector should not be the sole criterion in considering a PPP project. There are additional costs of private financing. See further discussion in Section IIIC and Chapter IV on this matter.

Also, there are underlying fiscal costs and contingent liabilities of PPPs to government that may arise in the medium and long term. Besides, there are many important economic, social, political, legal, and administrative aspects, which need to be carefully assessed before approval of PPPs are given by government. PPPs have various limitations that should also be taken into account while consideration of this modality is made. The major limitations include:

- Not all projects are possible (for various reasons: political, legal, commercial viability, etc.).
- The private sector may not take interest in a project due to perceived high risks or may lack the capacity to implement the project.
- A PPP project may be more costly unless additional costs (due to higher transaction and financing costs) are off-set by efficiency gains.
- Change of ownership of an infrastructure asset to the private sector may not be sufficient to improve its economic performance unless other necessary conditions are met. These conditions may include appropriate sector and market reform, and change in operational and management practices of infrastructure operation.
- Often, the success of PPPs depends on regulatory efficiency.

Nevertheless, considering the advantages of PPPs, governments in most countries consider them as an attractive off-budget mechanism for delivering infrastructure services and have promoted PPPs as a part of their overall strategy. For this purpose, many countries have created a PPP enabling environment through the establishment of necessary legal and regulatory regimes, initiated sector reforms, streamlined administrative procedures, and have formulated policies to promote PPPs. As a result, new highways, rail systems, port and airport facilities, power plants and gas pipelines, telecommunication systems, and water and sewerage systems are increasingly being built and/or the existing ones being improved or upgraded following various models of public-private partnerships. The value of such projects may range from few hundred thousand US dollars to several billion US dollars and are being implemented at all levels of government - national, provincial and local.

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3 A recent ESCAP study estimated that in developing countries of Asia and the Pacific region the total investment gap for all infrastructure sectors was in the order of US$ 220 billion per year.

4 Data from the Private Participation in Infrastructure (PPI) Database of the World Bank shows that, in the developing countries of Asia and the Pacific region between 1990 and 2005 the private sector made investments in 362 transport sector projects. The total value of these projects exceeded US$ 60 billion. Similar information on other sectors namely, energy and power, communication and water sectors are also available from the same source. Some of the project examples given in this primer are from this database.
Telecommunications and energy have led the growth of private sector activity in infrastructure sectors, followed by the transport and water sectors. Globally, private sector participation in infrastructure development grew dramatically between 1990 and 1997. This trend of rapid growth, however, gradually declined from its peak level following the 1997 Asian financial crisis. After sluggish private sector participation for several years there has been an apparent resurgence since 2005.

Now almost all developing countries in Asia and the Pacific region have some PPPs in infrastructure development. Most of the new projects, however, are concentrated in China, India, Indonesia, Malaysia, Republic of Korea, Russian Federation, the Philippines, Thailand and Turkey.

While there has been considerable progress in the above-mentioned countries, progress in most other countries in Asia and the Pacific region has been slower than expected. The main reasons for slow progress in PPP development include:

- Lack of clear understanding about private sector requirements and capacity constraints in the public sector
- Uncertainties in the administrative and approval processes, and
- Unfavourable policy, legal and regulatory environment.

As a consequence, despite the existence of a large number of potential projects, significant numbers of project deals were not being made in most countries.

This primer provides an overall picture of the PPP development process from different perspectives. It considers PPPs in terms of what they can offer and what the limitations are, and the type of expert knowledge that is required to successfully develop and implement PPP projects. Discussion is made on various aspects of PPP development including the major issues from the perspectives of institutional arrangements, operational arrangement of partnerships, government involvement, financing matters, regulatory governance, contractual matters, and social concerns. In order to have a better appreciation of PPPs, it also considers short case studies from different sectors involving various forms of partnerships.
## SUMMARY OF THE MAIN POINTS…

- PPPs refer to long term partnering relationship between the public and private sector to deliver infrastructure services.
- PPPs are not of any recent origin. In many countries, PPPs in infrastructure development originated more than 150 years ago.
- Governments worldwide have increasingly turned to PPPs. The main reasons include availability of additional resources and increased efficiency in project delivery and operation through PPPs.
- A PPP project differs from a conventional construction project in many ways: the focus of PPP is on delivering services and not on procurement of assets; the risk allocation is more complex; and managing the relationship between the public the private sector partners is critical to the success of the project.
- In a partnership each partner has some responsibility and obligations. The government while considering a PPP project should have a clear understanding of its underlying fiscal costs and contingent liabilities, and other responsibilities.
- The PPP mechanism may not be suitable for all projects as it has many limitations, and are subject to social, political, legal and other constraints.
- The main reasons for slow progress in PPP development in most countries include: capacity constraints in the public sector, uncertainties in the administrative and approval processes, and unfavourable policy, legal and regulatory environment.
I

INSTITUTIONAL ARRANGEMENT

A. Legal Basis of PPPs

In most countries, provision of infrastructure services is the responsibility of the public sector. Depending on the political and administrative structure of the country, legislations at different levels of government (local, provincial, and national) may govern the infrastructure sectors. As such, generally some form of legal authority of an appropriate level of government is required to permit private involvement in infrastructure development. Legal provisions may also be required to process, promote and facilitate private involvement.

In many countries, the legal provisions and procedures related to private sector participation are complex, numerous, scattered over many different instruments and often not clear on many issues, and have no fixed time frame for completion. For example, the PPP legal regime may scatter over many instruments that include the private contract law, company law, tax law, labour law, competition law, consumer protection law, insolvency law, infrastructure sector laws, property law, foreign investment law, intellectual property law, environmental law, public procurement law or rules, acquisition or appropriation law and many other laws. To address these problems, many countries have enacted special legal and regulatory instruments and/or have suitably amended their existing infrastructure sector laws. These measures have helped to reduce the level of uncertainty surrounding public-private partnership project deals and have increased investors confidence.

Legislation may also play an important role in facilitating the issuance of various licences and permits that may be required for project implementation. Such licences and permits include licences for setting up a company by the concessionaire, licence for exploration and extraction of mineral resources, work permit for foreigners, import licence for equipment and other supplies, building permits, and radiofrequency spectrum allocation for telecommunication and television transmission.

The special legal instruments may specify the types of permitted PPP models, general conditions for these models, guidelines on risk sharing arrangements, provision of financial and other incentives, and may provide details of project identification, approval, procurement (including contract negotiation and making contract agreement), and implementation arrangements. The legal instruments may also define division of responsibility between different levels of government. In some countries, special PPP units in governments have been established

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5 The PPI Act of the Republic of Korea (see box 2) is such a legal instrument. Legal instruments of many countries however, do not provide details of the partnership arrangements and the administrative process (for example, the Private Participation in State Undertaking Act of Thailand).
under the provisions of such special legal instruments. These special PPP units in governments facilitate PPP project development and implementation in those countries. The BOT Center in the Philippines is an example of such a PPP unit established under the BOT Law of the country. See Box 2 for examples of legal instruments and PPP units in Asia and the Pacific region.

**Box 2: PPP Acts/legal instruments and PPP units in governments**

**PPP Acts/legal instruments**
Examples of PPP legal instruments from Asia and the Pacific region include Private Provision of Infrastructure (PPI) Act, Republic of Korea; Build-Operate-Transfer Law, the Philippines; Act on Private Participation in State Undertaking, Thailand; Build-Operate-Transfer Law, Turkey; Private Finance Initiative Promotion Law, Japan; Land Transport Management Act, New Zealand; Public Private Partnerships Act 2006, Fiji; Law on Concession 2007, Cambodia; Decree on Investment on the Basis of Build-Operate-Transfer (BOT), Build-Transfer-Operate (BTO) and Build-Transfer (BT) Contracts, 2007, Viet Nam; and Gujarat Infrastructure Development Act, Gujarat, and Punjab Infrastructure Development Act, Punjab, India. Similar legal instruments also exist in many countries of Europe including Greece, Ireland, Italy and the United Kingdom, and in many States of the United States of America. Many countries in Africa including the Republic of Mauritius and South Africa have also passed special legal instruments on PPPs.

**PPP units in governments**
Special PPP units exist in Bangladesh (Infrastructure Investment Facilitation Centre or IIFC), Indonesia (National Committee for the Acceleration of Infrastructure Provision Policy or KKPPI), the Philippines (BOT Center), Pakistan Infrastructure Project Development Facility (IPDF), Republic of Korea (Private Infrastructure Investment Management Center, PIMAC), Fiji (PPP Unit), and Sri Lanka (PPP Unit, Board of Investment). Some states in India such as Gujarat and Punjab have established PPP units. Many countries in Europe also have PPP units in Governments. Some other Governments have established a special cell within the Prime Minister’s Office or a senior ministry to deal with PPP projects as in Malaysia, India and many states in Australia (for example, Partnership Victoria in the State of Victoria).

**B. Administrative Mechanism and Coordination**

The administrative mechanism of PPP project implementation depends on the system of government and the overall administrative structure, and the legal regime concerning PPPs. As these elements vary from one country to another, the administrative mechanism also varies from one country to another. Generally, the sectoral agencies at the national and provincial levels (in a federal structure) initiate and implement most of the PPP projects. However, in many countries, the Philippines for example, local level governments such as city governments are also allowed to undertake PPP projects.

Depending on the system in a country, the implementation of PPP projects may require the involvement of several public authorities at various levels of government. For example, the regulatory authority for a sector concerned may rest with a public authority at a level of government different from the one that is responsible for providing a particular service. Sometimes, the regulatory and operational functions are combined in one authority. This arrangement is usually common in the early years of private participation in a sector. The authority to award PPP contracts and approve contract agreements is generally
centralized in a separate public authority. This may be a special body for this purpose and is usually at the ministerial or council of ministers level.

The legal instruments and/or government rules and guidelines define how the sectoral agencies and local governments may initiate, develop, submit for approval of the national/provincial government, procure, negotiate and make deal with the private sector, and finally implement a project. These legal instruments may also define the authority and responsibilities concerning PPPs at different levels or tiers of government.

Figure 1 shows the steps that are generally considered in a PPP project implementation process. More details on tasks at various stages of project development and implementation are provided in table 1. Clear definitions and procedures of various tasks and administrative approval from competent authorities at different stages of project implementation process are necessary in running a successful PPP programme. Streamlined administrative procedures reduce uncertainties at different stages of project development and approval and help to reduce the transaction cost\(^6\) of a PPP project. Annex I provides an example of the defined PPP project implementation process and tasks at each stage in the state of Victoria in Australia.

Developing a PPP project is a complex task requiring skills of a diverse nature many of which are not normally required for traditional public sector projects. The success of PPP projects depends on a strong public sector which has the ability to identify, develop, negotiate, procure, and manage suitable projects through a transparent process. However, the knowledge and the necessary skills that are required in development, financing and management of PPP projects are often lacking in the public sector.

One means of developing the knowledge and skills has been the creation within governments of dedicated Public-Private Partnership Units or launching of special PPP programmes with similar objectives. Such units or programmes have been established in many countries in Asia and Europe and they are structuring more and more successful projects.

The administrative status of PPP units, however, varies from one country to another. For instance, it may be a government, semi-government, autonomous or even a quasi-private entity. The role and function of such units also greatly vary from one country to another. While in some countries these units have a very strong role and wide range of functions from project development to project approval (as in the Philippines, Gujarat in India, and the U.K.), in other countries they have advisory role with limited functions (the Netherlands and

\(^6\) The development of a PPP project requires firms and governments to prepare and evaluate proposals, conduct bidding and negotiate deals, and arrange funding. The costs incurred in these processes are called transaction costs, which include staff costs, placement fees and other financing costs, and advisory fees for investment bankers, lawyers, and consultants. Transaction costs may range from 1 to 2 percent to well over 10 per cent of project cost. Experts suggest that transactions cost vary mainly with familiarity and stability of the policy and administrative environment and not so much with the size or technical characteristics of a project (See in Michael Klein et al. 1996. “Transaction costs in private infrastructure projects – are they too high?”, Public Policy for the Private Sector, Note Number 95, World Bank, Washington D.C. Available at: <http://rru.worldbank.org/Documents/PublicPolicyJournal/095klein.pdf>.)
Italy, for example). See Box 3 for more details on structure and functions of the BOT Centre in the Philippines as an example of a PPP unit.

Notes: DOE = Department of Environment; BOI = Board of Investment. Government approval may be required at several stages. More details of activities at different points are shown in Table 1. Government approval may be required at several stages in the entire process. The likely points of approval are also shown in the table.

Figure 1. Steps in the PPP project implementation process
## Table 1. Stages in PPP project development and implementation

1. **Identification of private sector/PPP projects**
   - Project identification

2. **In-house preparatory arrangements**
   - Conceptual project structure
   - Institutional due diligence (legal and regulatory framework, government policy, involvement of other departments, in-house capacity, etc.)
   - Project implementation strategy
   - Setting of project committee(s)

3. **Government approval (e.g. by a special body established for PPPs)**

4. **Appointment of transaction advisor (if needed)**
   - Terms of reference
   - Appointment

5. **Government approval**

2. **Project development and due diligence**
   - Project planning and feasibility
   - Risk analysis
   - Financing
   - Value for money
   - Business model
   - Government support
   - Service and output specifications
   - Basic terms of contract
   - Independent credit rating (when possible)
   - Preliminary financing plan
   - Government approval (Special body, concerned ministries, central bank)
   - Financing plan

3. **Implementation arrangement and pre-procurement**
   - Implementation arrangement
   - Bidding documents
   - Draft contract
   - Special issues (land acquisition, foreign exchange, investment promotion, etc.)
   - Bid evaluation criteria, committees

4. **Procurement**
   - Market sounding
   - Pre-qualification of bidders
   - RFP – finalization of service and output specifications
   - Final tender
   - Bid evaluation and selection

5. **Contract award and management**
   - Contract award, financial close and contract signing
   - Service delivery management
   - Contract compliance
   - Relationship management
   - Renegotiation (when needed)
   - Government approval of renegotiation terms (Special body, cabinet, etc.)

6. **Dispute resolution**
   - Establishment of a process and a dispute resolution team

Note: Mention of government approval and the activities shown at any stage are only indicative. The actual stages of government approval and activities undertaken in any stage vary from one country to another.
Another important issue in project implementation is administrative coordination. Generally, multiple agencies are involved in project implementation. The issuance of licences and permits may also need action of many government agencies, often at different levels of government. An institutional mechanism may be required to be established for the coordination of actions by the concerned agencies involved in project implementation as well as for issuing of necessary approvals, licences, permits or authorizations in accordance with the legal and regulatory provisions. The implementing agency can identify all such agencies and authorities that would be involved in the implementation process and in issuing the licences and permits, and establish coordination/liaise mechanism at the outset to facilitate the required approvals and issuance of licences and permits in a timely manner.

**Box 3. The BOT Centre, Philippines**

Private sector participation is a key strategy of the Government of the Philippines. The Built-Operate-Transfer (BOT) Law of 1991 spells out the policy and regulatory framework for private sector participation in infrastructure projects and other public services in the country. The BOT Centre, a government agency attached to the Department of Trade and Industry (DTI), has the mandate to coordinate and monitor the implementation of the BOT Law. The Centre’s main function is to find financial, technical, institutional and contractual solutions to help implementing agencies and local governments to make BOT projects work.

Headed by an Executive Director, who reports directly to the Secretary of DTI, the Centre is organized in two groups: the project development group and the programme operations group. The project development group is composed of four sectoral divisions (transport, power and environment, information technology, social infrastructure and special concerns), and the programme operations group is composed of three divisions (programme monitoring and management information, marketing and resource mobilization, administration and finance).

The BOT Centre prepares and periodically reviews and updates the screening guidelines for projects applying for project funding under the project development facility, prepares the terms of reference for technical assistance to implementing agencies, reviews and moves to amend the Implementing Rules and Regulations for PSP and assists government agencies in expediting the implementation of private projects through facilitation and problem-solving interventions and monitoring of private activities/projects.

As at 30 June 2006, the total value of completed PPP projects facilitated by the center was as follows: transport (8 projects), US$ 2,654 million; power sector (23 projects), US$ 7,705 million; information technology (3 projects), US$ 143 million; water (5 projects), 7,839 million; property development (5 projects), US$ 33 million; others (3 projects), US$ 416 million. Besides, there were also number projects for which concessions have been awarded and were under construction, and projects which were in different stages of the approval process.

Source: Communication with the BOT Center (August 2006), and Kintanar et al 2003.
MAJOR ISSUES CONCERNING INSTITUTIONAL ARRANGEMENT...

- It is necessary to reduce the level of uncertainty surrounding public-private partnership project deals to increase the confidence of investors. In many countries, the existing legal and regulatory environment may be conservative and too restrictive for undertaking PPPs. Governments have considered enacting new legislations or suitably amend their existing infrastructure laws to address this issue. The legal instruments may specify, among other things, the general conditions for PPP models, provision of financial and other incentives, and details of project development and implementation arrangements.

- Clear definitions, responsibilities and timeframe for various tasks and a transparent rule-based administrative process by which PPP projects are developed, approved and procured by governments are necessary in running a successful PPP programme. Streamlined administrative procedures reduce uncertainties in project development and approval, and also reduce the transaction costs in project development.

- The knowledge and the skills that are required in PPP project development and implementation are often lacking in the public sector. One means of developing the knowledge and skills has been the creation within governments of dedicated Public-Private Partnership Units or launching of special PPP programmes with similar objectives. Such units have been created and programmes launched in many countries of the world.
II

PPP STRUCTURE AND MODELS

A. PPP structure

A typical PPP structure can be quite complex involving contractual arrangements between a number of parties including the government, project sponsor, project operator, financiers, suppliers, contractors, engineers, third parties (such as an escrow agent7), and customers. The creation of a separate commercial venture called a Special Purpose/Project Vehicle (SPV) is a key feature of most PPPs. The SPV is a legal entity that undertakes a project and all contractual agreements between various parties are negotiated between themselves and the SPV. SPVs are also a preferred mode of PPP project implementation in limited or non-recourse situations, where the lenders rely on the project’s cash flow and security over its assets as the only means to repay debts. Figure 2 shows a simplified PPP structure. The actual structure of a PPP however, depends on the type of partnerships as may be seen in discussion presented later.

Figure 2. Typical structure of a PPP project8

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7 An escrow agent (normally a financial institution) is appointed by the project company and the lenders for managing an account called escrow account. The escrow account is set up to hold funds (including project revenues) accrued to the project company. The funds in the account are disbursed by the escrow agent to various parties in accordance with the conditions of the agreements. An escrow account is also used to hold a deposit in trust until certain specified conditions are met.

8 The box on the right side labelled “expert” represents various participating groups in a PPP project including engineers (designer), contractor (builder), operator and insurer. Similarly, the box on the left side labelled “financiers” includes various parties investing in a project comprising equity and debt financiers which may include domestic and foreign banks and financial institutions, bi-lateral and multi-lateral donor agencies, development banks, and similar other agencies.
The SPV is usually set by the private concessionaire/sponsor(s), who in exchange for shares representing ownership in the SPV contribute the long-term equity capital, and agree to lead the project. The Government may also contribute to the long-term equity capital of the SPV in exchange of shares. In such a case, the SPV is established as a joint venture company between the public and private sectors and the government acquires equal rights and equivalent interests to the assets within the SPV as other private sector shareholders.

Sometimes governments want to ensure a continued interest (with or without controlling authority) in the management and operations of infrastructure assets such as a port or an airport particularly which have strategic importance, or in assets that require significant financial contribution from the government. In such a case, a joint venture may be established. A joint venture is an operating company owned by a government entity and a private company (or multiple companies including foreign companies if permitted by law), or a consortium of private companies. Often, the SPV is formed as a joint venture between an experienced construction company and a service operations company capable of operating and maintaining the project.

Other than its strategic, financial and economic interest, the government may also like to directly participate in a PPP project. The main reasons for such direct involvement include:

- To address political sensitivity and fulfil social obligations
- To ensure commercial viability
- To provide greater confidence to lenders
- To have better insight to protect public interest.

Depending on government policy, the private sector company may or may not be allowed to hold the majority stake in a joint venture. For example, considering strategic importance of ports, private stakes in ports in China were limited to a maximum of 49 per cent. However, the Government of India has allowed 74 per cent of the stakes in the joint venture companies for Delhi and Mumbai airports to be held by the private sector. In another example from India, the Pipavav Rail Corporation Ltd a 50:50 joint venture between Indian Railways and Pipavav Port Ltd was set up to construct, maintain and operate a 270-km long railway line connecting the Pipavav port in Gujarat to Surendranagar Junction on the Western Railway.

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9 An SPV is a commercial company established under the relevant Act of a country through an agreement (also known as memorandum of association) between the shareholders or sponsors. The shareholders agreement sets out the basis on which a company is established, giving such details as its name, ownership structure, management control and corporate matters, authorized share capital and the extent of the liabilities of its members. The authorized share capital is the maximum amount of equity capital, measured at par value, that a company is allowed to raise by issuing shares to existing or potential shareholders (or investors).

B. PPP models

A wide spectrum of models has emerged to enable private sector participation in providing infrastructure facilities and services. The models vary from short-term simple management contracts (with or without investment requirements) to long-term and very complex BOT form, to divestiture. These models vary mainly by:

- Ownership of capital assets
- Responsibility for investment
- Assumption of risks, and
- Duration of contract.

The PPP models can be classified into four broad categories in order of generally (but not always) increased involvement and assumption of risks by the private sector. The five broad categorisations are:

- Supply and management contracts
- Turnkey projects
- Affermage/Lease
- Concessions
- Private ownership of assets.

The basic features of these five broad categories of PPP models are shown in figure 3. Each model has its own pros and cons and can be suitable to achieve some of the objectives of private participation. Special characteristics of some sectors and their technological development, legal and regulatory regimes, and public and political perception about the services in a sector may also be factors in deciding the suitability of a particular form of private participation. For example, management contracts are common for existing assets in the water and transport sectors, affermage/lease in the transport sector, concessions in the transport and telecommunication sectors, and turnkey and private ownership of assets in the power sector.
A categorization of the PPP/PSP models is shown in table 2.\textsuperscript{11} While the spectrum of models shown in the table are possible as individual options, combinations are also possible such as a lease or (partial) privatization contract for existing facilities which incorporates provisions for expansion through Build-Operate-Transfer. In fact, many contracts of recent times are of combination type. Examples of combination type include The Shanghai Container Terminal Company Limited (between the Port Authority and Hutchinson Whampoa in Shanghai, China), International Container Terminal Services, Inc. (in Manila, Philippines), and Delhi International Airport Limited (under an Operation-Maintenance-Development Agreement between GMR-Fraport Consortium and Airports Authority of India in New Delhi, India). These long-term lease/concession combination contracts involve operation and management and significant investments in existing public assets.

The Port Kelang Container terminal deal in Malaysia is also an example of the combination type of PPP that involved leasing of existing infrastructure facilities at the port and Build-Rehabilitate-Operate-Transfer (BROT) for further infrastructure development. The terminal facility was located on land that could not be legally sold to any private company. In order to circumvent this problem, the Port Authority leased the land to the private company for 21 years for the express purpose of operating a container terminal\textsuperscript{12}.

\textsuperscript{11} The use of various categorization terms in the table, and arrangements that go by these terms do not always have the same features as set out in the table or mentioned in the discussion afterwards.

\textsuperscript{12} Havelka, Zdenek sen. and Zdenek Havelka, June (1990), Privatization of Transport in Developing Countries, GTZ, Eschborn, pp. 196-209.
Table 2. Classification of PPP/PSP models

<table>
<thead>
<tr>
<th>Broad category</th>
<th>Main variants</th>
<th>Ownership of capital assets</th>
<th>Responsibility of investment</th>
<th>Assumption of risk</th>
<th>Duration of contract (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply and management contract</td>
<td>Outsourcing</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>Public</td>
<td>Public/Private</td>
<td>Private/Public</td>
<td>3-5</td>
</tr>
<tr>
<td></td>
<td>Operational</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>3-5</td>
</tr>
<tr>
<td>Turnkey</td>
<td>Public</td>
<td>Public</td>
<td>Private/Public</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td>Affermage/Lease</td>
<td>Affermage</td>
<td>Public</td>
<td>Public</td>
<td>Private/Public</td>
<td>3-20</td>
</tr>
<tr>
<td></td>
<td>Lease*</td>
<td>Public</td>
<td>Public</td>
<td>Private/Public</td>
<td>3-20</td>
</tr>
<tr>
<td>Concessions</td>
<td>Franchise</td>
<td>Public/Private</td>
<td>Private/Public</td>
<td>Private/Public</td>
<td>3-7</td>
</tr>
<tr>
<td></td>
<td>BOT**</td>
<td>Public/Public</td>
<td>Private/Public</td>
<td>Private/Public</td>
<td>15-30</td>
</tr>
<tr>
<td>Private ownership of assets (PFI type)</td>
<td>BOO/DBFO</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Indefinite</td>
</tr>
<tr>
<td></td>
<td>PFI***</td>
<td>Private/Public</td>
<td>Private</td>
<td>Private/Public</td>
<td>10-30</td>
</tr>
<tr>
<td></td>
<td>Divestiture</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Indefinite</td>
</tr>
</tbody>
</table>

* Build-Lease-Transfer (BLT) is a variant.
** Build-Operate-Transfer (BOT) has many other variants such as Build-Transfer-Operate (BTO), Build-Own-Operate-Transfer (BOOT) and Build-Rehabilitate-Operate-Transfer (BROT).
*** The Private Finance Initiative (PFI) model has many other names. In some cases asset ownership may be transferred to, or retained by the public sector.

Management contracts

A management contract is a contractual arrangement for the management of a part or whole of a public enterprise (for example, a specialized port terminal for container handling at a port or a utility) by the private sector. Management contracts allow private sector skills to be brought into service design and delivery, operational control, labour management and equipment procurement. However, the public sector retains the ownership of facility and equipment. The private sector is provided specified responsibilities concerning a service and is generally not asked to assume commercial risk. The private contractor is paid a fee to manage and operate services. Normally, payment of such fees is performance-based. Usually, the contract period is short,
typically two to five years.\textsuperscript{13} But longer period may be used for large and complex operational facilities such as a port or airport. Figure 4 shows typical structure of a management contract.\textsuperscript{14}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{management_contract.png}
\caption{Management contract}
\end{figure}

The main pros and cons of this model include the following:

\textit{Pros}:
- Can be implemented in a short time
- Least complex of all the broad categories of PPPs
- In some countries, politically and socially more acceptable for certain projects (such as water and strategic projects like ports and airports)

\textit{Cons}:
- Efficiency gains may be limited and little incentive for the private sector to invest
- Almost all risks are borne by the public sector
- Applicable mainly to existing infrastructure assets

There are several variants under the management contract including:

- Supply or service contract
- Maintenance management
- Operational management

These variants are explained hereafter.

\textsuperscript{13} For example, the initial management contract for Port Klang in Malaysia with a foreign company was only for three years. The main purpose was to set-up the system so that eventually a local company could take over for a longer period. See more on this project in a later section in this document.

\textsuperscript{14} In figure 2 and all other subsequent figures only the main flows between different entities are shown to illustrate the typical arrangements.
Supply or service contract

Supply of equipment, raw materials, energy and power, and labour are typical examples of supply or service contract. A private concessionaire (see below) can itself enter into a number of supply or service contracts with other entities/providers for the supply of equipment, materials, power and energy, and labour. Non-core activities of an organization (public or private) such as catering, cleaning, medical, luggage handling, security, and transport services for staff can be undertaken by private sector service providers. Such an arrangement is also known as outsourcing.

Some form of licensing or operating agreement is used if the private sector is to provide services directly to users of the infrastructure facility. Examples of such an arrangement include, licensing of stevedoring companies for cargo handling labour at ports and catering services for passengers on railway systems (the Indian Railways, for example). The main purpose of such licensing is to ensure the supply of the relevant service at the desired level of quantity and quality.

Maintenance management

Assets maintenance contracts are very popular with transport operators. Sometimes equipment vendors/suppliers can also be engaged for the maintenance of assets procured from them. For example, most buses of the Bangkok Metropolitan Transport Authority in Bangkok, Thailand are maintained by the supplier companies.

Operational management

Management contracts of major transport facilities such as a port or airport may be useful when local manpower or expertise in running the facility is limited or when inaugurating a new operation. Many airport and port facilities in the region (for example, Delhi Airport Cargo Terminal; Vientiane Airport Terminal; The New Container Terminal in Chittagong, Bangladesh) are managed and operated by the private sector operators. Management contracts are also quite common in the transport sector for providing some of the non-transport elements of transport operations such as the ticketing system of public transport and reservation systems. Operational management of urban transport services can also be contracted out to the private sector.

In the simplest type of contract, the private operator is paid a fixed fee for performing managerial tasks. More complex contracts may offer greater incentives for efficiency improvement by defining performance targets and the fee is based in part on their fulfilment.

Turnkey

Turnkey is a traditional public sector procurement model for infrastructure facilities. Generally, a private contractor is selected through a bidding process. The private contractor designs and builds a facility for a fixed fee, rate or total cost, which is one of the key criteria in selecting the winning bid. The contractor assumes risks involved in the design and construction phases.
The scale of investment by the private sector is generally low and for a short-term. Typically, in this type of arrangement there is no strong incentive for early completion of a project. This type of private sector participation is also known as Design-Build. Figure 5 shows the typical structure of a turnkey contract.

**Figure 5. Turnkey contract**

The main pros and cons of this model include the following:

**Pros:**
- Well understood traditional model
- Contract agreement is not complex
- Generally contract enforcement is not a major issue

**Cons:**
- The private sector has no strong incentive for early completion
- All risks except those in the construction and installation phases are borne by the public sector
- Low private investment for a limited period
- Only limited innovation may be possible

**Affermage/Lease**

In this category of arrangement an operator (the leaseholder) is responsible for operating and maintaining the infrastructure facility (that already exists) and services, but generally the operator is not required to make any large investment. However, often this model is applied in combination with other models such as build-rehabilitate-operate-transfer. In such a case, the contract period is generally much longer and the private sector is required to make a significant level of investment.
The arrangements in an affermage and a lease are very similar. The difference between them is technical. Under a lease, the operator retains revenue collected from customers/users of the facility and makes a specified lease fee payment to the contracting authority. Under an affermage, the operator and the contracting authority share revenue from customers/users. Figure 6 shows the typical structure of an affermage/lease contract.

In the affermage/lease types of arrangements, the operator takes lease of both infrastructure and equipment from the government for an agreed period of time. Generally, the government maintains the responsibility for investment and thus bears investment risks. The operational risks are transferred to the operator. However, as part of lease, some assets may be transferred on a permanent basis for a period which extends over the economic life of assets. Fixed facilities and land are leased out for a longer period than for mobile assets. Land to be developed by the leaseholder is usually transferred for a period of 15-30 years.

It may be noted here that if the assets transferred to the private sector under a lease agreement are constrained in their use to a specific function or service, the value of assets is dependent upon the revenue potential of that function or service. If assets are transferred to the private sector without restrictions of use, the asset value is associated with the optimum use of the assets and the revenues that they can generate.

Examples of leasing in the transport sector include Rajiv Gandhi Container Terminal, India, Laem Chabang Port Terminals B2, B3 and B4 in Thailand, and Guangzhou Baiyan Airport in China.

The main pros and cons of this model include the following:

**Pros:**
- Can be implemented in a short time
- Significant private investment possible under longer term agreements
- In some countries, legally and politically more acceptable for strategic projects like ports and airports

**Cons:**
- Has little incentive for the private sector to invest
- Almost all risks are borne by the public sector
- Generally used for existing infrastructure assets
- Considerable regulatory oversight may be required


**Concessions**

In this form of PPP, the Government defines and grants specific rights to an entity (usually a private company) to build and operate a facility for a fixed period of time. The Government may retain the ultimate ownership of the facility and/or right to supply the services. In concessions, payments can take place both ways: concessionaire pays to government for the concession rights and the government may also pay the concessionaire, which it provides under the agreement to meet certain specific conditions. Usually such payments by government may be necessary to make projects commercially viable and/or reduce the level of commercial risk taken by the private sector, particularly in the initial years of a PPP programme in a country when the private sector may not have enough confidence in undertaking such a commercial venture. Typical concession periods range between 5 to 50 years.

Figure 7 shows the typical structure of a concession contract. It may be noted that in a concession model of PPP, an SPV may not always be necessary. An SPV may be necessary for a BOT type of concession however.

The main pros and cons of this model include the following:

**Pros:**
- Private sector bears a significant share of the risks
- High level of private investment
- Potential for efficiency gains in all phases of project development and implementation and technological innovation is high

**Cons:**
- Highly complex to implement and administer
- May have underlying fiscal costs to the government
- Negotiation between parties and finally making a project deal may require long time
May require close regulatory oversight
Contingent liabilities to the government in the medium and long term

Concessions may be awarded to a concessionaire under two types of contractual arrangements:
- Franchise
- BOT type of contracts

These concession types are explained below.

**Franchise**

Under a franchise arrangement the concessionaire provides services that are fully specified by the franchising authority. The private sector carries commercial risks and may be required to make investments. This form of private sector participation is historically popular in providing urban bus or rail services. Franchise can be used for routes or groups of routes over a contiguous area.

**Build-Operate-Transfer**

In a Build-Operate-Transfer or BOT (and its other variants namely Build-Transfer-Operate (BTO), Build-Rehabilitate-Operate-Transfer (BROT), Build-Lease-Transfer (BLT)) type of arrangement, the concessionaire undertakes investments and operates the facility for a fixed period of time after which the ownership reverts back to the public sector. In this type of arrangement, operating and investment risks can be substantially transferred to the concessionaire.
However, in a BOT type of model the government has explicit and implicit contingent liabilities that may arise due to loan guarantees provided and default of a sub-sovereign government and public or private entity on non-guaranteed loans. By retaining ultimate ownership, the government controls policy and can allocate risks to those parties best suited to bear them or remove them.

The concessionaire’s revenue in a BOT project comes from managing and marketing of user facilities (for example, toll revenue in a toll road project) and renting of commercial space where possible. Concessions for BOT projects can be structured on either maximum revenue share for a fixed concession period or minimum concession period for a fixed revenue share, a combination of both, or only minimum concession period.

In a BOT concession, the concessionaire may be required to establish a special purpose vehicle (SPV) for implementing and operating the project. The SPV may be formed as a joint venture company with equity participation from multiple private sector parties and the public sector. In addition to equity participation, the government may also provide capital grants or other financial incentives to a BOT project. However, it is also quite common that the government may not have any equity participation in a BOT project company.

BOT is a common form of PPP in all sectors in Asian countries. The Bangkok Mass Transit System Public (BTS), the elevated train system in Bangkok, is an example of BOT project. The project was implemented under a 30-year BOT concession agreement between the concessionaire and Bangkok Metropolitan Administration (the city Government). A large number of BOT port and road projects have been implemented in the region. The BOT model is often used to exploit the existing assets and raise capital resources for modernisation and capacity addition to the existing infrastructure. The Indian Railway is applying this concept for the modernisation of several large city railway stations under the BOT model.

Under the Build-Rehabilitate-Operate-Transfer arrangement, a private developer builds an add-on to an existing facility or completes a partially built facility and rehabilitates existing assets, then operates and maintains the facility at its own risk for the contract period.

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15 The Nhava Sheva International Container Terminal (NSICT) is an interesting example of efficiency gains through a BOT project in the port sector. In 1997, the Jawaharlal Nehru Port Trust (JNPT), India signed an agreement with a consortium led by P&O Australia for development of a two-berth container terminal on BOT basis for 30 years at a cost of US$ 200 million. P&O completed the project before schedule and commenced operations at the new terminal in 1999. From the first year of operation the terminal is handling much more traffic than expected. Private participation also resulted in an impressive efficiency gains. Efficiency indicators such as average turnaround time of ships and output per ship-berth-day at the terminal were comparable to other efficiently operated ports in the region (the average turnaround time in 2003-04 for ships and containers were 2.04 and 1.84 days, respectively, which were far superior to corresponding indicators for other comparable terminals in the public sector).
BROT is a popular form of PPP in the water sector. Many BROT water sector projects have been implemented in China, Indonesia and Thailand.

Port Klang in Malaysia is a good example of BROT in the transport sector. It is also one of the earliest successful PPP projects in the region. Under a 21-year contract, an award was made in 1986 to a private operator, Port Klang Container Terminal to manage and develop container facilities at the port. The Siam Reap Airport in Cambodia is an example of BROT in the airport sector.

A key distinction between a franchise and BOT type of concession is that, in a franchise the authority is in the lead in specifying the level of service and is prepared to make payments for doing so, whilst in the BOT type the authority imposes a few basic requirements and may have no direct financial responsibility.

Private ownership of assets

In this form of participation, the private sector remains responsible for design, construction and operation of an infrastructure facility and in some cases the public sector may relinquish the right of ownership of assets to the private sector.

It is argued that by aggregating design, construction and operation of infrastructure services into one contract, important benefits could be achieved through creation of synergies. As the same entity builds and operates the services, and is only paid for the successful supply of services at a pre-defined standard, it has no incentive to reduce the quality or quantity of services. Compared with the traditional public sector procurement model, where design, construction and operation aspects are usually separated, this form of contractual agreement reduces the risks of cost overruns during the design and construction phases or of choosing an inefficient technology, since the operator’s future earnings depend on controlling costs. The public sector’s main advantages lie in the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation.

The main pros and cons of this model are summarized as follows:

**Pros:**
- Private sector may bear a significant share of the risks
- High level of private investment
- Potential for efficiency gains and innovation is very high

**Cons:**
- Complex to implement and manage the contractual regimes
- May have underlying fiscal costs to the government
- Negotiation between parties and finally making a project deal may require long time
- Regulatory efficiency is very important
- There may be contingent liabilities to the government in the medium and long term

There can be three main types under this form:

- Build-Own-Operate type of arrangement
- Private Finance Initiative (a more recent innovation)
- Divestiture by license or sale

Figure 8 shows a typical structure of this type of PPP model. The three types of private ownership of assets models are discussed below.

**Build-Own-Operate**

In the Build-Own-Operate (BOO) type and its other variants such as Design-Build-Finance-Operate, the private sector builds, owns and operates a facility, and sells the product/service to its users or beneficiaries. This is the most common form of private participation in the power sector in many countries (examples are numerous). For a BOO power project, the Government (or a power distribution company) may or may not have a long-term power purchase agreement (commonly known as off-take agreement) at an agreed price from the project operator.

Many BOO projects have also been implemented in the transport sector. Examples include, Kutch and Pipavav Railways in India (joint venture BOO projects); Xiamen Airport Cargo Terminal in China and Sukhothai Airport in Thailand; and in the port sector, Wuhan Yangluo Container Port in China and Balikapapan Coal Terminal in Indonesia.

In many respects, licensing may be considered as a variant of the BOO model of private participation. The Government grants licences to private undertakings to provide services such as fixed line and mobile telephony, Internet service, television and radio broadcast, public transport, and catering services on the railways. However, licensing may also be considered as a form of “concession” with private ownership of assets. Licensing allows competitive pressure in the market by allowing multiple operators, such as in mobile telephony, to provide competing services.
There are two types of licensing: quantity licensing and quality licensing. By setting limits through quantity licensing, the government is able to moderate competition between service providers and adjust supply between one area and other. Quality licensing however, does not place any restriction on number of providers or the amount of service produced but specifies the quality of service that needs to be provided. The government may get a fee and a small share of the revenue earned by the private sector under the licensing arrangement.

**Private Finance Initiative**

In the Private Finance Initiative (PFI) model, the private sector similar to the BOO model builds, owns and operates a facility. However, the public sector (unlike the users in a BOO model) purchases the services from the private sector through a long-term agreement. PFI projects therefore, bear direct financial obligations to government in any event. In addition, explicit and implicit contingent liabilities may also arise due to loan guarantees provided to lenders and default of a public or private entity on non-guaranteed loans.

In the PFI model, asset ownership at the end of the contract period may or may not be transferred to the public sector. The PFI model also has many variants.

The annuity model for financing of national highways in India is an example of the PFI model. Under this arrangement a selected private bidder is awarded a contract to develop a section of the highway and to maintain it over the whole contract period. The private bidder is compensated with fixed semi-annual payments for his investments in the project. In this approach the concessionaire does not need to bear the commercial risks involved with project operation. Private infrastructure development in Japan in this region is done mainly via the PFI model.

Apart from building economic infrastructure, the PFI model has been used also for developing social infrastructure such as school and hospital buildings, which do not generate direct “revenues”.  

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16 For example, in the United Kingdom of Great Britain and Northern Ireland and Japan.
This third type of privatization is clear from its very name. In this form a private entity buys an equity stake in a state-owned enterprise. However, the private stake may or may not imply private management of the enterprise. True privatization, however, involves a transfer of deed of title from the public sector to a private undertaking. This may be done either through outright sale or through public floatation of shares of a previously corporatized state enterprise.  

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Basic features
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Full divestiture of existing infrastructure assets is not very common (Agusan and Barit hydroelectric power plants in the Philippines are examples). However, there are many examples of partial divestiture. Such examples include Beijing and Wuhan airports and Shanghai Port Container Co. in China.

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Examples
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Corporate in its statutory role as a governmental department or a quasi-independent entity subject to the conditions of the relevant sectoral Act (such as the Ports or Railways Act) to a fully commercialized but government-owned body under some form of legislation such as a Companies Act. The aim of corporatization is to increase the organizational flexibility and financial viability of the service provided by an entity by giving it an existence that is legally separate from that of government.

As an example, Indian Railways has moved down the path of commercialization and corporatization. A number of public sector undertakings have been formed for this purpose. These include Container Corporation of India Ltd (CONCOR), Kankan Railway Corporation Ltd and Railtel Corporation of India Ltd.
MAJOR ISSUES CONCERNING PPP MODELS...

- A wide spectrum of PPP models has emerged. These models vary by ownership of capital assets, responsibility for investment, assumption of risks and duration of contract. However, there is no single PPP model that can satisfy all conditions concerning a project’s locational setting and its technical and financial features. The most suitable model should be selected taking into account country’s political, legal and socio-cultural circumstances and the financial and technical features of the projects and sectors concerned.

- Clear policy guidelines of government are necessary on type of partnerships for different types of projects. Governments consider different types of PPP models and their general guidelines taking into account the appropriateness of models in a given context. The guidelines in respect of PPP models can be specified in the government’s PPP policy framework or in the country’s legal instruments.

- Recognizing the complexities of some type of PPP models such as the BOT model, attention may be placed on more practical forms of private participation aimed at increasing the efficiency of existing assets through improved operation and modernization. In case of new projects with high commercial risk, models or contractual provisions that allow lesser burden on the private sector is more realistic, particularly in the early years of PPP development in a country.
The government has an important stake in infrastructure development. Considering its public good in nature, strategic importance, profound effects on other sectors, and related issues in public safety and security, and utilization of natural resources, governments always take interest in infrastructure development, whether implemented by the public sector or the private sector. There are also other reasons of government’s interest which include:

- The network nature of most infrastructures implies that they cannot be considered as isolated projects (road, energy transmission line, telephone line, etc.)
- Can be used as a policy tool for development
- Infrastructure is important and needed but individual projects are not always commercially viable (water supply, rural/local roads, for example)
- Bulky nature and large size of investment requirements
- Long to very long existence with perpetual liability through generations (external costs, for example).

However, in this chapter, discussion on government involvement has been made specifically in the context of PPPs and not in relation to many of the reasons mentioned above.

### A. Responsibilities of government in policy area

There are legal, social, economic, political and administrative issues involving PPPs. The government has responsibility in addressing a wide range of issues in PPPs if a country has to run a successful PPP programme. Private participation in infrastructure development requires the government to continue to play a key role in planning, policy formulation and regulatory matters. Further, in order to promote private participation, the government needs to implement a series of economic, financial and legal reforms which only it can initiate. In these respects, the major responsibilities of government are in:

- Formulation of a PPP policy framework
- Creation of an enabling environment
- Establishment of an administrative mechanism
- Promotion of good governance
- Addressing the social and political concern of PPP projects
- Capacity-building of the public sector

These responsibilities are discussed in the following paragraphs.
Policy framework. Formulation of a policy framework is an important step towards building an enabling environment for PPPs. The existence of a clear framework can remove ambiguities and uncertainties about government’s intention to PPP development. Such a framework may have two parts: the first part on common matters to all PPPs such as objectives, principles and general policy issues; and the second part on issues specific to each sector (see section VI C.). Social objectives can be incorporated in the policy framework as well as in legal and regulatory regimes.

The roles of public and private sector should be clearly defined in the framework. Private sector friendly policies can be formulated and their implementation needs to be coordinated across all sectors and at all spatial levels. It is also important to include in the framework (and follow) certain core principles of good governance namely transparency, accountability and participatory approach in decision making to promote PPPs. Formulation of a policy framework is also important in view of the fact that many aspects of it can be turned into legal and regulatory instruments.

Enabling environment. The creation of PPP-enabling environment is one of the main responsibilities of the government. Often, the entire regulatory and legislative frameworks are incomplete, outdated and poorly integrated across sectors. The deficiencies of the regulatory and legislative framework; imperfections in market and sector structure; and prevailing unfavourable general perception and understanding about PPP and absence of clear policies on the role of private and public sectors are the main reasons for the existing environment not being conducive to PPP. In many cases, the existing regulatory environment may also be conservative and too restrictive and may not be favourable for undertaking PPPs. In order to address these issues, governments may consider enacting new legislations or suitably amending the existing ones to address these nagging issues.

More often than not, the existing market and sector structure is not conducive to PPPs. Lack of relevant market regulation leads to monopoly and sector inefficiencies. In fact, sector inefficiencies can be major deterrents to private participation in infrastructure. For example, the existence of barriers such as public monopoly and distortion in the pricing of competing transport modes is a serious problem for the motivation of the private sector to invest in the transport sector in many countries. To address these problems, liberalization of the market and removal of sector inefficiencies can be initiated. In many ways the pricing problem has been viewed as an issue of political economy and may need to be resolved. In some sectors such as transport and water and sanitation, technological changes have been less pronounced and political barriers to reform can be strong. The government has a major responsibility to redress these barriers.

Administrative mechanism. Formulation of rules and clear guidelines defining the administrative process involved in project implementation is necessary to overcome the administrative difficulties faced by the bureaucracy. Establishment of procedures for various tasks and administrative approval from competent authorities at different stages of project implementation process are also necessary in running a successful PPP programme.

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18 See further discussion on this issue in Chapter VI.
Streamlined administrative procedures reduce uncertainties at different stages of project development and approval and enhance investors’ confidence in a PPP programme.

**Good governance.** Promotion of good governance based on certain generally accepted core principles is a major responsibility of the government. These core principles include: accountability, transparency, fairness, efficiency, participation, and decency. Considering these core principles into consideration it can be said that the good governance in PPPs would require the following:

- A fair and transparent rule-based administrative process by which projects are developed and procured by governments;
- Fair incentives to all stakeholders and fair return to all partners taking into account their level of involvement and assumption of risks;
- A widely representative participatory decision-making process that takes into account concerns of all concerned stakeholders including those who may be adversely affected, and an acceptable dispute resolution mechanism that assures continuation of services and prevents the failure of projects;
- An arrangement for project delivery that ensures efficient utilization of human, financial, natural and other resources without sacrificing the need of future generations;
- An arrangement that improves human security and ensures public security and safety, and environmental safety; and
- An arrangement for the improvement of essential public services without harming or causing grievance to people and for which public officials are responsible to society.

**Social and political concerns.** Often, there are concerns if all sections of society can benefit from PPP projects. To address these concerns, policies and regulations guaranteeing equitable distribution of benefits may be considered by the government. Providing support to pro-poor PPP projects can be also considered by the government. Promotion of pro-poor PPP projects through incentives and technical assistance can be a part of the government’s policy framework to address some of the social and political concerns.

There is also a general belief that involvement of the private sector results in higher prices, fewer jobs, and that the profit motivation of the private sector may not be in line with the social objectives of a country. There may also be lack of political will and many governments may not be very supportive of the PPP concept. If PPP programmes in a

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19 Governance has no automatic normative connotation. However, typical criteria for assessing governance in a particular context might include the degree of legitimacy, representativeness, popular accountability and efficiency with which public affairs are conducted.


country are to succeed, these issues need to be addressed by the government. Further discussion on these concerns is presented in Section D of this chapter.

**Capacity-building.** The concept of partnership is not always well understood by the bureaucracy, often because of the lack of capacity and absence of clearly defined rules and regulations. The lack of capacity in the public sector can be a major obstacle in PPP development in many countries. Skills of a diverse nature, from project identification and economic evaluation to financial and risk analysis to contract document preparation to procurement to contract negotiation are required in administering a PPP programme. The government needs to consider suitable capacity-building programmes in developing necessary skills of its officials involved in PPP project development and implementation.

**B. Fiscal liabilities of government in PPP projects**

The government has an important stake in all PPP projects. Besides usual responsibilities concerning regulatory and legal affairs and in policy and administrative matters, the government may have both direct and indirect direct stakes in PPP projects. The government involvement may be through assets ownership, equity participation, subordinate debt financing, risk sharing and provision of various incentives including loan guarantees for sub-sovereign and non-sovereign borrowings. These types of involvements require the government to bear explicit direct and contingent liabilities.

Explicit direct liabilities are those liabilities which are recognized by law or as mentioned in a contract agreement, for example, the fixed periodic payments that are made in a PFI type of project or a grant or an agreed level of subsidy to a project. They arise in any event and are therefore certain. Contingent liabilities on the other hand, are obligations if a particular event such as default of a guaranteed loan occurs, and are therefore uncertain in nature and difficult to predict.

Guarantees are used to pursue policy objectives in support of priority infrastructure projects and governments may provide loan guarantees to cover some or all of the risk of repayment. Guarantees can be extremely valuable in reducing the financing cost of a project. A loan guarantee can substantially reduce the risk of loan default. As a result debt finance may be available at a lower rate of interest. The value of a guarantee depends on the risks of a project, the size of the investment, and the time to maturity. Guarantees, however, may impose cost to the government. Such a cost is not explicit but may be real. Analytical methods have been developed to anticipate fiscal liabilities. Many governments (for example, in Canada) have established procedures for providing loan guarantees, to create reserves and channel funds through transparent means to ensure that costs of guarantees are evident to decision makers from the outset.

The government also bears certain implicit direct and contingent liabilities for PPP projects including for which there may not be any direct financial involvement. Implicit liabilities arise due to public expectations and pressure of interest groups. Implicit direct costs
include any future recurrent costs, such as for infrastructure maintenance. Implicit contingent liabilities include default of a sub-sovereign and public and private entity on non-guaranteed loans and other liabilities such as environmental damage, buyout, bailout, and default of the central bank on its obligations to allow repatriation of capital and profit. The government, therefore, has an inherent stake in all PPP projects.

The direct and contingent liabilities (explicit or implicit) have important implications for fiscal management in government. The underlying fiscal costs of PPPs that may arise in the medium and short term would require provision of substantial public financing in budget. Therefore, there is a necessity to estimate the likely direct and contingent liabilities of PPP projects in future while approvals by government is considered.

C. Assessing the viability of PPP projects

The viability of PPP projects is a key question in the minds of top policy makers. Access to additional resources for the implementation of much needed infrastructure projects remains to be the chief reason behind going for PPPs. As mentioned earlier, the public sector’s other advantages lie in the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation.

However, lack of funding from the traditional sources and relief of the public sector from bearing certain costs, or interest of the private sector should not be the sole criteria in considering implementation of an infrastructure project through the PPP mechanism. There are additional costs of having recourse to the private sector – usually the cost of borrowing money is higher for the private sector than for the public sector and there are administrative costs for the management of PPP contractual regimes. Transaction costs\(^\text{20}\) of PPP projects can also be substantial. It may take a long time to make a PPP project deal, which also has consequences on overall project costs.

Any PPP project should be subject to full social cost-benefit assessment to ensure its public as well as private benefits. Such an analysis can also provide an essential input to the political decision making process which can then become more transparent. The traditional evaluation criteria such as internal rate of return (IRR) and net present value (NPV) may be used to assess the economic justification of a project. A financial assessment with due consideration of the appropriate cost of capital\(^\text{21}\) should be undertaken to ensure

\(^{20}\) See footnote 5 for explanation.
\(^{21}\) See chapter IV for discussion on cost of capital.
commercial viability of a project. Such economic and financial assessments are also undertaken to establish the need (of the project), and to provide the basis for public sector’s participation in financing (through equity participation, loans or incentives with fiscal or financial implications for the government). It is also desirable to consider a social goals achievement matrix to consider separately the likely social and political concerns of a PPP project.

Theoretically, a PPP project is favoured only when its generated benefits exceed the additional costs discussed above. To ensure this, government regulations guiding PPP schemes may establish some value for money or public sector comparator criterion. For example, in the United Kingdom and in the State of Victoria in Australia the net present value of the project as a PPP scheme is compared with its value if implemented by the public sector. A project is implemented through the PPP modality only when it proves to give a superior value for money as a private project compared with its value as a public sector project.

There are, however, many problems in applying the PSC concept ranging from methodological issues to various practical limitations involving the concept. Some of the major problems include lack of consensus on discount rate, high costs of financial modelling, omitted risks, lack of realistic data for meaningful comparison of implementation by the public sector, and non-existence of a public sector alternative. In view of these serious limitations of PSC, it may not be always a feasible proposition to apply the concept in developing countries.

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22 Both the economic and financial analysis of a project uses an identical project format to account for all relevant costs and benefits (or revenues) year by year. One of the major differences between these analyses is in the identification and valuation of the cost and benefit items. While the economic analysis considers all costs and benefits to the economy as a whole valued at their economic prices, the financial analysis considers only those costs and benefits that are internal to the project authority and are valued at their market or accounting prices. Both the analyses apply the discounting technique to find the present values of all future costs and benefits. This is done to reflect the time value of money or resources.

The IRR is the discount rate, which, when applied to the yearly stream of costs and benefits of a project, produces a zero net present value. A project is considered economically viable when its IRR is greater than a pre-determined cut-off rate (which is the opportunity cost of capital for that country).
D. Addressing the social issues

Sustained political commitment and support is vital for a PPP programme. Some of the main social issues that need to be addressed through such commitment and support include:

- Pricing and profit motivation of the private sector
- Inclusion of pro-poor elements
- Resettlement, rehabilitation and compensation
- Information disclosure and public participation

Over the years, many infrastructure services and public utilities, water supply and roads for example, have acquired the perception of a “public good”. As such, the social and political acceptability of PPP projects may be a key issue in many developing societies. The perception of public good has made the tasks of government more crucial as the issues of equity and efficiencies have to be dealt simultaneously in a PPP policy framework. As such,
price setting can be a sensitive issue for many projects. Price setting or any revision of price in later years is an important governance issue. A major responsibility of the government (or the regulator) is not to allow any excessive profit to the private sector. Ideally, the price should be set at a level that allows a fair return on the investment to recover the cost of financing and to meet the contractual obligations.

The issue of subsidy may also come into consideration when the pricing structure of infrastructure services is established. PPP does not mean that there would not be any element of subsidy in pricing. Even when government subsidy is not available, pricing may be based on cross-subsidization between two groups of users of a facility. For example, cross-subsidization of domestic users by industrial and commercial users can be considered while the pricing structure of water from a water project is considered. The government may also consider providing price subsidy to a particular group in society to achieve its broader social and political objectives.

It is important to realize that private participation does not mean that the government loses control over the infrastructure facilities that may have the character of a “public good”. Rather, the government adopts a set of new rules whereby it assumes the role of facilitator and regulator, based on its comparative advantage and ability to apply its leverage to achieve social and political objectives.

Addressing the issue of pro-poor element in PPP projects could be very important, particularly in developing countries. A built-in mechanism can be devised in designing private projects to protect the interests of disadvantaged groups as well as increase the visibility and social acceptability of PPPs. Promotion, regulation and facilitation may be considered as the tactical means to create a conducive environment for pro-poor PPPs. Education and training programmes for both the public and private sector may be organized and demonstration projects may also be considered to create positive impressions of PPPs. Subsidies that are transparent, targeted and non-distorting could be devised. Policies and regulations guaranteeing government support for pro-poor PPP projects can be considered. It is important to follow certain core principles of good governance, namely, transparency and accountability, to promote pro-poor PPPs. Promotion of pro-poor PPP projects through incentives and technical assistance to the private sector can also be a government policy.

Large tracts of land may be required for many infrastructure projects, particularly for projects in the transport, and energy and power sectors. In such cases, resettlement and rehabilitation of the affected people and compensation for the acquired land/property may become major issues in project implementation. The problem may be of serious nature if the government does not have any fair policies and legal measures to deal with these complex social issues which may also have deep financial as well as political implications. In the absence of generally acceptable policies and measures, project implementation may become difficult due to resistance from the affected people and other interested groups. Fair policies on compensation, and resettlement and rehabilitation of the affected people can greatly help in overcoming these issues. Some
governments have formulated clear policies on these matters and those have been applied in recent projects.

One of the core principles of good governance is to facilitate public participation in the decision-making process. Public participation increases the likelihood that actions taken or services provided by public agencies more adequately reflect the needs of people and that the benefits of development are more equitably shared. Equitable sharing of resources and benefits is also an issue of sustainable development. As such, public participation has been recognized as one of the core principles of sustainable development. Here, participation means contributing to development, benefiting from development and taking part in decision-making about development, which could be realized through activities facilitated by authorities. Information disclosure on PPP projects and its dissemination through the media and other means should be enhanced. It helps in better understanding of the project by the general public, can help in removing misgivings, and facilitates public participation. It is important to mention here the public participation is extremely important for social sector infrastructure projects (schools, community/civic facilities, housing, etc.) as well as for many economic infrastructure projects. Many governments have devised an in-built mechanism for public participation at the planning and design stage of a project.

E. Government support for PPPs

The financial viability of PPP projects is of great concern to the government. If a project is not found commercially/financially viable, then its economic evaluation can be reviewed to determine whether the investment is justified from the standpoint of the economy. If a PPP project is not financially viable but found to have high economic internal rate of return (EIRR), various options can be considered for improving the project’s financial rate of return, which may include government intervention of various types and provision of incentives or subsidies. It may be noted here that any significant difference between financial and economic internal rate of returns of a project arises primarily due to existence of a large size of uncaptured external benefits of the project to third parties. Government intervention and provision of incentives for such projects are justified on the ground that they correct market failure in addressing this problem. Social welfare is improved by undertaking such projects with government support.

Without government support, implementation of commercially unviable projects is not possible. Government support may also be crucial in the early years of PPP development in a country or in an untested PPP market. Without sufficient government support, the private sector may not take much interest in such situations.

Many Governments have established policies and formal mechanisms for providing support to such PPP projects under the provisions of their PPP laws (for example in the PPPI Act of the Republic of Korea). The main types of supports and incentives considered by the government include:

- Land acquisition
- Capital grant and other forms of financial support
- Revenue guarantee
Land acquisition. Any delay or problems in land acquisition could be a major source of risk to investors, particularly for road and rail projects and other projects that require large tracts of land. In order to remove the uncertainties in land acquisition, the government may consider the use of public lands for infrastructure projects when such lands are available. If necessary, the government may also acquire the private land for a project on behalf of the investor. In situations where the investor is required to negotiate with the owners for the purchase of land, the government can also assist the investor through its use of the right of eminent domain. The land acquisition issue should be settled before bids are invited.

Capital grant and other forms of financial support. A capital grant, one-time or deferred, may be considered by the government with the objective of making a project commercially viable. The government may also consider other forms of financial support to make projects commercially viable. These may include interest free or low interest loans, subordinated loans, operation and maintenance support grants, and interest subsidies. A mix of capital and revenue support may also be considered.

Revenue guarantee. For high-risk projects, the government may consider to provide revenue guarantees. The government can guarantee up to a certain specified percentage of the projected revenues. Where these guarantees are provided, governments normally also limit the maximum amount of revenues that the project developer can retain. Any amount in excess of this defined maximum limit is taken by the government. Revenue guarantee, however, has a major drawback. When such a guarantee is available debt can be structured around it and may practically mean transferring of commercial risks to the government. In such a case, the private operator may also lose interest in increasing its internal efficiency.

Foreign exchange risk. One of the serious concerns in the minds of investors relates to foreign exchange risk. The revenues generated from the services provided by infrastructure projects are primarily in local currency. But a large part of debt servicing and other payments are often made in a foreign currency. The government may undertake measures to limit the investor’s risk from foreign exchange fluctuations. Where foreign exchange fluctuations exceed a certain defined limit (say, 20 per cent), a part of losses due to such fluctuations may be offset through modifications of tariff rates, government subsidies, adjustment of the concession period or other provisions.

Tax incentives. PPP projects may also qualify for various tax incentives offered by the government. These include:

- Exemption from registration tax on the acquisition of real estate for BOT projects
- Exemption from, or application of a lower rate of value added tax for infrastructure facilities or construction of those facilities supplied to the State or local governments as BTO and BOT projects
- Reduction of or exemption from various appropriation charges
- Recognition of a certain percentage of the investment as a reserve to be treated as an expense for the purpose of computing corporate taxes
• Allowing the project company to issue infrastructure bonds at a concessional tax rate on interest earned

**Protection against reduction of tariffs or shortening of concession period.** Another incentive is protection from a reduction of tariffs or the concession period if the project developer is able to reduce construction costs below those estimated in the agreement. In fact, such a provision provides an incentive for early completion of a project. However, this implies that there would be no adjustment if construction costs exceed the original estimate. This would be a disincentive to delay completion of a project.

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**Box 6. Incentives for private sector participation in the road sector in India**

The Government of India has taken a number of administrative, legal and fiscal measures to promote public-private partnerships in the road sector. The model concession agreement has been made investor friendly through more equitable allocation of risks and provision of incentives in the form of grants and other measures. The main incentives include:

- Government bears expenses for land acquisition and pre-construction activities;
- Foreign direct investment up to 100 per cent;
- Capital subsidy up to 40 per cent to meet the viability of a project;
- Government equity up to 30 per cent;
- 100 per cent tax exemption in any consecutive 10 years;
- Duty-free import of road construction equipment;
- Bond exempted from capital gains tax;
- Tax benefits for property development activities;
- Transparent and well defined procurement procedure;
- Equitable dispute resolution mechanism.


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**Loan guarantee.** A loan guarantee is a guarantee to a lender providing credit to a project company that, if a borrower defaults, the government will repay the amount guaranteed, subject to the terms and conditions of an agreement. Because the guarantee reduces the lender's risk, the borrower should be able to obtain funds at a lower interest rate or negotiate a loan that might not otherwise be obtainable.

As loan guarantees do not involve immediate cash spending by the government, they can be a more attractive tool to the government than direct loans or grants, particularly in periods of fiscal restraint. However, they can generate sizable financial obligations and significantly affect the government's fiscal framework.

**Force majeure.** The government may consider buyout of a project in cases of prolonged force majeure. Government buyouts may also apply in certain extraordinary circumstances as may be provided for in the concession agreement.
The government may also consider direct or indirect equity participation in a project to assure government support for its implementation and operation. Equity participation helps in many ways. It may be a vital source to supplement equity provided by project sponsors, particularly when equity capital from investment funds or other sources are not available. Equity participation helps to achieve a more favourable debt-equity ratio necessary to keep the debt service obligations manageable in the initial years of project operation (see discussions in the next chapter). It may give comfort to debt financiers and consequently the cost of lending could be lower. Equity participation by government is also helpful in securing public support for politically sensitive projects and projects that are of strategic importance.

The main purpose of the supports discussed so far in this section is to make projects commercially viable. However, the government may also consider other forms of supports for PPP projects to attract private investment and enhance investors’ confidence. An important one among such supports is sovereign guarantees. These guarantees include performance guarantees, and guarantees against adverse acts of governments such as acquisition without adequate compensation. The performance guarantees relate to honour of the commitments of the contracting authority, as provided for in the contract agreement, by the government.

F. Competencies of public officials and capacity development

In most developing countries, capacity building in PPPs needs serious attention of their governments and other concerned institutions such as national training institutions. The public officials involved in the development and implementation of PPP projects should have a clear understanding of the whole process and be familiar with the issues in PPPs from different perspectives, the project cycle, and the operating environment. The concerned officials need to have knowledge and skills in many related areas including public policy and planning, project economics, finance, relevant legal framework, and broad technical issues pertinent to PPP development in each sector. Agencies and government departments should have the staff with the necessary in-house skills. The in-house capacity may also require to be complemented by expert skills from outside the agency as and when necessary.

The public officials involved in PPP project teams need to have competencies to structure and evaluate the project considering its financial, legal and technical aspects. The particular areas of expertise that they need to have in the five broad areas of project planning, financial, legal, technical and project management are as follows:

**Project planning expertise**

- Project identification and structuring;
- Economic and financial evaluation;
- Value for money as a PPP project;
- Marketing of the project.
Financial expertise

- Development of a robust business case for the project;
- Identification of the risks, develop an optimum risk-sharing arrangement between the public and private sectors and the financial implications of any such arrangement;
- Structuring e-payment mechanisms considering responsibilities, risks and rewards for both parties – public and private;
- Analysis of the tender proposals received from the bidders. The public officials would require to scrutinise the financial proposals and their implications for the government. Verification of cost analysis and financial models are important tasks.
- Identification of and reviewing the contract clauses that have financial implications for the public sector.

Legal expertise

- Preparation of the tender documents, PPP contract and applicable lease agreements;
- Ascertaining the best possible method of procurement or bidding following the government procurement rules/laws;
- Legal matters involving taxation, property right, building and planning regulations, environmental law, and legal provisions in any other relevant laws (such as bankruptcy law, competition law, etc.) that have implications and need to be considered in tender documents and contract and lease agreements;
- Contract negotiation;
- Legal aspects on renegotiation the contract and other agreements due to unforeseen circumstances.

Technical expertise

The main areas of technical expertise needed include

- Technical and outcome specifications and service standards for the services to be provided;
- Formulation of safety and security standards and their compliance by the private sector;
- Technical evaluation of proposals and bids;
- Assessment of the capacity of private sector bidders to deliver the project and subsequently operate and manage it;
- Quality control during construction, assessment of technical risks and their mitigation measures, and contractor compliance;
- Appropriate performance measures and monitoring systems to determine the performance of the service provider.

It may be mentioned here that for a PPP project, more emphasis should be placed on output/outcome and service standards rather than specifying technical parameters of inputs.
Project management expertise

- Contract management
- Monitoring the quality of service and contractor compliance;
- Performance monitoring
- Partnership relationship management

Capacity building in some of the above-mentioned areas such as economic and financial evaluation, risk assessment, and procurement can be undertaken through conventional training programmes. The government may also consider to developing PPP training programmes for public officials on such topics in collaboration with national training and academic institutions and can offer training programmes through these institutions. There are, however, many special topics in these areas resource materials for which may not be readily available. In addition, public officials also need to be trained on project development and implementation processes for which some countries have already established definite procedures. To solve this problem, many governments have prepared manuals, guidelines and technical notes based on their legal frameworks and administrative procedures for PPPs.23

International agencies can help the countries in developing suitable training materials on selected topics in PPPs. An important aspect of such training programmes could be the study of country specific case studies developed for such purpose. The case studies should consider the details of project development and implementation processes including how the sensitive issues were resolved, and should not be limited to providing typical recorded information.24

There are, however, important areas in capacity-building which can be best handled through learning-by-doing within an operational environment. Some of these areas include preparation of project procurement documents and contract agreements, and contract negotiation with the winning bidder. Following this approach is not a problem for countries that have experience of implementing sufficient number of PPP projects. For countries which do not have such experience, an option could be to request for such assistance under a technical cooperation agreement with another country which has gained such experience.

In most developing countries the existing institutional arrangement for providing training and the mechanism for information dissemination and sharing of experiences on PPPs is not very helpful for the capacity-building of public officials. The establishment of networks of PPP implementation units and agencies, the private sector, and experts and professionals at the national and regional levels may go a long way to solve

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23 Partnership Victoria, the PPP programme managed by the Treasury in the state of Victoria in Australia, is an example. Partnership Victoria has prepared a set of manuals, policy guidelines and technical notes on PPP project development and implementation. These resource materials can be accessed at <http://www.partnerships.vic.gov.au/CA25708500035EB6/0/955FA345963459F9CA25708500097241?Open/>. Other governments such in the United Kingdom and the Netherlands have also prepared similar resource materials to suit their requirements.

24 Case studies by their very nature are usually conducted ex-post. As a result they tend to contain only recorded information such as physical descriptions of the project, budgets and project documents. Much of the information required to document “lessons learnt” is either “not available” or “nobody wants to talk about it”. The case studies that would be required for capacity building purpose should contain these information.
Networking is a useful modality for sharing of project information and project experiences. The network members may like to collaborate with themselves in developing a capacity-building programme to enhance the capacity of national officials. The networks can also play a role in creating awareness of policy-makers and politicians and provide information to the private sector.

### MAJOR ISSUES CONCERNING GOVERNMENT INVOLVEMENT IN PPPs…

- **Formulation of a clear policy framework** is helpful to remove ambiguities and uncertainties about government’s intention to PPP development. Such a framework may have two parts: the first part on common matters to all PPPs such as objectives, principles and general policy issues; and the second part on issues specific to each sector with clear guidelines. The roles of public and private sector should be clearly defined in the framework.

- **Often, the existing market and the sector structure are not conducive to PPPs.** The existence of barriers such as public or private monopoly and distortion in pricing of resources can be a serious problem for the motivation of the private sector to invest in a sector. The government may initiate steps in liberalization of the market and removal of sector inefficiencies to address these problems.

- **Formulation of rules and clear guidelines on the administrative process involved in project implementation** is necessary to overcome the administrative difficulties faced by the bureaucracy. Streamlined administrative procedures reduce uncertainties at different stages of project development and approval and enhance investors’ confidence in a PPP programme.

- **Promotion of good governance** based on certain generally accepted core principles is a major responsibility of the government. A fair and transparent rule-based administrative process by which PPP projects are developed and procured by governments for the improvement of essential public services and which takes into account views of all concerned is a key aspect of good governance.

- **Lack of capacity in the public sector** can be a major obstacle to PPP development in many countries. Skills of a diverse nature, from project identification and economic evaluation to financial and risk analysis to contract document preparation to procurement to contract negotiation are required in administering a PPP programme. Governments need to consider suitable capacity-building programmes for their officials involved in PPP project development and implementation.

- **The government may be involved in a PPP project through assets ownership, equity participation, risk sharing and provision of various incentives including loan guarantees.** These involvements require the government to bear explicit direct and contingent liabilities that have important implications for fiscal management. There is a necessity to estimate the likely direct and contingent liabilities while approvals of PPP projects are considered.
- Lack of funding from the traditional sources or interest of the private sector should not be the sole criteria in considering project implementation through the PPP modality. There are additional costs of having recourse to the private sector. A project should be considered for implementation through the PPP modality only when it proves to give a superior value for money as a PPP project compared with its value as a public sector project.

- The social and political acceptability of PPP projects is a key issue in many developing societies. In this respect, addressing the issue of pro-poor element in PPP projects could be very important. A built-in mechanism can be devised in designing PPP projects to protect the interests of the disadvantaged groups as well as increase the visibility and social acceptability of PPPs.

- Government intervention and provision of incentives for many PPP projects are justified on the ground that they correct market failure in addressing the problem of externalities. Governments may consider policies and establish formal mechanisms for providing support to such PPP projects as is done in many countries. These supports may come in various forms from equity participation to capital grants, loan guarantee and other types of guarantees, subsidies, and other measures to mitigate various risks and delays.

- Governments may consider to developing PPP training programmes for their public officials in collaboration with national training and academic institutions. International agencies can also help countries in this respect, particularly through development of training materials and sharing of international experiences. A useful modality for sharing of project information and project experiences is through formation of PPP networks of implementation units and agencies and education and training institutions.
IV

FINANCING OF PPP PROJECTS

PPPs in infrastructure are normally financed on project basis (as opposed to corporate financing). This refers to financing in which lenders look to the cash flows of an investment for repayment, without recourse to either equity sponsors or the public sector to make up any shortfall. This arrangement has several advantages: reduces the financial risk of investors; may allow more debt in the financing structure; more careful project scrutiny, risk analysis leading to change in project structure, reduction in level of risk and more appropriate allocation of risks between parties.

However, project financing also has many disadvantages which include: more complex transactions than corporate or public financing; higher transaction costs (the due diligence process conducted by parties results in higher development costs, which could be up to 5-10 per cent of project value); protracted negotiation between parties; requirement of close monitoring and regulatory oversight (particularly for the potential expostulate guarantees).

Sources of project finance

The project finance may come from a variety of sources. The main sources include equity, debt and government grants. Financing from these alternative sources have important implications on project’s overall cost, cash flow, ultimate liability and claims to project incomes and assets.

Equity refers to capital invested by sponsor(s) of the PPP project and others. The main providers of equity are project sponsors, government, third party private investors, and internally generated cash. The commitment of equity for project finance comes with a designated rate of return target, which is higher than the rate of borrowed capital as debt. This is to compensate the higher risks taken by equity investors as they have junior claim to income and assets of the project.

Debt refers to borrowed capital from banks and other financial institutions. It has fixed maturity and a fixed rate of interest is paid on the principal. Lenders of debt capital have senior claim on income and

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25 See footnote 5 for the definition of transaction cost.
assets of the project. Generally, debt finance makes up the major share of investment needs (usually about 70 to 90 per cent) in PPP projects. The common forms of debt are:

- Commercial loan
- Bridge finance
- Bonds and other debt instruments (for borrowing from the capital market)
- Subordinate loans

Commercial loans are funds lent by commercial banks and other financial institutions. Bridge financing is a short-term financing arrangement (say for the construction period or for an initial period) which is generally used until a long-term financing arrangement can be implemented. Bonds are long-term interest bearing debt instruments purchased either through the capital markets or through private placement (which means direct sale to the purchaser, generally an institutional investor – see below). Subordinate loans are similar to commercial loans but they are secondary or subordinate to commercial loans in their claim on income and assets of the project.

The other sources of project finance include grants from various sources, supplier’s credit, etc. Government grants can be made available to make PPP projects commercially viable, reduce the financial risks of private investors, and achieve some socially desirable objectives such as to induce growth in a backward area. Many Governments have established formal mechanisms for the award of grants to PPP projects.\(^{26}\) Where grants are available, depending on government policy they may cover 10 to 40 per cent of the total project investment.

**Providers of finance**

The main providers of finance for the PPP project are:

- Equity investment from project promoters and individual investors
- National and foreign commercial banks and financial institutions
- Institutional investors
- Capital market
- International financial institutions

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\(^{26}\) The viability gap funding scheme of the Government of India is an example of an institutional mechanism for providing financial support to public-private partnerships in infrastructure. A grant, one-time or deferred, is provided under this scheme with the objective of making projects commercially viable. The viability gap funding can take various forms including capital grants, subordinated loans, operation and maintenance support grants, and interest subsidies. A mix of capital and revenue support may also be considered.

A special cell within the Ministry of Finance manages the special fund, which receives annual budget allocations from the Government. Implementing agencies can request funding support from the fund according to some established criteria. In case of projects being implemented at the state level, matching grants are expected from the state government.
Loans provided by national and foreign commercial banks and other financial institutions generally form the major part of the debt capital for infrastructure projects. The rate of interest could be either fixed or floating and normally loans are provided for a term shorter than the project period. Often two or more banks and financial institutions participate in making a loan to a borrower known as syndicated loan. Refinancing of the loan is required when the loans are provided for a maturity period shorter than the project period.

The capital market can be a major source of funding. Funds may be raised as both equity and debt from the capital market by placement of shares, bonds and other negotiable instruments on a recognized domestic or foreign stock exchange. Generally, the public offering of these instruments requires regulatory approval and compliance with requirements of the concerned stock exchange. For example, companies must have three profitable years of operation before they can be listed on the Shenzhen and Shanghai exchanges. Securitization of existing assets is another relatively new mechanism in Asia which has been undertaken in China. Securitization is undertaken once the project is operating, after certain project risks such as construction delays, cost overruns and other initial risks have been mitigated.

Institutional investors such as investment funds, insurance companies, mutual funds, pension funds normally have large sums available for long-term investment and may represent an important source of funding for infrastructure projects. Generally the institutional investors provide loans as subordinated debt.

International and regional financial institutions such as the World Bank, Asian Development Bank, the European Investment Bank, the Agence Francaise de Development and Islamic Development Bank can provide loans, guarantees or equity to privately financed infrastructure projects.

When investors and financiers consider financing a project, they carry out extensive due diligence works in technical, financial, legal and other aspects of the PPP deal. This due diligence is intended to ensure that the project company’s (or SPV’s) business plan is robust and the company has the capacity to deliver on the PPP contract.

The financing arrangement for a large project can be quite complex. For such a project the required finance normally comes from a large number of providers as can be seen from an example in figure 9.
FINANCING ARRANGEMENT FOR A 1070 MW HYDRO ELECTRIC POWER PROJECT
IN LAO PEOPLE’S DEMOCRATIC REPUBLIC

Basic Information: Total cost $1.25 billion; Debt-equity ratio: 72:28
Financing: 50% in Thai Baht and 50% in US Dollar

Notes: ADB = Asian Development Bank; AFD = Agence Française de Développement; Coface = Compagnie Française d’Assurance pour le Commerce Extérieur; EDFI = European Development Finance Institutions; EGCO = Electricity Generating Public Company Ltd.; EIB = European Investment Bank; IDA = International Development Association; ITD = Italian-Thai Development PCL.; MIGA = Multilateral Investment Guarantee Agency; NIB = Nordic Investment Bank; Proparco = Société de Promotion et de Participation pour la Coopération Economique.

Figure 9. Financing arrangement for a large project

Source: Presentation made by the Asian Development Bank at a seminar organized by the Asian Development Bank Institute on 19-22 November 2007, Tokyo, Japan, and on information from other sources.

Financial structure

Careful analysis of alternative financial structures is required to establish the right financing structure for a project. As the expected return on equity is higher than return on debt, the relative shares of debt and equity in the total financing package have important implications for cash flow of the project. Their relative share is also important for taxation purpose (generally the higher the debt the lower is the tax on return). Higher proportion of debt, however, requires larger cash flow for debt servicing, which could be problematic, particularly in the early years of project operation when the revenue earnings are generally low. This is a typical situation faced by transport and water sector projects. In such a possibility, the risk of default would be considered high.
Cost of capital

The cost of capital for a project is a weighted sum of the cost of debt and the cost of equity. Risk is an important element which is factored in to determine the cost of debt and equity.\textsuperscript{27} Lenders determine risk premiums to take into account the assessed levels of risks from various sources (see chapter VI) and are added to risk-free rate of borrowing to determine the required return on debt finance. The risk-free rate of borrowing is practically the rate at which government can borrow money from the market.

Similarly, the cost of equity is defined as the risk-weighted projected return required by investors. However, unlike debt, equity does not pay a set return to its investors. The cost of equity is therefore established by comparing the investment to other investments with similar risk profiles.\textsuperscript{28}

Once these rates of return on debt and equity are established, the cost of capital can be determined as follows:

\[
\text{Cost of capital} = \text{Return on debt} \times \% \text{ of debt} + \text{Return on equity} \times \% \text{ of equity}
\]

A higher proportion of debt would therefore mean higher rate of interest to off-set the higher risk of loan default. This in turn can make the project more expensive compared with a lower debt/equity ratio. As higher debt/equity ratio transfers a large part of the commercial risk to lenders, the project operator may also lose incentives to improve economic performance of the project.

The cost of capital of may be lowered through refinancing of PPP projects after their construction phase. Sponsors may be required to provide a significant amount of equity capital at the beginning of a project during the construction phase when the risk is high. Once the construction is complete, the construction risks associated with it have been overcome, and the cash flow begins to materialize, the expensive equity or debt capital can be refinanced using cheaper debt capital thus lowering the total cost of capital.

The relationship between risk and return of a project changes over different phases. The highest level of risk exists during the construction phase of a project when construction delays and cost overruns can have serious consequences to a project’s success. It is

\textsuperscript{27} The cost of capital is often used as the discount rate, the rate at which projected cash flow is discounted to find the present value or net present value of a project.

\textsuperscript{28} There are methodologies to establish the expected rates of return on debt and equity. For example, the capital assets pricing model or CAPM is used to determine the expected return on equity for a particular type of asset. Governments (through the Treasury or Ministry of Finance) may also establish the expected rates of return considering alternative investment opportunities and the level of risks involved in different types of infrastructure projects in their countries.
during this phase that investors require the highest return on their capital to compensate for the risk, thus the higher cost of capital. Once construction is over and the cash flow from operations has begun, project risks drop off substantially and it is possible for sponsors to refinance at a lower cost.

**Cash flow analysis**

It is important to analyze a project’s cash flow as available cash is used to service any debt obligations. The analysis is done through the development of a cash flow model. Once the financial model for a project is developed, the implications of alternative financial structures and effects of changes in other parameter values on cash flow can be analyzed. Figure 10 shows a typical cash flow situation. The following are the critical components of a cash flow model:

- Capital investment
- Financial structure
- Terminal cash flow
- Discount rate
- Assumptions on parameter values

The capital investment is the cost of developing a project, regardless of funding sources. Typical components of capital investment cost are: land and site development costs, buildings and all civil works, plant and machinery, and technical, engineering and other professional service fees.

![Project Cash Flow](image)

**Figure 10. Typical project cash flow situation**
Alternative financial structures are considered to calculate the average cost of capital. Once the cost of capital is known, cash flows can be calculated for the following situations:

- i) after meeting the operating expenses
- ii) after paying interest and keeping provisions for depreciation but before paying tax
- iii) after payment of tax, and
- iv) net flow.

**Box 7: How subordinate debt helps in debt financing**

The revenue available for debt service is used first to meet the senior claims. If revenue is still available it is then used to meet the junior claims (subordinate debt and thereafter equity). A simplified example below shows how it works in reducing the burden of debt on a project.

<table>
<thead>
<tr>
<th>Amount</th>
<th>Coverage Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue: $1,050</td>
<td></td>
</tr>
<tr>
<td>Senior claims: $700</td>
<td>1,050/700 = 1.50</td>
</tr>
<tr>
<td>Junior claims: $200</td>
<td>1,050/(700+200) =1.17</td>
</tr>
</tbody>
</table>

On a combined claim (if the whole amount of loan was of the same type, i.e. senior debt), the coverage ratio is 1.17, which in most circumstances would be considered low and not qualify for cheaper credits. The coverage ratio, however, is significantly improved if the debt is divided into two parts: a senior debt and a subordinate debt. As the senior debt is only a portion of the total debt and has the first claim on all the revenues available for debt service, its coverage is increased to 1.5 and its credit quality would be enhanced. The credit quality is very important to debt financing. With a good credit rating the project may also be bond financed. As the cost of bond financing is generally lower than commercial borrowing from banks and financial institutions, bond financing can significantly enhance the financial viability of a project.

The availability of subordinate debt helps in reducing the risk to senior debt lenders and allows the project sponsor to borrow at lower interest rates. The subordinate debt provider, however, absorbs a share of the risk if revenues fall short of debt service requirements.

Because of this feature of subordinate debt in reducing the monetary cost of debt, some governments provide loans to implementing agencies (under public credit assistance programmes) to improve the credit quality of senior debt. It lowers the risk to lenders and helps the implementing agency to obtain loans at a lower interest rate reducing the debt burden on the project.

The terminal cash flow is the cash that is generated from the sale or transfer of assets upon termination or liquidation of the PPP contract tenure. In the case of a PPP project, the residual or transfer price is generally negotiated and included in the contract agreement.

The discount rate is the rate that is used to calculate the present value of future cash flows. It is often the weighted average cost of capital for the project from different sources.

In order to calculate the future cash flows it is also necessary to make assumptions of important parameter values over the project’s life. The main parameters for which values need to be assumed include: interest and inflation rates, pricing mechanism, demand for the goods and services produced by the project, construction time, debt repayment method, depreciation schedule, tax structure, and physical and technological life of assets.

**Financial indicators**

A number of financial indicators are used to assess the financial viability of a project as well as alternative financial structure for its implementation. Some of the main indicators include:

- Return on Equity (ROE)
- Annual Debt Service Coverage Ratio (ADSCR)
- Project Life Coverage Ratio
- Payback period
- Net Present Value (NPV)
- Financial Internal Rate of Return (FIRR)

**Return on Equity.** The net income earned on an equity investment. It measures the investment return on the capital invested by shareholders and should not be less than the expected return on equity.

**Annual Debt Service Coverage Ratio.** It is a measure that calculates the cash flow for a period in relation to the amount of loan interest and principal payable for that same period. The ratio should be (at the minimum) equal to or greater than 1 as that demonstrates that the project is earning enough income to meet its debt obligations. It is an important criterion used by financiers to monitor financial performance of a project.

**Project Life Coverage Ratio.** It is also similar to debt service coverage ratio but considers debt service coverage on a given date based on future cash flows from that date until the end of the project life. This ratio enables lenders to assess whether or not there would be sufficient cash flow to be able to service the debt in the event that the debt needs to be restructured.

**Payback period.** The length of time needed to recover initial investment on a project. It may be determined using either discounted cash flow or non-discounted cash flow.
Net Present Value. It is the sum of the present value of all future cash flows. The present value refers to discounted value\(^{29}\) of cash flows at future dates. A project is considered for investment if its NPV is positive.

Internal Rate of Return. It is the discount rate at which the net present value of the cash flow of a project is zero. The IRR may be calculated based on either economic, or financial (ie, market) prices of all costs and revenues (or benefits). If the financial IRR is less than the cost of capital, it implies that the project would lose money. If the economic IRR is less than the opportunity cost of capital (ie, a predetermined cut-off rate of investment), the project is not considered economic from the point of view of economy.

The special nature of infrastructure financing need

Infrastructure financing needs investments over a much longer period than for commercial loans. However, typical commercials lenders find it difficult for them to investment for long periods, say 20-30 years. Capital market is one of the sources most suitable to meet the long-term invest needs of the infrastructure sector (for the supply of both equity and debt). A successful capital market is very helpful for a thriving PPP programme in a country.

Many countries have established special financing institutions to meet the long-term debt financing needs for their infrastructure sectors. Public-private partnership projects awarded to private companies for development, financing and construction receive priority for financing from such institutions. Another important role such financing institutions playing is the refinancing of those private sector projects initially financed by banks, which find long-term financing for infrastructure projects difficult. See box 8 for examples of such institutions established in India.

It may be mentioned here that in countries with large PPP programmes, unlike in the past, domestic financing has become more common than foreign investment. This trend is expected to continue in the future. This has made establishment of special infrastructure financing institutions, and development of domestic capital market and innovative financial instruments more important. One major advantage of domestic financing is that it reduces the risks due to fluctuation of the local currency. It also reduces country’s obligation to allow repatriation of capital and profit.

Compensation to project sponsor/developer

There are five main ways to compensate a private investor of a PPP project:

- Direct charging of users
- Indirect charging of (third party) beneficiaries

\(^{29}\) It is a method of measuring the return on investment which takes into account the time value of money. If alternative investment opportunities exist, money can be shown to have a time value because, for example, US$ 100 today invested at 10 per cent will yield US$ 110 in one year's time. Conversely, US$ 110 to be received in one year would be worth $100 now. The technique used to calculate the present value of a known future worth at a given discount rate is called discounting. It is the reverse of compounding which calculates the future value of a present investment at a given interest rate.
• Cross-subsidization between project components
• Payment by the Government (periodic fixed amount or according to use of the facility, product or service)
• Grants and subsidies (already discussed in a separate section)

Direct charging of users by the private investor is most common for economic infrastructures such as power, telecommunication, water, and transport, particularly for port, airport and railway projects. In case of road projects however, compensation may be made either through direct charging of users or payment by the government. Direct charging of road users may not always be possible because of social and political reasons. In such a situation, the government pays the operator on behalf of the road users.

Box 8: Special infrastructure-financing institutions

India has established special institutions that mobilize funds from domestic and international capital markets for the financing of infrastructure projects. The Infrastructure Development Finance Corporation (IDFC) established in 1997 with the participation of the Government of India, the World Bank, KfW, IPEX-Bank and several commercial banks in India, provides long-term loans and guarantees for public and private sector infrastructure projects. IDFC provided a total of US$ 1.3 billion in loans in 2005.

In a separate initiative, in January 2006 the Government of India established a wholly Government-owned company called the India Infrastructure Finance Company Limited (IIFCL). It has authorized capital of Rs 10 billion. In addition to this capital, IIFCL will be funded through longterm debt from the open market. The Government plans to extend guarantees for repayment of the principal and interest of this debt. One of the expected roles of IIFCL is the refinancing of those private sector projects initially financed by banks, which find long-term financing for infrastructure projects difficult. Public-private partnership projects awarded to private companies for development, financing and construction will receive overriding priority for financing from IIFCL.

Special financing institutions have been established also in many other countries.

Systems for collecting payment from the indirect beneficiaries of transport projects can constitute a major source of funding. Such systems, which include a capital gains tax in the form of certain land-related taxes and fees imposed on property owners and developers, are used, for example, in China; Hong Kong, China; and Japan as well as in the United States of America to capture a part of the development gains generated by new transport projects. However, in most countries such payment systems either do not exist or have very limited applications. Japan and the Republic of Korea have used the land readjustment tool\(^{30}\) for the financing of urban infrastructure projects.

PPPs can be designed based on cross-subsidization between project components, when excess revenues generated from one component can be used to compensate the shortfall in another component in order to make the whole project commercially self-sustainable. The rail-property development model used in Hong, China is a good example of such an arrangement. In this model, part of the profit made from real estate development on lands at or close to station areas, and along the right-of-way of rail transit routes is used to partly finance the rail system. A differential pricing policy with the objective of cross-subsidization may be adopted in an urban utility service project. For example, the industrial and commercial users of a water and sanitation project in Tirupur, South India pay a higher price for water to subsidise the residential users who are charged much lower than the actual cost of water.

The government can make payments of periodic fixed amount or according to use of the facility, product or service at a predetermined agreed price. This type of arrangement is common for social infrastructures such as school, hospital and other public buildings. Shadow tolling of roads is another example. Shadow tolls are payments made by government to the private sector operator of a road, at least in part, based on the number of vehicles using the road. Shadow tolling is practiced in the U.K. However, in stead of shadow pricing, the government may also make payments of periodic fixed amount, as the National Highway Authority (NHAI) in India pays for their PPP projects implemented under the “annuity model”.

Grants and subsidies by the government, if available, can be used to finance in part. Such grants and subsidies can be justified on the following grounds:

- To meet public service obligations (PSOs)
- To achieve social objectives (for example, to ensure no body is priced out in a water project)

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\(^{30}\) Land readjustment is a comprehensive technique for urban area development that provides network infrastructure and other utility facilities and amenities in an integrated manner together with serviced building plots. This approach is also known as land pooling or reconstitution of plots. It may be undertaken by a group of landowners or by a public authority. In this method all the parcels of land in an area are readjusted in a way that each land owner gives up an amount of land in proportion to the benefits received from the infrastructure which is determined on the basis of the size and location of each site. The provision of public facilities enhances the land value and a sound urban area is created. The land contributed by the landowners is used to provide community facilities and amenities and can also be sold or leased out to meet the project costs including those for the infrastructure.
• To rectify market imperfections (that create externalities)
• To make economically viable and socially desirable projects commercially viable

The size of government support should depend on what extent a particular project may qualify for such grants and subsidies considering such grounds.

### MAJOR ISSUES CONCERNING FINANCING OF PPPs...

- There is a huge gap between needs and available funding for investment in the infrastructure sector. The existing financing mechanisms may not be sufficient to serve the special needs of investment in infrastructure. Governments need to consider additional financing mechanisms and instruments to meet the investment needs of infrastructure projects through PPPs.

- Domestic financing has become more common in many countries. This trend is expected to continue in the future. The establishment of special financing institutions, development of domestic capital market and innovative financing instruments are required in order to have domestic financing a greater role in financing of PPP projects. One major advantage of domestic financing is that it reduces the risks due to fluctuation of the local currency. It also reduces country’s obligation to allow repatriation of capital and profit.

- Governments may also consider other appropriate measures to reduce the financing costs of PPP projects.

- PPPs can be designed based on cross-subsidization between project components, when excess revenues generated from one component can be used to compensate the shortfall in another component. There are good working models in the region that apply this concept.

- A differential pricing policy with the objective of cross-subsidization may be also adopted for some PPP projects for making them commercially viable as well as to make them socially and politically more acceptable.
REGULATORY GOVERNANCE

There is a need to regulate a service provider to ensure that services provided reflect the adequate level and meets the desired standard or quality. Regulatory control is also needed to ensure sustainable development in a sector. There are three main requirements that any sustainable development must satisfy. First, it must be economically and financially sustainable to ensure that a continuing capability exists to produce and deliver goods and services. Second, it must be environmentally and ecologically sustainable to ensure an overall improvement in the general quality of life, and not merely results in an increase in traded goods and services. Third, it must be socially sustainable so that the goods and services can be equitably shared by all sections of society.

Functions of a regulator

Several risks are involved in the absence of a regulatory system. The main risks are:

- Excessive tariff
- Inadequate service level and quality
- Non compliance of contractual obligations to users, government or other parties
- Low efficiency in production and in the provision of goods and services
- Inadequate level of investment in the sector
- Frequent discontent between the parties involved

In order to eliminate or minimise these risks, a regulatory system needs to be in place. The regulatory system consists of a set of legal instruments and rules (laws, contract agreements, statutory rules framed by the government, etc.); procedures and processes (for obtaining required approvals, licences and permits, etc.); and regulatory authorities (ministry, regulatory agency, judiciary, competition commission, etc.) with the delegated power.

The actual functions of individual regulatory authorities in a country would depend on the overall structure of the regulatory regime, empowerment of authorities as provided in the relevant legal instruments and rules, administrative arrangements and autonomy, and technical capacity. However, some of the essential functions of regulators include:

- Protection of public interest
- Monitoring compliance with contractual obligations to the government and users, and other legal and regulatory requirements
- Establishing technical, safety and quality standards (if not defined in the contract agreements) and monitoring their compliance
- Imposing penalties for non compliance
- Administering tariff adjustments and periodic reviews
- Establishing accounting standards and undertaking operator’s cost and performance analysis
- Facilitating dispute resolution between parties
- Providing advice and counsel to government on policy matters and other related matters to private sector involvement in the sector

**Regulatory powers and tools**

The contents of delegated powers to regulators are provided in relevant legal instruments, statutory rules, concession/contract agreements, and other applicable documents. Laws, rules and agreements may delegate to regulators the management of those service, cost, price and other parameters that directly affect returns to investments or the cost of capital, affect public interest, and ensure technical and economic efficiency in utilization of the finite natural resources (such as land, water or the radio frequency spectrum). One common parameter is the management of tariff setting and tariff readjustment, even though such management should be done according to guidelines provided by the policy framework of the government, sector laws or concession contracts. The management of technical standards and quality norms also may be delegated because they normally affect operational costs and consumer interest.

Other matters that may also be delegated include, compliance with service and other obligations, market entry of new operators, competition between service providers, control of monopolistic behaviour, disclosure of information, and settlement of certain type of disputes with other service providers (for example, access to/from other networks and fees for such access), consumers and third parties.

The regulatory actions have impact on the regulated industry/project in terms of:

- Price of infrastructure service
- Quantity and quality of service (physical attributes of service, safety and security, environmental standard)
- Level of investment, choice of technology and innovation
- Performance of the operator (service coverage by population segment and geographical area)
- Public service obligation
- Entry to and exit from the market

Regulators apply a variety of tools to discharge their empowered functions. Some of the potential tools that the regulators may have at their disposal include:

- Sector PPP policy framework (many aspects of which can be turned into regulatory instruments)
- Legal instruments (sector and regulatory laws) as applicable
- Concession period and its linkage to rate of return
- Financial modelling of regulatory policy
- Tariff rate level, structure, formula, revision and adjustment mechanisms
- Accounting standards on regulated firms (vital for tariff adjustment)
- Fiscal instruments (government subsidy or other incentives or services in kind)
• Payments to government/regulator
• Penalties and fines for non-compliance with regulatory decisions
• Investment level and its timing
• Technical efficiency and quality standards of service including those related to effective management and operation of the facility over time (for example, response time to user complaints, accuracy of billing and timely mobilization of funds for investments)
• Depreciation and amortization rules (tax and accounting policy issues), to the extent within the control of the regulator.
• Rules related to transfer of assets at the end of contract tenure for which investments have not been fully amortized (otherwise, investment in the later years of concession period would be discouraged)

The PPP programme performance in terms of size of investment, innovation, and price and quality of service largely depend on the effectiveness of regulatory governance. As such, the regulatory process is an important element for the success of an effective PPP programme in a country. Figure 11 shows the elements of regulatory governance within the regulatory process and how regulatory governance is related to the broader institutional structure and to the regulatory tools.

**The structure of regulatory authority**

The overall structure of the regulatory authority varies from one country to another and also by sector within a country. There can also be various arrangements with respect to institutions entrusted with regulatory responsibilities that may include: the concerned ministry, a special cell within the ministry, a regulator with limited power, and an independent regulator with decision making power. Often, countries rely mainly on regulation by contract, particularly in the early years of PPP development. This is a common form of regulatory arrangement in the roads sector. In such a case, a contract administrator monitors compliance with the contract agreement.

However, in view of the special characteristics of some sectors such as energy and communications, an empowered independent regulator would be better suited to deal with the complex regulatory issues. Such independent regulators are becoming more common in the water sector also. Many countries in the Asia-Pacific region have now established independent regulators for their energy, telecommunication and water sectors. For example, independent regulators have been established in the telecommunication sector in Bangladesh, Hong Kong, China, the Philippines, India, Thailand; in the energy sector in Australia, Bangladesh, India, Thailand; in the water sector in India (states of Andhra, Gujarat, Tamil Nadu) and the Philippines.

The stability of rules and credibility of the government is a key issue in PPP development. The establishment of an independent regulator can ensure such stability of rules and credibility of government. Investments in infrastructure facilities have a high political content as they have strategic importance, involve large numbers of consumers and as such facilities have certain service obligations to consumers. Based on political considerations, governments may often change the rules of operation in the industry after investments are
made. They may also impose extra costs on project companies, or impose additional obligations that have substantial resource costs. As most infrastructure assets cannot be easily transferred to alternative activities (in other words, has a high degree of specificity), investors are compelled to adjust to such changed situation, which may affect their business model and results into lower returns to their investment.

Figure 11. Regulatory governance in PPPs


When regulatory risks are considered high, private investors are discouraged from investing in new infrastructure facilities, or they delay modernization of existing facilities. In a situation of high risks if investment decisions are made at all, investors attach a high risk premium, which in turn results in high prices of the services. The establishment of independent regulators is a solution to these problems. By delegating powers to independent regulators, the government can assure private investors that it would not be able to arbitrarily change any rules or intervene in the market after investments are made. The
stability of rules and credibility of the regulators are the main characteristics of an independent regulatory environment.

MAJOR ISSUES CONCERNING REGULATORY GOVERNANCE...

- There is a need to regulate a service provider to ensure that services provided reflect the adequate level and meets the desired standard or quality. Regulatory control is also needed to ensure sustainable development in an infrastructure sector.

- The PPP programme performance in terms of size of investment, innovation, and price and quality of service largely depend on the effectiveness of regulatory governance, particularly those related to economic matters.

- Often the rules of operation in the industry are changed by the government after investments are made. Faced with this kind of regulatory risks, firms are discouraged from investing in infrastructure projects. The stability of regulatory rules is a major concern in PPP development.

- The establishment of independent regulators and delegating authority to them can be helpful to ensuring stability of regulatory rules. By delegating powers to independent regulatory agencies, the government assures private investors that it would not be able to arbitrarily change any rules or intervene in the market after investments are made.

- The stability of rules and credibility of the regulators are the main characteristics of an independent regulatory environment. The existence of autonomous independent regulators with the required authority and technical capacity can have a strong positive influence on PPP development.
VI

SOME MAJOR ISSUES IN PPP DEVELOPMENT

A. Risk sharing and management

Risk is inherent in all PPP projects as in any other infrastructure projects. The main types of risks include:

- Construction risk (mainly delays in construction)
- Technology risk (arises when the technology is not a proven one)
- Sponsor risk (ability of the sponsor to deliver the project)
- Environmental risk
- Commercial risk (lower than expected demand for services produced by the project)
- Operating risk (inefficiency in operation leading to higher operating cost)
- Legal risk (change in law)
- Regulatory risk (change in regulatory regimes)
- Political risk (change in government policy)
- Force majeure (risks due to unpredictable natural and man-made events such as earthquake, flood, civil war, etc.)

An important aspect of PPPs is an explicit arrangement for sharing of risks between parties involved. Many different techniques ranging from rule of thumb (based on past experiences) to sophisticated simulation models are available for the assessment of different risks in a project. A risk matrix is developed after assessing risks in quantitative and/or qualitative terms for all possible risk factors. PPP contracts often include incentives that reward private partners for mitigating risk factors. An example of a risk matrix has been in Appendix 2. Though it is set up from the perspective of the government, it provides an example of how risks can be identified, assessed, and mitigated.

The risk matrix identifies the risks, their magnitudes and possible mitigation measures and serves as a useful tool for the purpose of sharing risks between the parties. The general principle is that project risks are allocated to the party that is the best equipped to

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31 General purpose and special purpose softwares are available for risk assessment of infrastructure projects. *Inforisk* is a special purpose software developed by the World Bank. There are also many general purpose softwares commercially available.

32 Reproduced with permission from the State of Victoria in Australia
manage them most cost effectively. For example, political and regulatory risks are more appropriate to the public sector while construction and operating risks are more suited to the private sector. The allocation of commercial risks is generally more common to the private sector. However, in certain cases, a part of the commercial risks due to lower than expected demand for services produced by the project may be shared by the public sector. In such cases normally a provision is also set to share any excess revenue if the demand exceeds the expected level. Table 3 provides an example of an arrangement for sharing of various risks.

### Table 3. A hypothetical risk allocation table

<table>
<thead>
<tr>
<th>Risk</th>
<th>Contractor</th>
<th>Operator</th>
<th>Equity</th>
<th>Lenders</th>
<th>Government</th>
<th>Insurance</th>
<th>Unallocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Construction overruns/delays</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Change in legal regimes</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Land acquisition</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Approvals/licences/permits</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Variations</td>
<td>*</td>
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It is important to note that risk transfer is a key element in effective PPP design. If a good balance in sharing risk is not achieved, it will result in increased costs and the inability of one or both parties to fully realize their potential. The magnitude of project risks are also
assessed as a part of the due diligence process undertaken by lenders. The higher the assessed/perceived risks of a project, lenders would charge a higher risk premium for lending money. Consequently, the financing cost of project becomes higher. This means, holding project capital and operating cost constant, the same project in a country with higher risk perceptions would require a higher tariff than in countries with lower risk perceptions.

The government can provide loan guarantees (partial or full) for a project to help reducing its risk level and thereby financing costs. This is also helpful to make a project commercially viable. If such a guarantee is available, investments risks can be assessed at the zero or no risk level (compared with sovereign borrowings). However, such guarantees expose the government to potential liabilities in the event of a loan default and as such have implications for fiscal discipline (see Chapter III). Further, full guarantee by government reduces the incentives for the private operator to manage the project risks.

Multi-lateral agencies such as the Multilateral Investment Guarantee Agency or MIGA of the World Bank Group provide loan guarantee of developing country private sector projects. MIGA provides guarantee against foreign currency transfer restrictions, expropriation, breach of contract, war and civil disturbance. The Asian Development Bank has also a similar mechanism for providing loan guarantee to private projects.

Some countries have their own mechanism for providing loan guarantee.

In the Philippines, for example, there is a national agency that provides loan guarantee for projects undertaken by local government units (LGUs).

**B. Unsolicited projects**

Normally, the government invites proposals for projects which it wants to implement through the PPP modality. Proposals submitted by private parties in response to such a request are called solicited proposals. Sometimes, private parties may also submit proposals without any request from the government for such proposals. These proposals are called unsolicited project proposals. Unsolicited PPP projects have been implemented in many countries but some countries do not entertain such proposals because of the problems associated with unsolicited proposals, especially the risks they raise for competition and transparency.

There are some merits in keeping provisions for considering unsolicited project proposals. Often, such proposals are based on innovative project ideas. The difficulty with unsolicited proposals however, rests in getting the right balance between encouraging private companies to submit innovative project ideas without losing the transparency and efficiency gains of a competitive tender process.

Considering the merits of unsolicited proposals that they may often have, some governments have developed systems to transform unsolicited proposals for private
infrastructure projects into competitively tendered projects. Such systems are in place in countries such as Chile, the Republic of Korea, the Philippines and South Africa.

There are two main approaches that have been developed to deal with unsolicited proposals. These are:

- In a formal bidding process, a predetermined bonus point is awarded to the original proponent of the project. Chile and the Republic of Korea have such a system.
- The Swiss challenge system in which other parties are invited to make better offers than the original proponent within a specified time period. If a better offer is received, the original proponent has the right to counter match any such better offer. This system is practiced in the Philippines, South Africa and Gujarat in India.

A third approach may also be considered. The government can purchase the project concept and then awards it through a competitive bidding process.

Some governments may not encourage unsolicited proposals. In fact, legal provisions of many countries do not allow such projects. However, for various reasons (financial and political pressures, urgent need, etc.) they may be compelled to consider such proposals, if not illegal. In such a situation, governments are in a better position to handle unsolicited proposals if a transparent system is already in place for such purposes. This would then allow a competitive bidding process but offers the original proponent an advantage in the process. Such a system for handling unsolicited proposals may include an initial screening to determine the merit of a project. It may then consider separate procurement processes for proposals that do not involve proprietary concepts or technology and those that involve proprietary concept or technology.

C. Sector-specific issues in PPP projects

One of the main objectives behind promotion of PPPs is to achieve efficiency gains in project operation and service delivery. However, often the existing condition in a sector is not conducive to create a multi-operator competitive environment, which is a necessary condition to achieve this objective. It may be pointed out here that while transfer of ownership to the private sector and/or private operation may bring some improvements but these actions alone may not be sufficient to bring the desired level of improvement in efficiency. Changes in current policies, legal and regulatory regimes and practices may also be required to allow multiple operators operating in a truly competitive environment to generate and provide the services.

The major issues in creating a multi-operator competitive environment conducive to private investment can be categorized in three broad groups, which are:

- Reforms aiming at structural changes of the sector through breaking down of state (or private) monopolies, and removal of sector inefficiencies to create a multi-operator competitive environment conducive to truly sustainable development on economic as well as ecological considerations;
• Issues that arise due mainly to a multi-operator environment such as network expansion, inter-connection and inter-operability (operational issues);
• Physical/natural characteristics of the sector, particularly those related to the optimum use of the natural endowment such as land, water, mineral and mining resources, and radiofrequency spectrum.

**Structural reform (sector and market)**

The main purpose of reform is to breaking down or unbundling of the existing (state or private) monopoly vertically and horizontally to facilitate competition and reduce potential abuse of monopoly powers or dominant positions. For example, an existing state electricity monopoly can be vertically broken down into three separate companies for power generation, power transmission, and power distribution and marketing. The power generation company and the distribution companies can be further broken down horizontally into smaller companies. Reformed private policy measures may then allow new entrants at any of the three vertical levels – generation, transmission or marketing and distribution for any particular area or region. Further, the marketing and distribution aspects may also be separated.

It may be mentioned here that private participation may be allowed without breaking down of the public monopoly. However, existence of such a monopoly could pose a barrier or disincentive to private involvement. Unbundling of existing monopoly helps in three ways:

• It separates out certain parts that may be a natural monopoly (for example, the gas or electricity transmission lines, which may not be applicable however, for a large country);
• It accommodates private investments that are feasible in size and are manageable considering the technical capacity of the private sector;
• It allows specialization in infrastructure operation and marketing.

Another major issue in sector reform concerns removal of sector inefficiencies, particularly those related to technical standards and distortions in resource pricing. Existing technical standards, for example allowable axle loads in the transport sector, could be an obstacle to improve efficiency of operation and thus may be a deterrent to private investment in many infrastructure facilities.

Distortion in the pricing of services by competing infrastructure facilities, such as by two transport modes road and rail, can be a serious problem for the motivation of the private sector in many countries. The transport, water and energy costs paid by the users often do not fully reflect their true economic costs due to the provision of subsidy, etc., and (virtual) non-inclusion of certain cost items in pricing such as the cost of road infrastructure (which may be considered a free public good), or the environmental costs.

The distortion in pricing may not only become a barrier to private investment in certain facilities (for example, in rail transport), it may also lead to misallocation of resources and thus set a trend of unsustainable development. This situation should therefore be rectified.
on the basis of correct evaluation of resource costs to ensure long-term sustainable development in infrastructure sectors. In order to ensure allocation efficiency, future allocation of resources, either by the public sector or by the private sector, should be based on a detailed analysis of true costs and benefits including those of externalities.

The benefits of PPPs, particularly in terms of cost and efficiency in service outputs and delivery, could be limited if such projects are undertaken without consideration of necessary sector reforms. It is however not to suggest that sector reforms are a precondition to undertaking PPPs. Reforms may also be considered simultaneously or may follow project implementation. Technological advancement and change in economic environment may also require further reforms at a future date.

**Operational issues in a multi-operator environment**

Discussion on specific nature of the sectoral problems in PPPs is beyond the scope of this primer. However, the intention here is to flag that there are important sectoral issues that need to be considered in PPP projects. Many of these issues need to be resolved in the policy framework as well as in the country’s legal and regulatory regimes. Some other matters need to be included in the contract agreements with explicit reference to future arrangements for their resolutions.

One common problem relates to vertical and horizontal integration of the new systems with the existing and future relevant systems. Most infrastructure facilities are of network nature. As such they should not be undertaken in isolation without considering system and service integration with the existing networks and operators as well as with future networks, and other issues related to network development. The system and service integration issues for each sub-sector are however different due to difference in their technological and operational characteristics. Depending on the nature of the issue, they may be dealt in three ways:

- Issues that can be addressed through sector reforms (this is also necessary to promote PPPs)
- Issues that need to be considered in the policy framework and regulatory regimes
- Issues that need to be considered/reflectied in contract agreements

**Physical/natural characteristics of a sector**

**a) Transport**

The major sector issues in the transport sector include:

- System integration, network expansion (urban transport)
- Service integration between different operators and across different modes, common ticketing system, PSO (urban transport)
- Interconnection between systems, access to common infrastructure facilities by service operators, passenger and cargo traffic rights (road and rail)
- Lateral access control, safety and parting of communities on two sides (road and rail)
• Intermodal transport development and operation (for all modes)
• Traffic rights, safety and security, further expansion (port and airport and other facilities such as ICDs and freight villages, etc.)

Some of these issues, many of which are interrelated, are discussed next.

A major direction of development in improving transport services (for both passengers and goods) is the integration of services provided by multiple operators often using different modes over a wide geographical area. Successful integration programmes can allow seamless travel between two points without the necessity of making separate payments for each segment of the trip and reduce the hassles of transfer at intermodal terminals or transfer points. Integration can make transport cost cheaper and journey time shorter.

Integration can occur at three levels: physical integration, operational integration, and institutional integration.

**Physical integration** is the lowest level of integration. It refers to the provision of jointly used facilities and equipment. Such facilities may include intermodal terminals, transfer points or stations, transit shelters, standardized identification symbols and display techniques used by all modes and services, etc. Efficiency, comfort and safety at transfer points are of vital importance for consideration.

**Operational integration** of services can be considered as the second higher level of integration. It allows matching of modes according to service requirements and rationalization/reorganization of existing services. Faster and high-capacity long-haul modes such as rail transport can be used for high-density travel corridors, while lower capacity road-based modes such as buses and trucks can be used as feeder to these high-capacity modes. Operational integration can also help eliminate wasteful duplication of service by competing modes and resources can be redeployed where they are better utilized. Another important feature of operational integration is unification of the tariff structure. A single tariff structure can be established to permit users pay at the beginning of the trip and transfer freely between all modes or lines of service covered by the system.

**Institutional integration** refers to the creation of an organizational framework within which joint planning and operation of transport services can be carried out by a number of independent transport operators. Such organizational framework, however, can take different forms. There can be an organizational arrangement for setting a joint tariff and collection and distribution of jointly collected revenues. This type of arrangement works well where partners provide complementary services, do not compete but rather make end-to-end connections. The partners can go beyond this revenue collection and distribution by setting up a framework to coordinate routes and schedules. They can also establish a federated agency and delegate to it powers related to planning, joint facilities, tariffs, charges for the use of common infrastructure, revenue distribution and any other matter they consider appropriate. However, when multiple operators are to share common infrastructure facilities to run their services, such as a dedicated railway track or transport route, a much stronger form of institutional integration is necessary.
Another major issue that also involve integration is intermodal freight transport. Intermodal transportation utilizes the inherent advantages of each mode involved, creating synergies and efficiencies not otherwise attainable. The service provided is different from and superior to that available from either mode alone. Carriers joined in intermodal combinations seek to provide a complete service from origin to destination. Carriers whose services have historically been restricted to one mode of transportation are transforming into large multi-modal companies through joint ownership or contractual agreement. Whether used to create new types of service, to lower rates to attract more traffic, or to lower costs to increase profitability, these arrangements are reshaping transport development of the present time.

b) **Power/Energy**

The availability of reliable and quality power/energy at competitive prices to industrial, commercial and domestic consumers is the main challenge of this sector. A comfortable level of spinning reserve is also needed to ensure grid security and quality and reliability of power/energy supply. In this respect, it is important to impose mandatory reliability standards on the bulk transmission system.

Open access in energy transmission to promote competition amongst the generating/producing companies who can sell energy to different distribution licensees is a major sectoral issue. When open access to distribution networks is introduced for enabling bulk consumers to buy directly from competing power generators or energy producers, competition in the market should increase the availability of cheaper and reliable energy supply. The transmission line infrastructure provider/regulator needs to provide facilitative framework for non-discriminatory open access. This requires load dispatch facilities with state-of-the-art communication and data acquisition capability on a real time basis. These general conditions, among others, are important to consider in a PPP project.

The major issues in this sector are:

- Market structure
- Unbundling of the sector (generation, transmission, distribution and sales)
- Imposition of security, and quality and reliability standards on the common energy/power transmission lines
- Access to common energy power/energy transmission lines
- Facilitative framework for non-discriminating open access to common infrastructure facilities
- Source of energy, method of exploration, extraction, etc.
- Choice of technology
- Waste heat recovery and cogeneration
- Waste and waste water treatment and disposal
- Safety and environmental issues

c) **Communication**

The sector and market structures are two major issues in this sector. The other major issues relevant to PPPs in this sector include:
• Interconnection with other operators (technology, fee, management of interconnection facility, monitoring of call and data transfer between operators)
• Internet, Voice over Internet Protocol, and other data transmission technology
• Upgradation of technology (for example, from 2G to 3G in mobile telephony)
• Radiofrequency allocation and utilization
• Reallocation of radio frequency after the expiry of contract period
• Revenue sharing between operators as well as between the government and the operator (in lieu of any licence fee or in addition to such fees)
• International gateway (telephone, Internet, VOIP)
• Value-added service provided by telephone service operators
• PSO

Radiofrequency spectrum management is the major issue related to utilization of this scarce natural endowment. The major concern is the efficient utilization of the limited band of spectrum available for all radio communication services. Following the guidelines of ITU and other international/multi-lateral bodies, countries have their own national frequency tables. Within the permitted band of frequencies, national regulators have flexibility to vary allocations for competing communication services according to local circumstances.

The two issues concerning spectrum allocation that needs to be considered in a PPP project are ensuring technical efficiency and economic efficiency of resource utilization. Technical efficiency refers to the requirement that different users and uses of radiofrequencies should not interfere with each other. Economic efficiency on the other hand refers to a judgement regarding the allocation of limited frequencies among alternative uses to provide various types of communication services. To ensure economic efficiency of utilization, some form of pricing will be required. Therefore, economic value of spectrum needs to be considered in the allocation decision. Since the economic valuation of the spectrum may change over time, a mechanism may be considered to allow reallocation of the spectrum as market valuations change. The reallocation mechanism can be a part of the sectoral policy framework, which may then be translated into regulatory guidelines by the sector regulator and included in the concession contract accordingly.

d) Water

Water is the most basic of all resources that humans need. The type and level of activities in an area much depends on its availability. Water may be obtained from surface sources such as lakes, rivers and seas or from the underground. Whatever may be the source, in most cases only a limited amount may be available/exploited on a sustainable basis. In order to ensure the optimum utilization of this vital resource, a decision may be required on how much water may be exploited from available sources, particularly when the available water may have other alternative as well as competing uses. This decision on the limits of exploitation should be based on true cost. The main issues in this sector include:

• Sector structure
• Sources of water and the limits of their use for a particular purpose
• Creation of reservoir and other means of storage
• Treatment, disposal and recycling, and use of waste water
• Service area
• PSO (fire service) and other service obligations
D. PPP projects by local governments

Subject to legal provisions of the country, local governments can also undertake PPP projects. Generally (but not necessarily always) such projects are smaller in size and value than PPP projects of the national government. The issues are essentially very similar to those of large-scale projects. Because of their smaller size and project value, they may be much less complicated to implement. However, due to serious capacity and resource constraints of local governments in most developing countries and their limited ability in leveraging policy options, PPP projects by local governments are not very common in most developing countries.

Local governments, however, can consider various infrastructure projects in the urban sector such as markets, bus and public transport terminals, bus rapid transit facilities, municipal water supply and sewerage systems, and solid waste disposal systems. Local governments in many countries of the region such as in Japan and the Philippines have implemented such urban infrastructure projects.
MAJOR ISSUES OF CONCERN...

- Risk transfer is a key element in effective PPP design. If a good balance in sharing risk is not achieved, it will result in increased costs and the inability of one or both parties to fully realize their potential.

- The general principle is that project risks are allocated to the party that is the best equipped to manage them most cost effectively. For example, political and regulatory risks are more appropriate to the public sector while construction and operating risks are more suited to the private sector.

- Unsolicited PPP projects have been implemented in many countries but some countries do not entertain such proposals because of the problems associated with unsolicited proposals, especially the risks they raise for competition and transparency.

- There are merits in keeping provisions for considering unsolicited project proposals. Often, such proposals are based on innovative project ideas or proprietary technology. The difficulty with unsolicited proposals is however, getting the right balance between encouraging companies to submit innovative project ideas without losing the transparency and efficiency gains of a competitive tendering process. Some governments have developed systems to transform unsolicited proposals for PPP projects into competitively tendered projects.

- Often the existing conditions in a sector are not conducive to create a multi-operator competitive environment. Transfer of ownership to the private sector and/or private operation may bring some improvements but these measures alone may not be sufficient to achieve the desired level of efficiency gains. Changes in policies, legal and regulatory regimes and practices may also be required to allow multiple operators operating in a truly competitive environment.

- The major issues in creating a multi-operator competitive environment conducive can be categorized in three broad groups, which are:

   1. Reforms aiming at structural changes of the sector and the market, and removal of sector inefficiencies (due to distortions in resource pricing, obsolete rules, technical standards, etc.);

   2. Issues that arise due mainly to a multi-operator operational matters such as network expansion, access to network, inter-connection and inter-operability;

   3. Physical/natural characteristics of the sector, particularly those related to the optimum use of the natural endowment such as land, water, mineral and mining resources, and radiofrequency spectrum.
Several parties are involved in the implementation of a PPP project. They include government, project sponsor(s), banks and other financial institutions, experts, suppliers, off-taker(s) and third parties. As already discussed in Chapter II, a special project company called SPV may also be established for the purposes of project implementation and its operation. The details of implementation and payment arrangements are negotiated between the parties involved and are documented in a number of written agreements signed by them. If an SPV is established, it is at the centre of most of such agreements. In other words, the SPV negotiates the contract agreements with most of the parties involved in the process. If establishment of an SPV is not required, the concessionaire (or the private project company which sponsors the project) is at the centre of such agreements and negotiates the contract agreements with the other parties including the government involved in the process.

Figure 12 shows the nature and the general order of execution of such agreements between different parties. Among the agreements executed between an SPV (or the concessionaire/private project company) and other parties, the two most important ones are the contract agreement with the government and the agreement with the financiers. In fact, the contract agreement with the government forms the basis for subsequent agreements with other parties. It may be mentioned here that all types of agreements shown in the figure may not be necessary for all projects, for example, an off-take agreement in case of a toll road. An off-take agreement may not be also be required for all power projects.

Considering the scope of the present document, discussion presented here is limited to the contract agreement between the SPV or the concessionaire and the government.

A. Contract Agreements

Contract agreements of a project between the contracting authority in government and the concessionaire/private project company may be contained in a single document or may consists of more than one separate document. It is difficult to generalize all possible contents of such agreements as they vary due to difference in legal and regulatory

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33 It was mentioned in Chapter II that establishment of an SPV is a key feature of large PPP projects, particularly when the PPP is a joint venture and/or financed on project basis. However, establishment of an SPV is not required for all PPP projects. A PPP contract can also be awarded to an existing private company.
provisions from one country to another, type of PPP model and the nature of involvement of the public sector, implementation arrangements (including financial matters), operational, and various sector specific resource utilisation, technological and other matters. There are, however, certain key elements that are expected to be covered in most contract agreements.

The main issues that are generally covered in the PPP contract may include the following:

- Obligations of parties to the agreement (the private party, the contract awarding agency and the government)
- Tenure of contract and access rights to the project site
- Ownership of land and facility
- Sector specific special issues
- Allocation of risks (and consequences)
- Construction, commissioning, operation and maintenance of the facility
- Performance requirements (service delivery and other technical, quality and safety standards)\(^\text{34}\)
- Availability of contracted services and procedures for variations of service scope
- Payment and other financial matters (including penalties for failure to meet performance requirements)
- Price review and adjustments
- Step-in rights (of the government, financiers)
- Insurance
- Change in service requirements
- Upgrading and technological obsolescence
- Amendment and variation of agreement
- Monitoring and review (including data collection, compilation and reporting)
- Contingency planning
- Dispute resolution
- Termination of contract
- End of term arrangements
- Service delivery management
- Contract compliance and management
- Renegotiation

The preparation of contract documents can be a major administrative task in PPP development and may also require a considerable amount of time. The availability of standardized contract documents or model contract agreements with the provisions of model clauses can be of great help in this respect. It helps considerably in streamlining the administrative process by reducing the time in preparing such documents and getting them cleared from the concerned government agencies. Model concession/contract agreements or MCAs also reduce the cost of legal fees in preparing contract documents. Considering its advantages many governments have developed MCAs.

\(^{34}\) It is important to remind here that the focus of a PPP project should be on delivering specified amount of services at defined levels and not on delivering a particular class/type of assets. As such the details of performance requirements in a contract document are very important.
for their PPP programmes. The MCAs prepared by the National Highway Authority in India for their national highway development programme are examples of such model agreements.  

35 Available at <http://www.nhai.org/concessionagreement.htm>.

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**Figure 12. Agreements in a typical PPP arrangement**

The body of the contract agreement is generally divided in several sections or chapters, each on a specific issue. There may be one or more annexes or schedules attached to the main body of the agreement. These annexes or schedules provide more details on some specific matters, for example the technical and performance specifications for the project. The generally common key sections of an agreement and the nature of their contents are briefly mentioned next.

**The preamble of the agreement.** This section identifies the parties in agreement, purpose of the agreement, context and reference to legal empowerment of the authority to execute the agreement, objectives and description of the project (generally more elaborate scope of the project are mentioned in a schedule attached to the main agreement), language and number of original copies of the agreement, date of effect, the date and place of agreement, and other related matters.
Definitions and interpretations. This section provides operational definitions and interpretation of terms (such as, accounting year, agency, authority, book value, concession, contractor, financial closure, good industry practice, minister, terminal, etc.) used in the contract document that require clear understanding. It may also define what would prevail if any discrepancies or ambiguities in the text of the agreement are observed.

Concession. With other relevant items, this section outlines authorisation of activities granted to the concessionaire or the project company; rights, privileges and obligations of the concessionaire/project company; and concession/contract period. It may also mention what would have to be done by the private company at the end of the contract period, for example transfer of the assets to the government.

Project Site. The major items in this section include location of the project site, rights, title and use of the project site, handover of the project site, possession of the site, maintenance of the site, and applicable licences and permits that the private company need to collect from concerned authorities. It may also mention if the contracting agency would have any role in securing those licences and permits.

Independent Engineer and other third parties such as insurer and escrow agent. This section specifies the eligibility and general qualifications and broad terms of reference for such parties, procedure for the appointments, payment, replacement and eligibility for reappointment. Payment to independent engineer and other third parties may also be included in this chapter.

Engagement of sub-contractors. The purpose, general rules, applicable areas, obligations of the private company in engaging sub-contractors are mentioned in this section.

Concessionaire’s/private company’s obligations. This section deals with matters on general obligations, shareholding arrangement, financing arrangement, refinancing, use of insurance proceeds, uninsurable risks, information disclosure, public information, performance security. Obligations in respect of sectoral issues (for example, providing interconnection to services provided by other operators), and various reporting requirements to regulatory bodies may also be included in this section or in a separate section.

Design construction and maintenance of facility. This section may include provisions related to the design and preparation of drawings, approval of architectural and engineering design and drawings, review and approval of design and drawings, project construction, start and completion, consequences of early and late completion, monitoring and supervision of construction, testing and commissioning, operation and maintenance, temporary closure for repair and maintenance, incidence management, network connectivity and access to facility by other operators/agencies, material breach of operation and maintenance, performance measures (quality and quantity of project outputs), performance monitoring, information disclosure, below performance, insurance, operation period, etc.

Government Agency’s obligations. It provides general obligations and specific obligations of the contracting agency. These may include, for example, establishment of a tariff review commission, government incentives that may be applicable (see Chapter III), handing over the project site and other areas in which the concessionaire/project company may expect support from the government and the conditions of such support. The obligations of the government if any, may be considered in a separate section.
Change of scope. This section defines the necessity of change, admissible changes and the defined procedure for making such changes.

Payments and financial matters. This section may consider the provision of types and period of payments, procedure for payment, calculation of the amount of payment, payment adjustment, bonus and reduction in payment, security, sinking funds, VAT and other taxes, performance security, supervision charges of the implementing authority, monitoring expenses, and insurance.

Tariff, fees, levy and their collection and appropriation. The government agency’s rights, concessionaire’s obligation, tariff structure and amount, exemption and discrimination, subsidization/cross-subsidization, reviewing of tariff, tariff adjustment, cost of tariff review, fees and levy, integration of fees and tariff with other relevant operators, appropriation, revision of fees, collection and payment/transfer mechanism are included in this section. It may also include accounting standards, information on cost of operation, tariff review process and mechanism.

Capacity augmentation. The provision on time of consideration, bidding requirements, concessionaire’s/private company’s rights, terminal payment if the concessionaire does not take part are included.

Waste treatment and disposal. The coverage of this section may include types of waste covered and their sources; methods of collection, transportation, treatment and final disposal (solid and liquid); physical, chemical and biological characteristics of the wastes at final disposal; and recycling of treated waste water. The details of technical standards on treatment and disposal can be considered in a separate annex or schedule.

Change in law. The definition of meaning by change in law, assessment of effect on concessionaire, compensation to concessionaire, obligation of concessionaire and other related matters can be covered in this section.

Force majeure. This section considers events (political and non-political), obligation of parties, allocation of costs, compensation to concessionaire, termination of contract due to force majeure and payments due to such termination.

(Normal) Termination of contract. The contents include the possibility of renewal, the transition arrangements when a new operator takes over, the basis for calculating compensation for assets not fully amortized or depreciated and related matters.

Events of default and termination. The matters of consideration include concessionaire event of default, agency event of default, termination due to concessionaires or agency events of default, obligations and rights of parties, termination procedure and payments and claim on assets.

Mode of payment by agency. Mode of payment, valid discharge, dates of payment, etc. are covered in this section.

Handover of project facility. Time, obligations of concessionaire, defect liability, rights of agency, procedure of handover, and valid discharge are the major points in this section.
Independent auditor. General requirements and eligibility, procedure of appointment, obligations of the auditor and payment of fees are specified in this section.

Applicable law and dispute resolution. The applicable laws, methods of dispute resolution to be used (conciliation, arbitration, etc.) and their procedure, obligations and rights of parties are specified in this section.

Representations and warranties, disclaimer. Representations and warranties of the concessionaire and the government agency, obligations to notify any change to the other party are covered in this section.

Miscellaneous. This section considers liability and indemnity, amendment, governing laws and jurisdiction, waiver, counterparts, etc.

Annexes or schedules. Description of each schedules on various items (I, II III, etc.) as referred to in the main text are mentioned in this section.
B. Contract management

Contract management is an important activity in PPP programme/project administration. The management process needs to be in place from the outset to ensure timely completion and satisfactory operation of a project. A separate process may also be considered to monitor the PPP programme performance of a sector or for the country as a whole. The contract management process not only helps to fix responsibilities, but also allows timely response to any deviation in project implementation or operation from the provisions in the contract agreements and thus helps to avoid disputes between the parties at later stages. The three key aspects of contract management are:

- Contract administration
- Service delivery management
- Relationship management

Contract administration involves the establishment of administrative processes to ensure that all the procedures and documentation relating to the contract are effectively managed. The three major activities in contract administration are: variation management, maintaining the integrity of the contract, and financial administration. Clear administrative procedures for these activities help to ensure that all parties to the contract agreement clearly understand their individual responsibilities, time and procedure of action.

Service delivery management has two major elements: risk management and performance management. Risk management involves keeping the exposure of the project to any potential risks at an acceptable level by taking appropriate action in time. Performance management is concerned mainly with ensuring the quantity and quality of service delivery as per the contract, resource utilization, and performance improvement in the future to reflect technological and other new development as appropriate.

Relationship management between the private provider and the government implementing agency over the long contract tenure of a PPP project is vital for its success. Building an effective relationship that is mutually beneficial does not imply that either party has to compromise its contractual rights and obligations. The key factors to a successful relationship are mutual understanding, open communication and information sharing, and recognition of mutual objectives. Appropriate lines of communication at strategic, business and operational levels between the implementing agency and the private party are necessary to build a successful relationship. The clear lines of communication at the appropriate levels help to ensure a prompt resolution of disputes that may arise.

Usually a team comprising officials from the implementing agency and other concerned departments of the government supported by a range of specialists and technical advisors with varying levels of involvement is required for contract management. The resource requirement of the team is affected by the overall size and complexity of the project and its implementation stage in the overall project cycle. In some cases it may
be possible for the contract management function to be carried out by a single individual. But for large projects it would normally require a team work. The contract management team in effect may evolve from the project team in the inception, feasibility and procurement phases, taking on different technical skills and experience as needed throughout the project cycle.

Besides the implementing agency, some other agency/department of the government (for example, the central bank) and the respective sector/industry regulator may also be involved in the contract management process. The main tasks in contract management include:

- Formalisation of management responsibilities by organization and at different levels. A critical aspect is to identify and clarify the roles and responsibilities of key individuals involved in the contract management process. Ambiguity about the functions of important individuals in the contract management process could lead to unnecessary delays and disputes.
- Monitoring of project delivery (construction phase).
- Management of variations during project implementation (time schedule, change of design and specification, etc.) and operation.
- Monitoring of operational aspects and service outputs after project implementation.
- Maintaining the integrity of the contract. It involves establishing procedures to ensure that the contract agreement and related documentation are consistent, up-to-date and accessible to all the relevant parties. Contract agreement maintenance also involves taking action to allow all parties to develop a common view of contractual obligations.
- Fiscal obligations of the government (if any).
- Financial matters. Effective financial administration involves the development of systems and procedures to make and receive financial payments according to the provisions in the contract agreement, and to keep records of such transactions.

Separate monitoring frameworks may be developed for the construction and operational phases. A mechanism is also required to gather, collate and analyze the required information on a regular basis for these frameworks, and to feed that information to the relevant authorities according to their requirements. The information requirements for different agencies are generally different. As such, the implementing agency, regulator and the government may also establish separate monitoring frameworks to serve their own specific needs. However, the monitoring frameworks need to be based on performance indicators mentioned in the contract/concession agreement and other requirements of the administrative procedures related to PPPs.

C. Dispute resolution

The legal basis for the settlement of disputes is an important consideration in implementation of PPP projects. Private parties (concessionaire, financiers and contractors) feel encouraged to participate in PPP projects when they have the confidence that any disputes between the contracting authority and other governmental agencies and the concessionaire, or between the concessionaire and other parties (for example, the users or customers of the facility), or
between the private parties themselves can be resolved fairly and efficiently. Disputes may arise in all phases of a PPP project namely, construction, operation, and final handover to the government. The agreed methods of dispute resolution between the parties are generally mentioned in the contract agreement as allowed under the legal framework of dispute resolution in the country.

The legal framework for dispute resolution may be embodied in a number of legal instruments and relevant rules and procedures of the country. The legal instruments may include the PPP/private contract law, company law, tax law, competition law, consumer protection law, insolvency law, infrastructure sector laws, property law, foreign investment law, intellectual property law, environmental law, public procurement law or rules, acquisition or appropriation law, and various other laws. The commonly used methods for dispute resolution include:

- Facilitated negotiation
- Conciliation and mediation
- Non-binding expert appraisal
- Review of technical disputes by independent experts
- Arbitration
- Legal proceedings

It is important that the settlement mechanisms considered are in line with the international practices, particularly when large-scale investments from the foreign private sector are expected.

Generally, the contract agreement(s) specifies what methods of dispute resolution would be followed to settle any disputes arising between the parties and the rules and procedures to be followed for that. The United Nations Commission on International Trade Law (UNCITRAL) has prepared a Legislative Guide on Privately Financed Infrastructure Projects. The Guide provides guidance on clauses related to dispute resolution that may be considered for inclusion in the contract document.

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MAJOR ISSUES CONCERNING CONTRACT AGREEMENT...

- The preparation of contract documents is a major administrative task in PPP development. The availability of standardized contract documents with alternative model clauses can greatly help in streamlining the administrative process through significant reduction in time taken for preparing contract documents and getting them cleared from the concerned government agencies. It also reduces the cost of legal fees for preparing such documents.

- A contract management process needs to be in place from the outset to ensure timely completion and operation of a project. A separate process may also be considered to monitor PPP programme performance as a whole. A contract management process not only helps to fix responsibilities, but also allows timely response to any deviation in project implementation or operation from the provisions in the contract agreements and thus helps to avoid disputes between the parties at later stages.

- The legal basis for the settlement of disputes is an important issue in PPP development. Private parties (concessionaire, lenders and contractors) feel encouraged to participate in PPP projects when they have the confidence that any disputes between the contracting authority and other government agencies and the concessionaire, or between the concessionaire and other parties, or between the private parties themselves can be resolved fairly and efficiently.

- A wide range of dispute settlement mechanisms should be available in order to avoid court cases that may be both lengthy and costly. It is important that the settlement mechanisms are in line with the international practices, particularly when large-scale investments from the foreign private sector are expected.
VIII

PROCUREMENT

A. Introduction

Each country has its own unique approach to soliciting and evaluating PPP project proposals. Many countries have special legal instruments concerning PPPs. It is likely that the procurement process is also outlined in their legal instruments. In other countries where there is no such special law on PPPs, governments normally follow a procurement process in line with the general public procurement process of the country. Considering the complexity of PPP procurement compared with conventional public procurement, some countries have outlined detailed steps to be followed in a PPP-procurement process.

In a developing PPP market however, it is difficult to outline a suitable procurement process at the outset. Considering the complexity and limited experience at the beginning, some countries have taken a cautious and pragmatic approach in procurement. Developing a flourishing PPP industry requires care and consideration of lessons learned through initial projects. In the early years of PPP development many governments approve projects on an ad-hoc basis but taking care of general public procurement guidelines or rules to establish an experience base for the country. Once this experience base is established a more formal process can be finalized by the controlling authority/ministry.

B. Good governance in PPP procurement

Although countries have their own distinct procurement regulations, there is a common element in the procurement process of all countries that have successful PPP programmes. This common element that underlines their own unique approaches to PPP procurement is a transparent, neutral process based on the common principles of good governance. The countries follow a process that promotes competition and a balance between the need to reduce the length of time and cost of the whole procurement process. The main objective of such a process is to acquire the best proposal that serves the purpose of the government and provides the value for money. The main characteristics of such a procurement process include:

- Open and unbiased tendering process that provides equal opportunity to all prospective bidders
- Not a one-way process
- Schedule of requirements is finalized through a two-way communication and based on what the best possible solution the market can offer
• Avoids costly retendering
• Ensures wide participation of the private bidders by eliminating costly design efforts before the contract is finally awarded. The actual bidding is designed in such a way as to establish reasonable limits on cost in tender preparation; and
• When applicable, a two-step tendering process is considered to avoid costly design exercises in the first stage.

C. Pre-procurement activities

The procurement of a PPP contract is generally much more complex than the procurement of conventional public sector projects and, depending on the complexity of the project it may require a much longer time. There are tasks that need to be completed before initiating the formal procurement process. These pre-procurement tasks can include the following:

• Institutional due diligence (to assess the capacity of the government agency to handle the project and how the deficiencies can be met)
• Deciding the whole procurement process including identification of stages at which government approval is required (if not already defined)
• Project development and due diligence (feasibility study, business case analysis, structure of a bankable project deal, basic terms of contract, etc.)
• Evaluation criteria and committees
• Contract negotiation team (needed at a later stage) and
• Appointment of a transaction advisor, if needed.

Once these tasks are completed and cleared by the government, the implementing agency can proceed to initiate the contract procurement process.

D. The procurement process

There are some common steps in the procurement process in countries that have a matured PPP programme. Although the details in each of those common steps may vary and differ in approaches but their purposes are very similar. Generally the following steps are followed:

• Market sounding
• Prequalification of bidders
• Request for proposal from selected bidders
• Information exchange and feedback from market
• Finalization and issuance of final tender
• Evaluation and selection of preferred bidder and
• Contract negotiation, award and financial close.

**Market sounding**

Market sounding is conducted by organizing a procurement briefing/conference open to any interested private parties. The main
purpose of this step is to get some initial feedback from the market on the feasibility of the proposed PPP project. Relevant basic information on the project is provided to the interested parties which may include the type of services to be procured and the demand for such services, type of PPP deal (BOT, BOO, etc.), likely tenure of contract, obligations of the parties in broad terms, revenue sharing arrangement, financing, exit arrangements, etc.

Both the government and interested investors are benefited through this pre-procurement engagement and consultation. The interested investors get an idea of the government’s intention and the government agency gets initial response of the market concerning the project including a better picture of the private sector’s capacity and interest in the project.

With the feedback from this stage the government agency can structure the subsequent tender documents and terms in such documents in a better way. The engagement with the interested private parties at this stage is considered a technical consultation and is not intended for any kind of investor evaluation, selection or bid price negotiation. Also, no commitment from either the private parties or the government is expected. To make the process meaningful, the consultation is held well in advance of the issuance of the final tender notice.

An additional advantage of this stage is that it helps the government to establish prequalification criteria and develop a general schedule of requirements.

**Prequalification of bidders**

The prequalification of bidders is a typical stage followed in most countries. This stage may also be considered as the beginning of the formal procurement process to select a private investor/service provider. This stage begins with an invitation for expressions of interest (EOI). The main objective is to pre-qualify potential bidders for the project. The purpose of prequalification is to assess the technical and managerial competency and financial soundness of the interested bidders. Prequalification of bidders is not intended to cover any aspect of the proposal for the project or factors related to the indicative contract. These elements are considered at the later stages of the procurement process.

Sufficient time is given to prospective bidders to submit their EOI. Considering the complexity of the project some countries allow 4-12 weeks for the submission of EOI. The EOI notice may include the following information for the prospective bidders to consider:

- Sufficient explanation of the project and basic information;
- Main terms of the indicative contract. These terms are similar to those presented at the procurement briefs/conference but modified in response to the results of market sounding;
- Evaluation criteria and their relative weights. Such factors may include technical capability, management capacity, financial condition, past performance, etc. The prequalification criteria are chosen to assess the capacity of the intending bidders to deliver the contract;
- The procedure for final selection.
All bidders who satisfy the prequalification criteria are generally selected as prequalified bidders. There may not be any pre-determined number to artificially limit the numbers prospective bidders who can participate in the following tendering stage. However, if there are too many prequalified bidders, some countries consider a condition in the EOI to allow formation of consortiums of prequalified bidders for submission of their final bids.

**Tendering**

Typically, a two-step tendering process is employed. This serves two main purposes. First, it helps both the government and the bidders to understand each other’s requirements and the government gets sufficient time to make appropriate revisions before the issuance of the final tender. Second, it avoids costly detail design efforts of the bidders before they are awarded the contract which is widely viewed as unfair and, can also diminish participation in the bidding process.

**Request for proposal (RFP) from selected bidders: First stage of tendering**

At this stage the prequalified bidders are requested to submit their proposals. This is a very crucial stage for complex PPP projects and may require a substantial time. Before issuing this request notice, it is important to refine the project appraisal, if needed, and also to reconsider the assumptions of the business case analysis.

In the first step, bidders are invited to submit tender proposals for the PPP project. At this stage, the interested bidders are asked to supply the conceptual design, a rough estimate of cost, a business plan with performance forecast, the financing plan and the desired share of risks, rewards, costs, etc. The tendering agency may also require other information concerning their partnership proposal, past performance data, information on technical and managerial capacity and financial stability.

At this stage the government may consider to make more detailed information about the project and the contract available to the bidders. This may include: the level and amount of service to be provided, output/input-based performance specifications, draft contract to be signed, timetable and the process for all clarifications that the intending bidders may ask for and relevant other documents.

In order to undertake due diligence the bidders require sufficient information about the project and terms of contracts. To make this successful the government agency may provide the following information to the bidders:

- Technical conditions of the project site
- The projected usage/demand for services
- Relevant legal, technical, financial information
- Level and amount of service to be delivered
- Output standards/specifications
- Auxiliary tasks that may also needed to be undertaken
- Safety/security standards
• Terms of the indicative contract including service specifications, standard specifications, payment mechanism and penalty regime, and legal/regulatory requirements
• Bid formalities and bid evaluation criteria
• Whether any first round evaluation would be done
• Contents of the tender proposal
• Other relevant requirements

The draft contract document should include all critical elements and clearly specify all such items which among others include the following items:

• Risk allocations and responsibilities of each party
• Financial terms (including revenue sharing, if any)
• Performance standards, target dates, deliverables
• Options for terminating the contract
• Dispute resolution approach and mechanisms

**Information exchange and feedback from market**

Generally a feedback period is allowed after the first stage of tendering. In this stage many countries allow further exchange of information between the bidders and the government agency within a specified time period mentioned in the RFP. The bidders may request any clarification in this period. The main purpose of this stage is to ensure that all intending bidders have the same and common level of understanding about the project. The information exchange within a stipulated time frame serves three important purposes.

• It helps the prequalified bidders better understand the terms and conditions of the contract and undertake due diligence, and thus better decide whether to participate in the final stage.
• It allows the government to amend the terms of conditions of the intended contract in order to make it more robust and viable considering the feedback from the prequalified bidders.
• It allows the government to clarify any issues raised by the bidders.

The bidders with highest evaluations are asked to submit comprehensive proposals in the second stage. In some countries, for some projects (such as a large housing project or a community/cultural facility) at the end of the 1st round the bidders are required to submit a draft proposal with conceptual designs for scrutiny by stakeholders. For this purpose a public participation process is designed as an in-built mechanism of the procurement process. The preliminarily selected bidders are then asked to submit their final bids with greater details of their conceptual design and the basic proposal. This process helps to avoid costly design exercise by the bidders at the outset which may in fact limit competition.

**Finalization and Issuance of final tender: Second stage of tendering**

Considering the feedback received from the first round of selected bidders, the government agency may like to amend the tender document after the end of the information
exchange and market feedback period. If any such amendment is made that is made known to all bidders well in advance of the closing date. The whole process may take 4-8 months depending on the complexity of the project. Many countries (South Africa, for example) have defined procedures to be followed in the tendering stage.

**Evaluation and selection of preferred bidder**

A tender evaluation committee is established following the procurement procedure. The committee conducts a fair objective evaluation of the tenders received from the bidders following the criteria which were made known to the bidders in the first stage of tendering and at the EOI stage. In the process of evaluation, the committee may require and ask for clarifications from the bidders. Generally, the tenders that do not meet the specified requirements (termed as “nonresponsive”) are excluded from the evaluation process.

The evaluation committee select the preferred bidder and makes its recommendations to the concerned approving authority.

**Contract negotiation, award and financial close**

After the approval of government the successful bidder is notified of the award. The implementing agency negotiates the final contract document (not the basic terms but details of implementation arrangements such as establishing dates, identifying the relevant authorities/officials on both sides, etc.) with the successful bidder.

After the end of the contract negotiation and agreed upon the contract document, the bidder is allowed sufficient time to finalise and complete all third party agreements. The selected bidder enters into agreements with the lender(s), sub-contractors and other parties within a given time period and bring the deal to financial closure. Depending on the complexity and size of the project four to six months or even more time may be required for a project to come to financial close.

Signing of the contract by the government agency and the private party is the last task of the procurement process. After the financial close, both parties sign the contract and the project implementation phase begins.
IX
SHORT CASE STUDIES

Case study 1: Performance-based management contract for a water project

Navi Mumbai is a port city of 0.8 million people in India. The Municipal Corporation (the city government) used to provide the water supply and sanitation services managed by the private sector through a large number of labour-based annual contracts (42 for water and 48 for wastewater). These contracts had focus on service delivery and were not efficiency oriented. The services were not satisfactory and customer complaints were unending. It was also difficult for the city to administer and control contractor performance for large number of contracts.

With the technical assistance of the USAID, the 42 contracts in water supply and 48 contracts in wastewater were transformed into 19 performance-based service (PBS) contracts for water supply and 6 similar contracts for wastewater services. The scope of these three-year PBS contracts included system operation, new connections, water and energy audits, repair and maintenance, and advisory services to the city. The results of this change in contractual arrangements brought astonishing improvement in efficiency gains. Revenues increased by almost 45 per cent, over a period of two-years the city reduced its annual energy consumption by 4.5 million rupees on sewerage contracts alone, and the chronic customer complaints almost completely disappeared.


Case study 2: The underground MRT system, Bangkok, Thailand

The MRT is the first underground metro system of Bangkok and is popularly known as the Blue Line (identified so in the mass rapid transit plan for Bangkok). It has been built by a state agency, but is operated by a private operator under a 25-year concession agreement. An MRT expert was hired to identify the project within a 3-month period. This was possible because the Government owned a large land holding that could be used for the depot. A decision of the Thai Government in 1995 to underground all future MRT development in central Bangkok had a major impact on the design of the project.

The MRT system was opened in 2004. It has one 20 km long standard gauge (1435 mm) underground radial/distributor route with 18 stations. Three interchange stations provide links to the city’s elevated skytrain system (which was implemented as a Build-Operate-Transfer or BOT project and came into operation in 1999). The MRT and the elevated skytrain systems together form a loop around the central area of the city (see map of the systems in a slide). Similar to the city’s elevated skytrain system, the metro is designed
for the operation of 6-car trains that can carry 50,000 passengers/hour/direction. However, currently the system uses 3-car trains and carries about 200,000 passengers on weekdays.

The MRT civil works were financed by JBIC ODA soft loans to the Government. A private concessionaire was awarded a 25-year BOT concession for the supply of equipment and operations and maintenance of the system. The revenue is shared between the operator and the project owner under a complex revenue sharing arrangement with a larger share for the operator in the initial years of operation. On an average, the operator would receive 55% of the revenue over the entire concession period.

The total cost of the project was US$ 3.1 billion of which about 0.6 billion was the value of the concession agreement awarded to the private operator. Financing structure of the project was: 80 per cent Government (under JBIC loan); 20 per cent operator of which equity 6 per cent, domestic debt per cent 9 and foreign debt 5 per cent.

**Case study 3: Tirupur water and sanitation project, Tamil Nadu, India**

Tirupur, a thriving garments industry city of 450,000 people, in Tamil Nadu was the first in India to implement a PPP water and sanitation project in 2005. A consortium of three private firms implemented the PPP project to ensure sustained supply of water. The project was designed on a Build-Own-Operate-Transfer (BOOT) basis for 30 years, after which it is to be transferred to the state Government. The project is to supply 185 MLD water to 450,000 people in Tirupur city and to another 450,000 people in the surrounding rural areas, as well as to 900 industrial units.

The Tamil Nadu Water Investment Company (TWIC), formed as a joint venture between the Tamil Nadu Government and Infrastructure Leasing and Financial Services (IL&FS), set up the New Tirupur Area Development Corporation Ltd (NTADCL) as a special purpose vehicle (SPV) to implement the project. The total project cost was Rs 1,0230 million (US$ 220 million). The Government's contribution of Rs 550 million (of which 300 million came as equity and the rest as subordinate debt) was leveraged by almost 20 times. In addition, the state Government also provided contingent support as debt service reserve fund of Rs 500 million and water shortage period fund of Rs 750 million. The overall financial structure of the project was as follows: Total cost- US$ 220 million; equity and subordinate debt – US$ 87 million; debt – US$ 133 million. The project risks were apportioned to international level private agencies on the basis of core competencies.

The project charges a composite water and sewerage charge to recover the cost. However, to meet the social objectives, the project has a very strong element of cross subsidization of the household water tariff rate. While the base year charge was calculated at Rs 30.0/kl, rural and urban households were to be charged at Rs 3.5/kl and 5.0/kl, respectively against a rate of Rs 45.0/kl for the industries. Industries were able to cross-subsidize as the opportunity cost as well as the actual cost of water in comparable locations were much higher (from Rs 60 to 80/kl). The concession agreement lays down a transparent formula for tariff setting with the provision of standard annual revision based on various components of the operating cost linked to appropriate price indices.
Case study 4: Port Klang, Malaysia

The container terminal situated within Port Klang is located about 50 km south of Kuala Lumpur. The entire port facility including the terminal was managed by the Port Klang Authority, a wholly owned government enterprise. It was a profitable concern of the port authority. The Government decided to privatize the terminal as a part of the Government’s privatization programme. One of the main reasons behind the decision for privatization was that the facility was operating at a low efficiency by international standards.

According to the privatization plan a new company called Klang Container Terminal (KCT) was established. Initially KCT was wholly-owned by the Port Authority. This was done to facilitate the issuance of shares by the new company, which could be sold to a private sector buyer. The Port Authority invited bids to sell 51 per cent shares of the newly formed company KCT. The rest 49 per cent was retained by the Port Authority. It was decided that once KCT was well established there would be a public offering to sell part of the shares held by the Government and the private buyer. According to the plan, after selling the shares through public offering, the distribution of equity held the shareholders would be as follows:

- Port Klang Authority: 20 per cent
- New Private buyer: 40 per cent
- Employess of KTC: 05 per cent
- General public: 35 per cent

Source: Based on information provided in Havelka, Zdenek sen. and Zdenek Havelka, June (1990), Privatization of Transport in Developing Countries, GTZ, Eschborn, pp. 196-209.

Figure 13. The privatization process of the Port Klang Container Terminal

There was a legal constraint in the privatization process. The land on which the terminal was located could be legally sold to a private party. This problem was circumvented by stipulating that KTC would lease the land from the Port Authority for 21 years for the express purpose of operating a container terminal.
There was significant improvement in productivity of the container terminal. Although it is generally agreed that competition and regulation are more important determinants of economic performance than ownership, the Port Klang case appears to demonstrate that an ownership change without reforms in market structure can also result in significant efficiency gains.

**Case study 5: MRT 3 PROJECT, Manila, Philippines**

*Project Description*

Epifanio de los Santos Avenue, commonly known as EDSA, is the most heavily traveled arterial road in Metro Manila, Philippines. The large volume of car and bus traffic creates serious traffic congestion especially during peak hours. To alleviate the worsening traffic condition and air pollution along EDSA, the Metro Rail Transit Line 3 (MRT3), which involved the design and construction of civil and electro-mechanical structure and associated components along EDSA, was built under the Build-Lease-Transfer (BLT) scheme by a private sector consortium.

The 16.9-km MRT3, which started operations in December 1999, has a total of 13 stations extending from North Avenue in Quezon City to Taft Avenue in Pasay City. The North Avenue to Buendia segment was completed in December 1999 while the Buendia to Taft Avenue segment was completed in July 2000.

*Legal/Contractual/Partnership Arrangements*

On 7 November 1991, the Department of Transportation and Communication (DOTC) and EDSA LRT Corporation Limited, which changed its name to Metro Rail Transit Corp. Limited (MRTC) on 28 December 1995, entered into and executed an Agreement to Build, Lease and Transfer a Light Rail Transit System along EDSA. Under the said BLT Agreement, MRTC, a private sector consortium of Filipino-owned companies, is responsible for the design, construction, testing, commissioning and maintaining the system. Upon completion, MRTC is obligated to lease the system for 25 years to the DOTC, who will operate the system, with MRTC (through Sumitomo) providing the maintenance. At the end of the 25-year lease period, the ownership of the system will be transferred to the government.

*Financing*

The MRT consortium and its partner put up US$ 190 million in equity and US$ 465 million in loans from several foreign and local banks to cover the US$ 655 million project cost.

*Other Responsibilities and Obligations of the Philippine Government*

The government’s responsibilities and obligations included the following:

- Payment of all real estate taxes assessed on the Project Site and on the buildings and other improvements thereon, except those assessed on the commercial development, which shall be for the account of Metro Rail or the assignees of the Development Rights, as the case may be;
• Provision of peaceful possession and use of and necessary access to the Project Site;
• Relocation, as and when necessary, of any utilities, including utility lines and piping, the relocation of which is necessary because of a physical conflict of the work in order for Metro Rail to perform the work in accordance with the Project Scope and Work Schedule;
• Provision of assistance to Metro Rail in ensuring that where and when necessary there is installed and connected a power transmission line from the outgoing gantry of the switching facility within the Depot boundary and in ensuring that power is obtained at electric substations used for the Project; and
• Arrangement of all traffic rerouting and other traffic management measures in accordance with the Work Schedule.

Other Responsibilities and Obligations of the Proponent

The proponent’s other responsibilities and obligations included the following:
• Provision of all light rail vehicles (LRVs), equipment, communication/signaling cables, other necessary equipment and spare parts, and perform all necessary civil works, including the laying of tracks and the construction of the stations, the electric substations, the depot and other facilities, required for a complete operational rail transit system;
• Importation and transport of equipment to the project site, obtaining permits for building and construction works, and visas and work permits for foreign personnel, the recruitment of local labor and compliance with applicable laws; and
• Cause the award of subcontracts to Philippine contractors and suppliers of materials and services, provided that, in Metro Rail’s opinion, the quality, delivery times, costs, reliability and other terms are comparable to those offered by foreign contractors or suppliers.

Source: BLT Agreement for the MRT3 Project
Department of Transportation and Communications (DOTC) website

Case study 6: The Mandaluyong market, Philippines

The main market of the city of Mandaluyong in Metro Manila was destroyed by a fire in 1991. The city government wanted to rebuild the market taking advantage of the new BOT Law in the country and became the first local government in the Philippines to do so. The winning bid for the Peso 300 million seven-storey market project came from Macro Founders and developers, Inc, a business consortium formed for this project. The bidder was awarded a BOT concession for 40 years to build, operate and manage the market. After the expiry of the concession period, the property would be handed back to the local government. The local government does not share any revenue generated by the project.

A number of commercial banks had provided short-term loans for the project. A long-term loan was provided by the Asian Financing and Investment Corporation (AFIC), a subsidiary of the Asian Development Bank. Macro Founders was able to negotiate with AFIC for a 10-year loan at concession rate. The project's financing structure was as follows: equity, 25 per cent; advances from shops, 25 per cent; debt, 50 per cent. Most of the project risks were taken by the concessionaire.
The building of a new public market and shopping mall has benefited the community as a whole by providing long-term employment opportunities to locals, as well as improving living standards in this and neighbouring communities due to a new sewage facility.

**Case study 7: The North Luzon Expressway (NLEX) project, Philippines**

The project involved the rehabilitation, expansion, operation and maintenance of an existing 84 km road that connected Metro Manila to central Luzon. The Toll Regulatory Board of the Philippines awarded the 30-year toll road concession to Manila North Tollways Corporation (MNTC) on a rehabilitate-build-operate-transfer basis. It is a 4- to 8-lane divided highway completed on time and within budget and started operation in 2005. Currently, about 150,000 vehicles use the toll road.

MNTC, the project company, is a joint venture of four companies namely, First Philippine Infrastructure Development Corporation, Philippine National Construction Corporation, Egis S.A. of France, and Leighton Asia Ltd. of Australia. The project had a value of US$ 384 million, of which the four companies together had a total equity contribution of US$ 116.9 million. The debt finance was raised on a limited recourse basis from international commercial banks, multilateral financing institutions and bilateral agencies. The Asian Development Bank, EFIC, IFC and commercial banks provided US$ 252.2 million as debt and the rest US$ 14.9 million came as subordinate date. The financing structure of the project is shown in figure 14. The debts provided by the commercial banks (US$ 106.8 million) were guaranteed under the credit guarantee programmes of the ADB, MIGA and Coface.

The basic terms of the contract included the following:

- MNTC would mobilise the necessary funding on its own without government financial guarantee;
- MNTC would build the tollway and bear the full construction risk;
- MNTC would operate, manage and maintain the toll road for 30 years without any funding support from the Government;
- The project roads are owned by the Government;
- The concessionaire (MNTC) would bear the full commercial risks, and if revenues are not sufficient, the Government would not bail out MNTC; and
- MNTC would collect tolls at the authorized toll rates and the approval adjustment formula to recover the project investment.

Obligations of the concessionaire:

- Rebuild, modernize and operate the tollroad according to specified standards and levels of service;
- Raise financing without government guarantee;
- Complete the construction within the time required;
- Maintain the roadway and the toll collection system properly; and
- Return the toll road to the government at no cost.
Obligations of the government:

- Provide right-of-way at government cost;
- Issue all permits, licenses and approvals;
- Implement the agreed toll rates;
- Recognize lenders’ step in rights;
- Compensate MNTC if it decides to withdraw unilaterally; and
- Compensate MNTC if government fails to implement the agreed toll rate formula.

The toll rates are set by the government for each class of vehicles and are adjusted every two years according to an agreed formula. An adjustment index is calculated based on changes in the following items:

1. The total amount of outstanding debt to finance the project;
2. The rates of inflation in both the Philippines and the U.S.; and
3. The peso/dollar exchange rate.

The existing rates are multiplied by the rate adjustment index to establish the new toll rates for each class of vehicles. The tollway is divided in two major sections for the convenience of toll collection. The open section within the Metro Manila region charges a flat charge based on vehicle class. The rest of the system is the closed system where toll is distance-based. Charging is based on class of vehicle and distance travelled.

![Financing of the Project](image)

Debt finance was raised on a limited recourse basis from international commercial banks, multilateral financial institutions, and bilateral agencies.

* Funded by commercial banks, totalling 106.8. The guarantees cover political risks only.

Note: The case study was developed based on a presentation made by Alfredo E. Pascual of the Asian Development Bank at a seminar organized by the Asian Development Bank Institute on 19-22 November, Tokyo, Japan, and on information from other sources.

Figure 14. Financing arrangement for the North Luzon Expressway Project, Philippines
Appendix 1. PPP IMPLEMENTATION PROCESS


Figure 15. The PPP project development and implementation process followed by Partnership Victoria in the State of Victoria, Australia
Appendix 2. RISK MATRIX

The following risk matrix has been reproduced with permission from Partnership Victoria, the State of Victoria in Australia. Though it is set up from the perspective of the government, it provides an example of how risk can be identified, assessed, and mitigated.

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Description</th>
<th>Consequence</th>
<th>Mitigation</th>
<th>Preferred Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rates pre-completion</td>
<td>The risk that prior to completion interests rates move adversely thereby undermining the bid pricing</td>
<td>Increased project cost</td>
<td>Interest rate hedging may occur including under Project Development Agreement</td>
<td>Government may assume or share</td>
</tr>
<tr>
<td>Sponsor Risk</td>
<td>Risk that the private party is unable to provide the required services or becomes insolvent or is later found to be an improper person for involvement in the provision of these services or financial demands on the private party or its sponsors exceed its or their financial capacity causing corporate failure</td>
<td>Cessation of service to government and possible loss of investment for equity providers</td>
<td>Ensure project is financially remote from external financial liabilities, ensure adequacy of finances under loan facilities or sponsor commitments supported by performance guarantees; also through the use of non financial evaluation criteria and due diligence on private parties (and their sponsors)</td>
<td>Government</td>
</tr>
<tr>
<td>Financing Unavailable</td>
<td>Risk that when debt and/or equity is required by the private party for the project it is not available then and in the amounts and on the conditions anticipated</td>
<td>No funding to progress or complete construction</td>
<td>Government requires all bids to have fully documented financial commitments with minimal and easily achievable conditionality</td>
<td>Private Party</td>
</tr>
<tr>
<td>Further Finance</td>
<td>Risk that by reason of a change in law, policy or other event additional funding is needed to rebuild, alter, re-equip, etc. the facility which cannot be obtained by the private party</td>
<td>No funding available to complete further works required by government</td>
<td>Private party must assume best endeavours obligation to fund at agreed rate of return with option on government to pay by way of uplift in the services charge over the balance of the term or by a separate capital expenditure payment; government to satisfy itself as to likelihood of this need arising, its likely critically if it does arise, and as to financial capacity of private party to provide required funds and (if appropriate) budget allocation if government itself is required to fund it.</td>
<td>Government takes the risk that private finance is unavailable</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>Change in Ownership</td>
<td>Risk that a change in ownership or control of private party results in a weakening in its financial standing or support or other detriment to the project</td>
<td>Government assurance of the financial robustness of the private party may be diminished and, depending on the type of project, probity and other non-financial risks may arise from a change in ownership or control, which may be unacceptable to government.</td>
<td>Government requirement for its consent prior to any change in control. (Private party will seek to limit this control to circumstances where substantive issues are of concern such as financial capacity and probity).</td>
<td>Government risk as to the adverse consequence of a change if it occurs; private party risk that its commercial objectives may be inhibited by a restrictive requirement for government consent to a change</td>
</tr>
<tr>
<td>Tax Changes</td>
<td>Risk that before or after completion the tax imposed on the private party, its assets, or on the project will change</td>
<td>Negative effect on the private party’s financial returns and in extreme cases, it may undermine the financial structure of the project so that it cannot proceed in that form</td>
<td>Financial returns of the private party should be sufficient to withstand such change; with respect to specific infrastructure taxation particularly that relating to transactions with government, the private party should obtain a private tax ruling.</td>
<td>Private party</td>
</tr>
</tbody>
</table>