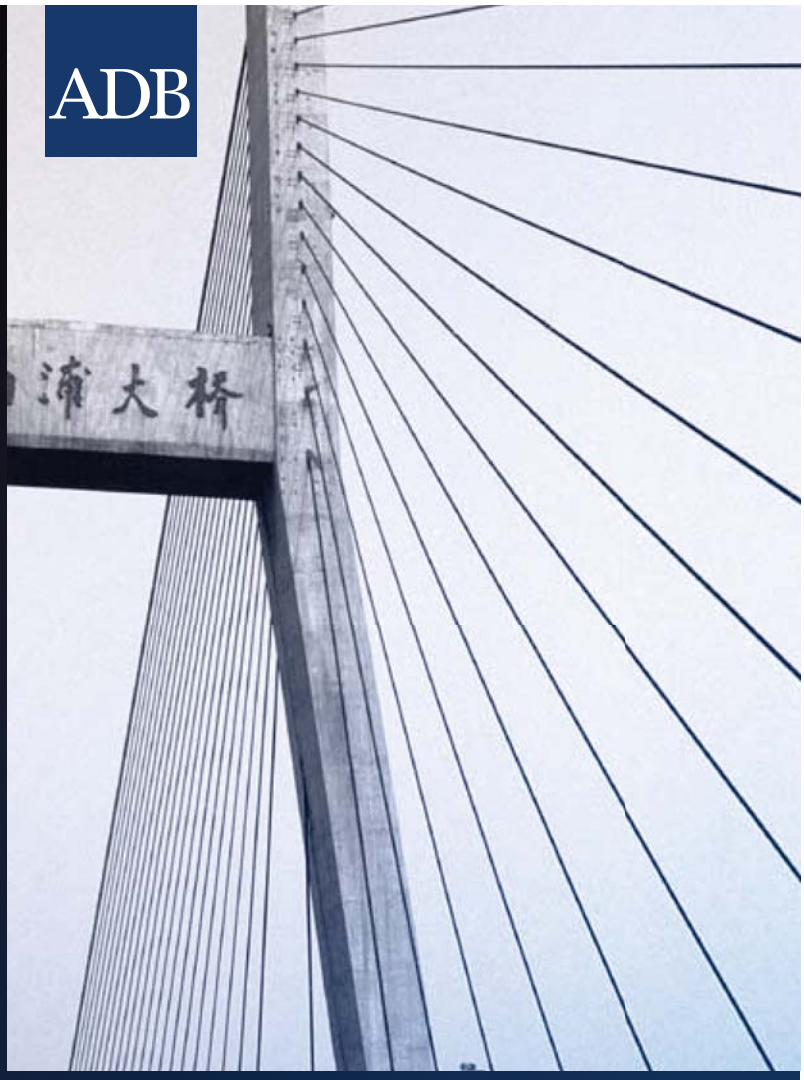

Public-Private Partnership Handbook

Asian Development Bank

Acknowledgments

The Handbook was initially drafted by Klaus Felsinger, a former staff member of the Asian Development Bank's (ADB) Regional and Sustainable Development Department (RSDD), Special Initiative Group (RSOD-SI) and a member of the Innovation and Efficiency Initiative (IEI) Team, under the direct supervision of Juan Miranda, Director General of Central and West Asia Department (CWRD) and Head of the IEI Team. Heather Skilling and Kathleen Booth carried out research and compiled and elaborated on the information. The Handbook further benefited from relevant comments contributed by ADB staff through review of drafts. Elsie Araneta, Maria Anna Birken, Sally Pedersen, and Stephen Edwards provided helpful advice and information. Ian Woodward contributed valuable information and editorial commentary. Virginia Herrera, Majella Canzon, and Aldwin Sutarez provided their best support at the pre-publication stage. Finally, Nariman Mannapbekov of RSOD-SI painstakingly completed this Handbook.

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Acronyms

ADB	Asian Development Bank
BOO	build–own–operate
BOOT	build–own–operate–transfer
BOT	build–operate–transfer
CBO	community-based organization
IFC	International Finance Corporation
IFI	international financial institution
LIG	low-income group
NGO	nongovernment organization
OBA	output-based aid
ODA	official development assistance
PIU	project implementation unit
PPIAF	Public–Private Infrastructure Advisory Facility
PPP	public–private partnership
PRC	People's Republic of China
PSP	private sector participation

Note

In this handbook, "$" refers to US dollars.

Introduction

This Public–Private Partnership (PPP) Handbook is designed for the staff of the Asian Development Bank (ADB) and its developing member countries' clients. It provides an overview of the role, design, structure, and execution of PPPs for infrastructure development.

With inputs from policy and transaction specialists, this handbook addresses a range of matters associated with PPPs, from policy considerations to implementation issues. Each of the 10 chapters focuses on a specific area of information about PPPs:

- Chapter 1: introduces and defines PPPs and their context within infrastructure and development finance.
- Chapter 2: gives examples of evolving PPP experience within various infrastructure sectors.
- Chapter 3: describes the activities required to diagnose and plan for a PPP.
- Chapter 4: provides an overview of the major types of PPP from management and service contracts to concessions and build–operate–transfer arrangements.
- Chapter 5: examines the issues associated with choosing the appropriate PPP structure for a project.
- Chapter 6: describes key tasks associated with designing and preparing a PPP project that will attract bidders.
- Chapter 7: covers the implementation of a PPP including bidder involvement and selection, the procurement process, due diligence, and contracting.
- Chapter 8: relates "pro-poor growth" criteria to PPP design and implementation.
- Chapter 9: highlights the monitoring and evaluation requirements of PPP projects.
- Chapter 10: includes additional resources for PPP practitioners including access points for information on PPP policy, design, and implementation issues.

This handbook is meant as an introduction or primer to the design and execution of PPP strategies and projects in the context of development finance.

1 Public–Private Partnerships (PPPs)—An Overview

This chapter introduces the concept of the public–private partnerships or PPPs, as well as its key characteristics and rationale.

1.1 Defining Public–Private Partnerships

The term "public–private partnership" describes a range of possible relationships among public and private entities in the context of infrastructure and other services. Other terms used for this type of activity include private sector participation (PSP) and privatization. While the three terms have often been used interchangeably, there are differences:

- PPPs present a framework that—while engaging the private sector—acknowledge and structure the role for government in ensuring that social obligations are met and successful sector reforms and public investments achieved.

  A strong PPP allocates the tasks, obligations, and risks among the public and private partners in an optimal way. The public partners in a PPP are government entities, including ministries, departments, municipalities, or state-owned enterprises. The private partners can be local or international and may include businesses or investors with technical or financial expertise relevant to the project. Increasingly, PPPs may also include nongovernment organizations (NGOs) and/or community-based organizations (CBOs) who represent stakeholders directly affected by the project.

  Effective PPPs recognize that the public and the private sectors each have certain advantages, relative to the other, in performing specific tasks. The government's contribution to a PPP may take the form of capital for investment (available through tax revenue), a transfer of assets, or other commitments or in-kind contributions that support the partnership. The government also provides social responsibility, environmental awareness, local knowledge, and an ability to mobilize political support. The private sector's role in the partnership is to make use of its expertise in commerce, management, operations, and innovation to run the business efficiently. The private partner may also contribute investment capital depending on the form of contract.

  The structure of the partnership should be designed to allocate risks to the partners who are best able to manage those risks and thus minimize costs while improving performance.

- PSP is a term often used interchangeably with PPPs. However, PSP contracts transfer obligations to the private sector rather than emphasizing the opportunity for partnership. In the mid to the late 1990s, there was a slowdown in public–private contracting in infrastructure sectors, which was largely precipitated by a social backlash against the perceived preference for the private sector over the public sector in delivering infrastructure services in developing countries. To some degree, the social backlash was rooted in confusion between PSP and privatization. Some PSP schemes were overly ambitious and the social agenda was overlooked, leading to legitimate public concerns. The critical analysis of PSP experience has led to the design of a new generation of transactions, which are now more commonly known as PPPs.

- Privatization involves the sale of shares or ownership in a company or the sale of operating assets or services owned by the public sector. Privatization is most common and more widely accepted in sectors that are not traditionally considered public services, such as manufacturing, construction, etc. When privatization occurs in the infrastructure or utilities sectors, it is usually accompanied by sector-specific regulatory arrangements to take account of social and policy concerns related to the sale, and continuing operation of assets used for public services.

Sectors in which PPPs have been completed worldwide include:

- power generation and distribution,
- water and sanitation,
- refuse disposal,
- pipelines,
- hospitals,
- school buildings and teaching facilities,
- stadiums,
- air traffic control,
- prisons,
- railways,
- roads,
- billing and other information technology systems, and
- housing.

1.2 Motivation for Engaging in PPPs

The three main needs that motivate governments to enter into PPPs for infrastructure are:

1. to attract private capital investment (often to either supplement public resources or release them for other public needs);
2. to increase efficiency and use available resources more effectively; and
3. to reform sectors through a reallocation of roles, incentives, and accountability.

Each of these is discussed below.

1.2.1 Mobilization of Private Capital

Governments face an ever-increasing need to find sufficient financing to develop and maintain infrastructure required to support growing populations. Governments are challenged by the demands of increasing urbanization, the rehabilitation requirements of aging infrastructure, the need to expand networks to new populations, and the goal of reaching previously unserved or underserved areas. Furthermore, infrastructure services are often provided at an operating deficit, which is covered only through subsidies, thus constituting an additional drain on public resources.

Combined with most governments' limited financial capacity, these pressures drive a desire to mobilize private sector capital for infrastructure investment. Structured correctly, a PPP may be able to mobilize previously untapped resources from the local, regional, or international private sector which is seeking investment opportunities.

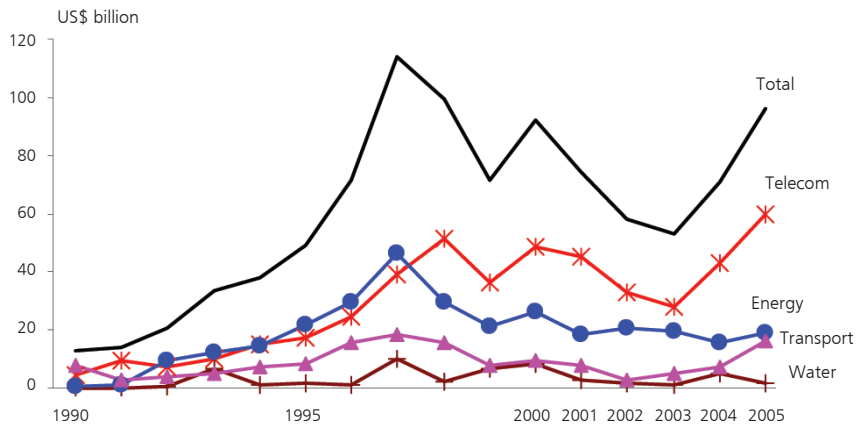
The goal of the private sector in entering into a PPP is to profit from its capacity and experience in managing businesses (utilities in particular). The private sector seeks compensation for its services through fees for services rendered, resulting in an appropriate return on capital invested.

1.2.2 PPP as a Tool for Greater Efficiency

The efficient use of scarce public resources is a critical challenge for governments—and one in which many governments fall far short of goals. The reason is that the public sector typically has few or no incentives for efficiency structured into its organization and processes and is thus poorly positioned to efficiently build and operate infrastructure. Injecting such incentives into an entrenched public sector is difficult, though not impossible, as Singapore has demonstrated by developing a government-wide dedication to efficiency while maintaining many critical services within the public domain.

In 2005, investment commitments to private infrastructure projects in low- and middle-income countries grew by over 30% against 2004 to almost $96 billion.

Figure 1: Investment Commitments in Infrastructure Projects with Private Participation in Developing Countries by Sector, 1990–2005



The World Bank estimates that about 70% of infrastructure investment currently comes from the public sector, 8% from official development assistance, and 22% from the private sector.

Source: http://ppi.worldbank.org/features/sept2006/currentFeatureSept2006.pdf

Private sector operators, however, enter into an investment or contracting opportunity with the clear goal of maximizing profits, which are generated, in large part, by increased efficiency in investment and operations. If the PPP is structured to let the operator pursue this goal, the efficiency of the infrastructure services will likely be enhanced. Improving the efficiency of services and operations also increases the chances that those services are economically sustainable and provided at affordable rates—even after satisfying the profit requirements of the private operators.

PPP allows the government to pass operational roles to efficient private sector operators while retaining and improving focus on core public sector responsibilities, such as regulation and supervision. Properly implemented, this approach should result in a lower aggregate cash outlay for the government, and better and cheaper service to the consumer. This should hold true even if the government continues to bear part of the investment or operational cost since government's cost obligation is likely to be targeted, limited, and structured within a rational overall financing strategy.

1.2.3 PPP as a Catalyst for Broader Sector Reform

Governments sometimes see PPP as a catalyst to provoke the larger discussion of and commitment to a sector reform agenda, of which PPPs are only one component. A key issue is always the restructuring and clarifying of roles within a sector. Specifically, there is a requirement to reexamine and reallocate the roles of policy maker, regulator, and service provider, particularly to mobilize capital and achieve efficiency, as outlined above. A reform program that includes PPP provides an opportunity to reconsider the assignment of sector roles to remove any potential conflicts and to consider a private entity as a possible sector participant.

Implementing a specific PPP transaction often forces concrete reform steps to support the new allocation of sector roles such as the passage of laws and establishment of separate regulatory bodies. In essence, re-examination of the regulatory and policy arrangements is critical to the success of a PPP project.

2 Recent Experience with Infrastructure Privatization and PPPs[1]

Analysis of privatization and PPPs since the 1990s reveals several interesting trends as described in Notes on Public Policy for the Private Sector, developed by The World Bank/ International Finance Corporation, and based on the infrastructure projects tracked in the World Bank's global Private Participation in Infrastructure (PPI) Project Database.

2.1 The Level and Form of Infrastructure Privatization/PPPs from 1990–2004

- **In 2004, investment flows to infrastructure projects with private participation in developing countries grew** for the first time since 2000 to reach $64 billion. However, the analysis shows that the growth was driven by the telecommunications sector which accounted for $45 billion. All developing regions, apart from Sub-Saharan Africa, experienced increased investment in telecommunications. Within the telecommunications sector, independent mobile operators attracted about 50% of sector investment.

- **Proceeds**[2] **from infrastructure privatization** in developing countries grew in recent years, rising from 48% of the total in the 1990s to 55% in 2000–2003.

- **East Asia and the Pacific raised twice as much in privatization proceeds**[3] **in 2000–2003 as in the 1990s ($66 billion from 420 transactions)**. The People's Republic of China (PRC) alone accounted for nearly 90% of the proceeds in the region in 2000–2003, compared with 50% in the 1990s. PRC's stock market offerings in telecommunications and energy made it the top revenue earner among all developing countries in 2000–2003.

- **Greenfield projects accounted for 56% of total investment flows and 60% of projects in 2001–2004.** These are the most common form of privatization/PPP across infrastructure sectors, except in water where concessions are still the preferred form. Greenfield projects are also the most common in developing regions—except in Europe and Central Asia, where divestitures are still preferred.

- **Greenfield projects predominated in developing countries**, particularly in lowest-income countries, based on data for 1990–1999. They constituted 65% of projects in

low-income countries compared with 37% for developing countries, reflecting the low starting base of infrastructure in developing countries.

- After the global slowdown in PPPs in the late 1990s, **preference for low-risk contracts increased**. Management contracts became more common, increasing from 2% of projects in 1990–2000 to 7% in 2001–2004 (based on the World Bank's PPI Project Database). They grew in number in all regions and sectors, but most were for water projects. The share of lease contracts remained at 2% of projects in both periods.

- **Fourteen lease contracts were implemented in 2001–2004**. In contrast, divestitures and concessions declined as a share of both investment flows and projects. Most investment flows to divestitures in 2001–2004 went to projects that had reached financial closure in the 1990s. New divestitures were limited to East Asia and Europe and Central Asia by 2003–2004.

- **Privatization/PPPs have reached nearly all developing countries**, generating more than $400 billion in proceeds in 1990–2003. Activity peaked in 1997 then declined, but was reactivated in 2001. Proceeds are concentrated in a small group of countries. Five countries —Brazil, PRC, India, Poland, and Russian Federation—accounted for more than 40% of proceeds in 1990–2003.

- **Infrastructure** (telecommunications; electricity generation, transmission, and distribution; natural gas transmission and distribution; transport; and water) accounted for half of privatization[4]/PPP proceeds in developing countries in 1990–2003. These sectors were followed by the competitive sectors (manufacturing, services, tourism, and other firms), energy (production of oil and gas, other hydrocarbons, and petrochemicals), finance, and the primary sector (minerals and metals) in terms of revenue generated.

Table 1 summarizes the flow of investment to developing countries both by sector and by region.

This overview of trends focuses on quantifiable outcomes and may not fully represent the additional value of the many PPPs that focus on improved operations and efficiencies, yielding value in a different form than direct and immediate revenue and investment.

2.2 Incorporating Local and Regional Investment Sources[5]

The Public–Private Infrastructure Advisory Facility[6] (PPIAF) has identified developing country investors as an emerging, but major, source of investment finance for infrastructure projects with private participation. For instance in 1998–2004, these investors accounted for more investment finance in transport across developing regions than did investors from developed countries. The local and regional players are also taking on greater managerial and operational roles.

Table 1: Investment in Infrastructure Projects with Private Participation in Developing Countries, by Sector and Region 1995–2004 ($ billion)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sector										
Energy	21.7	30.0	46.3	29.3	21.1	27.4	15.6	19.2	17.6	12.7
Electricity	18.2	27.4	43.3	23.3	18.3	24.9	14.1	10.3	14.7	12.1
Natural Gas	3.6	2.6	3.0	6.1	2.7	2.5	1.5	8.9	2.9	0.6
Telecommunications	17.2	24.6	39.9	51.8	36.1	48.9	45.2	33.0	33.2	45.0
Transport	8.2	15.7	19.4	17.5	8.2	9.1	8.1	3.6	5.0	4.5
Water and Sewage	1.5	1.7	8.4	2.2	6.5	4.8	2.4	2.0	1.4	1.9
Region										
East Asia and Pacific	18.8	28.0	34.9	9.7	13.1	14.3	11.0	9.7	13.0	8.7
Europe and Central Asia	8.1	10.5	14.2	12.1	9.4	25.0	12.3	16.8	12.2	12.5
Latin America and the Caribbean	17.1	25.8	49.3	71.2	37.3	38.7	33.7	19.6	15.8	17.4
Middle East and North Africa	0.1	0.3	5.1	3.1	3.0	4.1	4.4	1.6	6.2	10.9
South Asia	3.8	5.8	6.3	2.3	4.6	4.4	4.6	6.0	3.4	9.6
Sub-Saharan Africa	0.8	1.7	4.3	2.5	4.6	3.7	5.3	4.2	6.5	4.9
Total	**48.7**	**72.1**	**114.1**	**100.9**	**72.0**	**90.2**	**71.3**	**57.8**	**57.0**	**64.1**

Note: Date refers to projects reaching financial closure in 1990–2004. (World Bank and Public–Private Infrastructure Advisory Facility [PPIAF], Private Participation in Infrastructure Project Database.)

Source: Izaguirre, Ada Karina. 2005. Private Infrastructure: Emerging Market Sponsors Dominate Private Flows. *Public Policy for the Private Sector Note* No. 299. Washington, DC: World Bank.

Developing country investors can be anticipated to take on even greater shares of infrastructure investments as developing market capital markets deepen and expand, as the investors/operators develop more expertise, and as governments recognize the advantages (including a better understanding of social, political, and economic risks) of these firms and structure transactions (particularly prequalification and evaluation criteria) to be more inclusive of local participants.

According to PPIAF's analysis, developing country investors contributed more than half the private investment in concessions (54%) in 1998–2004, slightly less than half in greenfield projects (44%), and a smaller share in divestitures (30%). Developing country investors accounted for as much as 52% of the private investment in transport and 46% in telecommunications in 1998–2004, but only about 27% in energy and 19% in water.

South Asia had the largest share of domestic investment at 55% of the region's total investment in 1998–2004. Local investors were also active in East Asia and Pacific, accounting for 42% of private investment in 1998–2004 and acting as the main sponsors in 36% of projects. Telecommunications was again a predominant object of investment (local investors invested 65%) with transport at 48%.

2.3 Incorporating Social Priorities

A further trend of note, discussed in chapter 8, relates to the restructuring of PPPs to be more focused on the requirements of low-income consumers. When a primary goal of developing countries is improved access to infrastructure (as a driver of economic growth) and when a predominant characteristic of these countries is a high incidence of poverty, developing strategies that fit the goal of universal service with the reality of poverty is sensible.

A concrete example of this shift has been the growing incorporation of output-based aid (OBA) strategies to transaction design. OBA strategies design the complementary use of donor and government financing to target social priorities specifically within the framework of a PPP transaction.

3 Structuring a PPP: Sector Diagnostic and Sector Road Map

3.1 Requirements and Expectations

PPPs can follow a variety of structures and contractual formats (which are described in chapter 4). However, all PPPs incorporate three key characteristics:

- a contractual agreement defining the roles and responsibilities of the parties,
- sensible risk-sharing among the public and the private sector partners, and
- financial rewards to the private party commensurate with the achievement of prespecified outputs.

PPP is one tool available to decision makers in reforming infrastructure or service delivery. It is most effective when it is accompanied by other reform activities to underpin and reinforce the PPP and to support sustainable improvement. A successful PPP is designed with careful attention to the context or the enabling environment within which the partnership will be implemented. Where the operating environment can be reformed to be more conducive to the goals of PPP, this should be accomplished. Where elements of the operating context cannot be changed, the PPP design must be tailored to accommodate existing conditions.

Thus, in designing a PPP process and selecting a form of PPP, it is important to consider the reform objectives; policy environment; the legal, regulatory, and institutional frameworks; financing requirements and resources of the sector; and the political constraints and stakeholder concerns. PPP will be an effective tool to address some, but probably not all, sector issues.

To be successful, PPPs must be built upon a sector diagnostic that provides a realistic assessment of the current sector constraints. Specifically, the sector diagnostic will cover:

- technical issues;
- legal, regulatory, and policy frameworks;
- institutional and capacity status; and
- commercial, financial, and economic issues.

The sector diagnostic helps the government assess the status quo, identify gaps and weaknesses, and develop a sector reform strategy or road map, outlining the tools and activities required for reform. In many cases, reliable or comprehensive data on performance are not available in every area, such as financial or technical areas. In those cases, it may be more efficient to focus on the collection of limited, but key, indicators which provide an overview of the overall performance of the sector.

The sector diagnostic is likely to be performed with the support of a team of local and/or international engineers, lawyers, economists, financial analysts, and policy and transaction specialists. The diagnostic is critical to getting the transaction structure right, so allowing sufficient time for the process is important. Depending on the complexity of the sector, the availability of data, and the consultant procurement process, the sector diagnostic can take from 1 to 2 years.

A critical part of the diagnostic is a process of stakeholder consultation and identification of a government champion to drive the process into preparation and implementation.

As a result of the sector diagnostic, the government is able to determine to what degree an enabling environment exists for PPP and what activities are required in advance of PPP to create such an environment. The diagnostic is important to: (i) identify the strengths and weaknesses of the sector and the most promising areas for efficiency increases, (ii) regularly gauge and report on the progress of reform, and (iii) tweak the reform program as needed.

The sector diagnostic leads to development of a road map and a sequence of PPP activities as can be seen in Figure 2, which describes the components of the sector diagnostic.

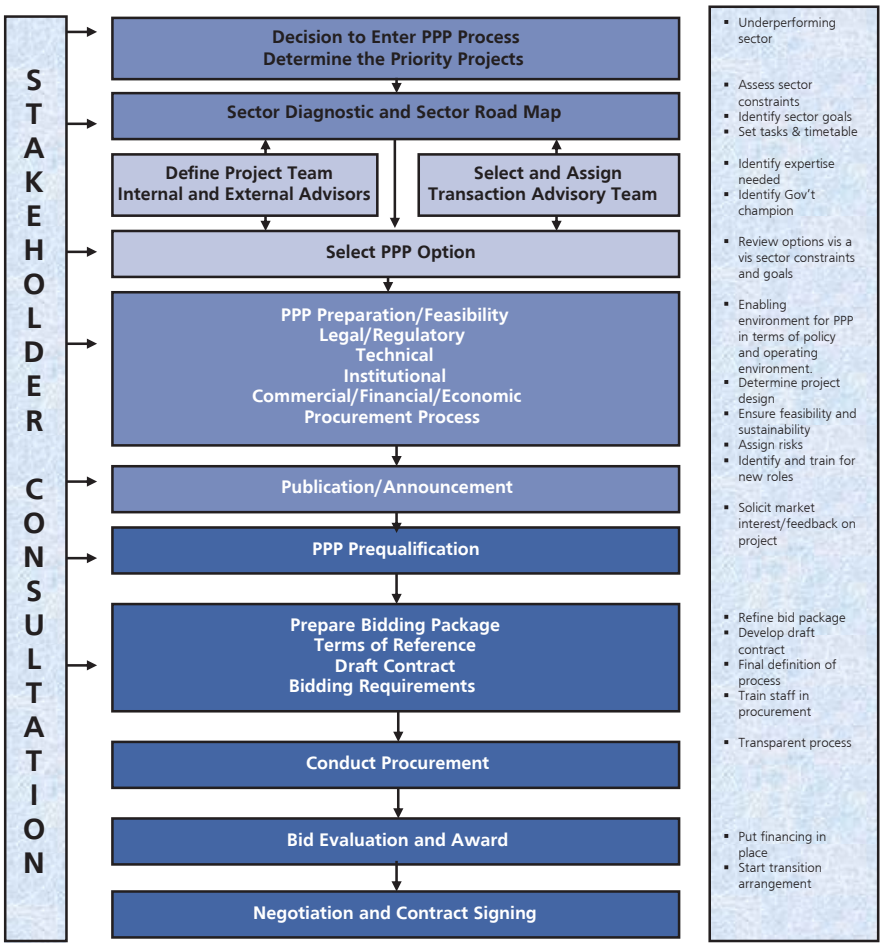
3.2 Technical Issues

Under this stream of analysis, the government should assess current technical constraints in the sector to be reformed (to the extent they are known) including system efficiency, utility operations, and responsiveness to customers. It should determine the degree to which operational issues are a result of underinvestment, poor investment planning, maintenance, ineffective management, lack of operational expertise, or other issues.

Investments underway and investments planned, as well as existing assets, should be catalogued—to the degree that this information is relevant to the reform and can be obtained in a cost-effective manner.

The analysis needs to take into account connectivities, links, and interdependencies of various infrastructure elements (e.g., electricity generation vs. distribution, connectivity of

Figure 2: Generic PPP Project Sequence



Source: Heather Skilling. 2007.

transport modes, validity of tickets/billing across transport modes, technical standards to be followed, etc.).

3.3 Legal, Regulatory, and Policy Frameworks

The diagnostic should cover the existing legal, regulatory, and policy frameworks including:

- applicable laws, and existing regime for assigning authority and setting performance standards;

- oversight arrangements, regulatory bodies, regulations;
- major sector institutions and government entities related to the sector;
- tariff and subsidy policies and arrangements;
- existence and applicability of legally mandated service quality standards;
- natural resource safeguards and management requirements important to sector performance;
- environmental and health regulations;
- relevant labor laws and regulations; and
- limitations on foreign ownership/sector participation, foreign exchange restrictions, and limitations on repatriation of profits, i.e., foreign investment laws.

In particular, the regulatory regime may have to be reformed and/or regulatory bodies created to facilitate a shift from purely government-provided services to the private provision of services.

Enabling legal, regulatory, and policy environments are critical to a sustainable PPP. At a baseline level, a legal environment that can support private sector involvement in critical services is needed. The legal environment has to minimize the likelihood of corruption and must be sufficiently reliable as to encourage private participation and investment. To the degree that the legal and judicial environment is not defined, investors and project participants will see the project as unpredictable and highly risky. See Box 1 for the case in the PRC.

Equally, possible investors must have confidence that the laws and the contract will be respected and can be enforced in the courts or through arbitration, if necessary.

The framework for economic regulation must be equally explicit. This may entail creating an independent regulator, a regulatory unit within a part of government, or another form of regulatory capacity. It can also be effective to embed regulatory principles within the contract and the external capacity required is limited to an effective monitoring capacity and audit of performance outcomes. Highly specific contract terms that establish duties, performance targets, tariff level and structure, rules for changing tariffs, and dispute resolution procedures, allow the private sector to better predict the profitability of the venture and decide what the contract is worth bidding for. The basic principle is that the level of service demanded and the costs of those services must be equitably balanced, while creating incentives for improved efficiencies in the system.

3.4 Institutional Structures and Capacity

PPPs require a range of stakeholders within and outside government to take on new roles or perform existing roles in improved ways. Often, new entities are created, such as regulators

Box 1: Impact of Legal and Regulatory Uncertainty on Build–Own–Transfer Wastewater Schemes in the People's Republic of China

At this stage, the People's Republic of China does not have overarching privatization legislation. Instead, its build–own–transfer (BOT) schemes and other public–private partnership (PPP) reform strategies are governed by a series of government policy papers.

Developing a BOT wastewater scheme is complicated, requiring consideration of issues ranging from land use to the management of water companies, from investment mechanisms to taxation, accounting systems to credit policies of development banks. And the fact that existing policies on land use, taxation, and such considerations are not geared for the sector makes things more difficult.

In the case of the 16 Foshan Wastewater Treatment Plants, over 50% of the projects could not be implemented because they conflict with current land use policies.

Source: Dueñas, Ma. Christina. 2007. *Country Water Action: People's Republic of China, Private Funds for Cleaner Water—BOT Applied in the Chinese Wastewater Sector*. February. This article, written by the Asian Development Bank (ADB), was based on the paper prepared by Lijin Zhong from Tsinghua University's Department of Environmental Science and Engineering and Tao Fu from Wageningen University's Environmental Policy Group.

or PPP units, to manage the process. Government must ask a series of key questions to understand the institutional requirements of the reform strategy. These questions might include:

- Are the institutional and legislative frameworks in place to support sector improvement and PPP, in particular? What are the impediments according to the ministry, users, and utility?
- Do the level of autonomy and accountability of stakeholders match their proposed obligations?
- Are the relevant levels of government prepared to relinquish or revise their roles?
- Are the relevant levels of government prepared to delegate some control to private partners within defined policy and regulatory parameters?
- Does each institution have the funding, staff, training, and equipment required to discharge its functions?
- Does each institution understand its role and know how to develop the procedures for accomplishing this role?
- Is there a key stakeholder—i.e., a champion—with the capacity and the political will to lead and drive the reform agenda forward?

These institutional roles must be clarified at the latest by the time the PPP process is complete. However, the greater the degree of uncertainty about institutional roles during the PPP process, the higher the level of perceptive risk is likely for potential investors. At the same time,

there must be some flexibility to refine and update institutional roles as the sector evolves and matures. Increasingly, as decentralization takes root, governments have the additional burden of determining at what level of government each role is best performed.

In the institutional analysis, it is important not to overlook the capacity to support bidding, negotiation, and contract compliance and monitoring. Governments may have unrealistic expectations of the ability of their own organizations in that respect. The stages of the procurement process are discussed in detail in chapter 7.

3.5 Commercial, Financial, and Economic Issues[7]

As part of the diagnostic assessment, the current commercial, financial, and economic arrangements and outcomes of the sector should be understood and assessed. This understanding of the current scenario informs decisions about the desired sector outcomes and how these might be achieved.

Commercial considerations relate to the business orientation of the infrastructure service provider which may become a partner in the PPP. In preparation to a PPP, preliminary improvements to the billing system, customer database, the status of receivables, and funding arrangements may be necessary. These may be needed to understand fully or to improve the financial position of the service provider prior to entering into a PPP.

Financial considerations relate to the design of detailed and realistic pricing (including customer tariffs, off-take agreements, etc.) strategies. The objective is to provide affordable services, encouraging use, while providing the private partner with revenue sufficient for commercially viable operations. Sometimes, the government's provision of financial support through investment contributions or other forms of "viability gap" support or even ongoing subsidies can achieve this balance.

A key tool to support the analysis is a financial model. To develop a financial model, the modeler has to review available data, ensure that consistent assumptions support all inputs to the model, identify key points of sensitivity, and continually challenge and update critical assumptions and results through ongoing review as the transaction develops.

1. The first step in financial analysis and modeling is the collection and analysis of historical data, including financial as well as organizational (e.g., employment levels), operational (e.g., volumes produced and invoiced), and technical (e.g., types and capacities of operational assets) information. Data required would include:

- audited financial statements as well as any current financial reports (unaudited) and plans/budgets;

- tariff schedules—historical and current;
- employees—numbers and types (e.g., operating, administrative, permanent, contract)
- database of customers;
- debt schedule and cost of capital;
- schedule of operating assets (information regarding production capacities, historical production volumes, operating costs); and
- details of any ongoing and planned capital investment programs.

2. In addition to sector-specific data, gathering critical macroeconomic (e.g., inflation rates, historical gross domestic product, exchange rates, and interest rates) and demographic (population growth rates) information is important. These macroeconomic and demographic data are needed to project such key elements as demand, required tariff adjustments, operating costs, revenues, investments, and debt service.

3. Financial model structure. The financial model is generally constructed in a standard spreadsheet program (such as Excel) and includes worksheets for the following:

- Inputs and assumptions such as:
  - economic data (inflation, tax levels, etc.);
  - construction data (construction costs and investments coming on stream over time, etc.);
  - ongoing capital expenditure (both maintenance and growth related);
  - funding levels and types (equity, credits, bonds, subsidies, etc.);
  - financial data (such as the terms of the financing instruments); and
  - operational data (operational cost, demand forecasts, toll rate, transfer prices, etc.).
- Sheets with cash-flow statement, profit and loss account, and balance sheet of the project company.
- Results and summary sheets. These sheets demonstrate the results on the project's cash flow of different assumptions. These results are typically illustrated in the form of financial indicators such as:

  Project Internal Rate of Return (or Project IRR)

  This represents the return of the project regardless of the financing structure. The project's internal rate of return (r) is calculated from the following equation:

$$\sum \frac{Ri - Ii - Ci}{(1 + r)^i} = 0$$

  Where:
  - Ri is the operating revenue at year i.
  - Ii is the amount invested at year i.
  - Ci is the operating cost at year i.

An attractive IRR would be high, preferably above 7–8% in real terms, depending on countries and financial markets. (An appropriate IRR, in real terms—which takes into account country- and sector- or industry-specific factors as well as risk expectations—should be achieved. For many potential investors in a PPP, an Equity or Geared IRR will be used to assess their own investment case).

Return on Equity (or Project ROE)
This calculation shows the return to shareholders who receive dividends. The IRR (r) on equity is calculated according to the following equation:

$$\sum \frac{Di - Ii}{(1+r)^i} = 0$$

Where:
- Di is the dividend at year i.
- Ii is the amount invested by the shareholders at year i.

The project is profitable for the shareholders when r is high.

Annual Debt Service Coverage Ratio (ADSCR)
This represents, for any operating year, the ability of the project company to repay debt. This ratio is calculated as follows:

$$ADSCRi = \frac{CBDSi}{DSi}$$

Where:
- CBDSi is the cash flow before debt service at year i (the cash remaining in the project company after operating costs and taxes are paid).
- DSi is the debt service remaining at year i (principal and interests).

The project may be considered viable for lenders when ADSCR is greater than one for every year of the project life. This means that if project revenue is below what was forecast in the financial model at year i, the project company should still be able to repay debt. Generally, the minimum ADSCR should be greater than 1.1 or 1.2.

Loan Life Debt Service Cover Ratio (LLCR)
This ratio shows, for any one operating year, the ability of the project company to accommodate an occasional shortfall of cash, leading to its inability to repay the debt during the last years of the project. This ratio is calculated as:

$$LLCRi = \frac{NPV\ (CBDSi \rightarrow end)}{DSi \rightarrow end}$$

Where:

- NPV(CBDSi-end) is the net present value of the cash flow before debt service from year i to the end of the debt repayment period.
- DSi-end is the total of debt service remaining at year i (principal and interests).

The project is estimated viable for the lenders when the LLCR is high for every year of the project life. This means that the project company should be able to repay the debt despite a period of cash shortfall.

Net Present Value (NPV) of Subsidies

If a project is subsidized over several years, the net present value of these payments gives the real amount of subsidies as if they were paid in a lump sum at present year, neutralizing the effects of inflation. Calculating an NPV requires a parameter called "actualization rate" or discount rate, which has a considerable effect on the result. The actualization rate must be chosen carefully.

4. Uses of the Financial Model: The financial model simulates the financial results of the project by demonstrating anticipated cash flow under different scenarios. The model reflects assumptions made about risks (and the associated cost of capital) and allocation of risks. It enables decision makers to make informed choices about the project structure and the operating environment, including the impact of different tariff (price) and subsidy levels and different coverage targets. The information yielded by a financial model allows decision makers to understand how lenders, partners, and consumers may perceive the project.

The model can simulate overruns in construction costs, changes in operating costs, changes in projected demand, or changes in inflation or interest rates. The financial model is used throughout the PPP process (see chart on the PPP project sequence) to continually assess the impact of different pricing, financing, and service scenarios; and to update or ratify decisions about project structure.

The financial model is also used frequently to evaluate proposals made by potential private partners and can be used to monitor performance once the project is underway.

The model should be accompanied by a manual that sets out the structure and how to use the model, and lists the assumptions used in the model.

Economic considerations relate to the overall cost/benefit analysis of the proposed PPP and its projected impact on the sector. While this analysis begins in the diagnostic stage, it continues throughout the PPP process as an iterative analysis of the PPP structure as it evolves.

There should be analysis of the financial flows within the sector, the financing gaps, and the commercial results. Where the sector is falling short of government and consumer expectations, an agreement should be reached to establish realistic financial expectations of stakeholders.

Relevant questions in diagnosing the issues and strategy for the sector include:

- To improve the financial health of the sector, is the immediate priority to increase operational efficiency or to attract funding?
- Does the government commit to recover costs in the sector? Is government prepared to allow tariffs to increase to achieve this, or is financing available for subsidies?
- How is cost recovery to be defined and over what time line is it to be achieved?
- Is the sector willing and able to provide subsidy to the consumer or operator for a certain period?
- Is it confirmed that consumers are willing and/or able to pay more?
- Is there a fundamental flaw in the tariff structure and levels that needs to be addressed?
- Are tariffs being adjusted prior to PPP?
- Are the commercial procedures in the sector prudent (i.e., is there an accurate customer database? Are bills correct and timely? Are bills easily understood and promptly paid? Are illegal connections/theft a problem?)

This analysis pinpoints the critical constraints to creating a financially sustainable sector and helps identify the activities and interventions that might be required to remove those constraints.

3.6 Stakeholder Consultation

Despite the long experience with PPPs, they remain controversial among a range of stakeholders. This is partly attributable to the diverse range of stakeholders involved in the process and the difficulty in reconciling their interests and concerns. In addition, too often the stakeholders have not been properly consulted or engaged in the process. Consultation is increasingly seen as important for several reasons:

- Inadequate consultation or communication with stakeholders increases the danger of opposition, potentially late in the process, leading to delays or even cancellation.
- Furthermore, the stakeholders are critical to the sustainability of a PPP. Even if the contract is awarded despite opposition, the difficulty and risk of the project increase drastically if public support is not present.
- Stakeholders provide valuable input to the design and practicality of an approach. Allowing stakeholders to comment on PPP strategies allows for a sense of buy-in and can lead to innovative approaches.

- Broad public support and understanding of the reform agenda encourage politicians to stay committed.
- Dissemination of information leads to increased credibility of project partners.

Despite these compelling reasons, some governments see risk in public consultation either through the danger of raising expectations that may not be met, through losing control of the flow of information, through the danger of being unable to reconcile differences, or because information might fuel opposition. These risks are easily outweighed by the benefits of communication and the crucial role it plays in building support for, and understanding of, PPP.

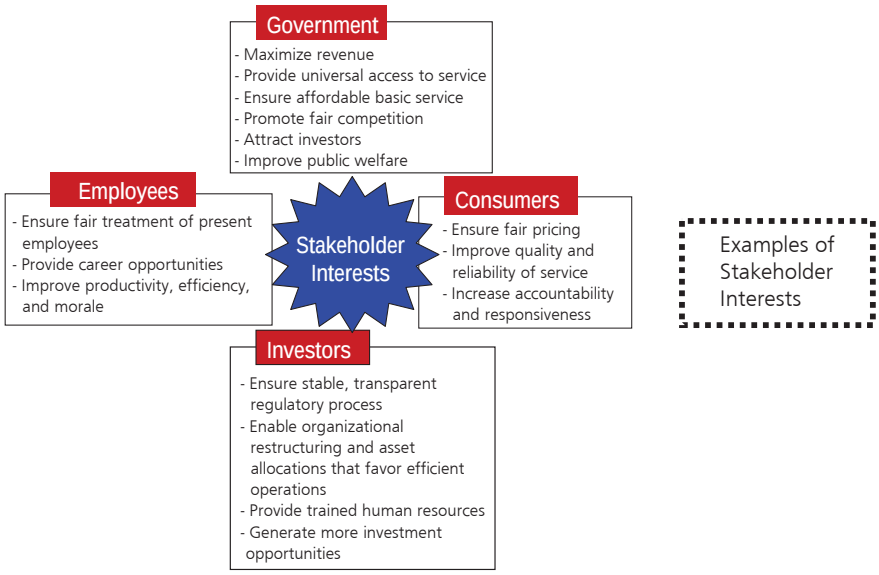
Each role is critical, yet specific stakeholders will have different interests that influence how they approach their role. There must be a consultation process to reconcile and prioritize issues, leading to broad agreement on the objectives of PPP. Table 2 lists the roles of the PPP process stakeholders and Figure 3 illustrates their interests.

Table 2: Role of Different Stakeholders in the PPP Process

Stakeholder	Role
Political decision makers	Establish and prioritize goals and objectives of PPP and communicate these to the public Approve decision criteria for selecting preferred PPP option Approve recommended PPP option Approve regulatory and legal frameworks
Company management and staff	Identify company-specific needs and goals of PPP Provide company-specific data Assist in marketing and due diligence process Implement change
Consumers	Communicate ability and willingness to pay for service Express priorities for quality and level of service Identify existing strengths and weaknesses in service
Investors	Provide feedback on attractiveness of various PPP options Follow rules and procedures of competitive bidding process Perform thorough due diligence resulting in competitive and realistic bidding
Strategic consultants	Provide unbiased evaluation of options for PPP Review existing framework and propose reforms Act as facilitator for cooperation among stakeholders

Source: Heather Skilling and Kathleen Booth. 2007.

Figure 3: The Range of Stakeholder Interests in PPPs



Source: Heather Skilling and Kathleen Booth.2007.

For stakeholders to play an active role in the PPP process, they must be given not only a forum for participation but also the information they need to participate effectively.

The appropriate forum to communicate and build support for PPP is through an iterative dialogue with stakeholders. Each communications program must be tailored to the local context and PPP, but would include some or all the components below:

- **Opinion research**: Opinion research gathers data on stakeholders, their perceptions, and behaviors with respect to the issues concerning a specific PPP. The research influences the content and media of the communications program as well as the reforms themselves. The research is conducted on a relatively formal basis through questionnaires, polling, etc.
- **Stakeholder consultation**: Consultation is a less formal process through which themes and policies of interest are discussed within or across stakeholder groups. It is intended to gather information and build an understanding among the reformers as to current perceptions and understanding and the basis of those opinions. A key part of stakeholder consultation is to manage expectations with respect to how feedback will be incorporated into the reform process; that is, the feedback may not translate into direct change in the PPP design or process but will be one stream of influence. This might be accomplished through focus groups or stakeholder discussion groups.

- **Public awareness**: Public awareness efforts are aimed at a broad range of stakeholders and designed to increase general awareness of an issue. This is a proactive distribution of information that will help inform public reaction to PPP. This might be done through TV, radio, town meetings, and newspapers. See Box 2 as an example.
- **Public education**: Public education is the process of providing stakeholders with the tools and information required to increase understanding of an issue or to take on a new role. This is a more specific and detailed program than public awareness.

Communication activities have to begin early in the process and continue through to closure and even during implementation. The project structure should incorporate mechanisms to ensure ongoing communication with the public and customers.

The communication program associated with PPP has to occur not only at all stages of PPP, but on several levels: at the policy or key decision-makers' level, the level of the enterprise, among the stakeholders specifically affected by a PPP, and among the public at large as needed.

Box 2: Promoting Transparency—The Case of Manila Water (Philippines)

To build support for introducing Private Participation in Infrastructure (PPI) in water and wastewater services in Metro Manila, the Government of the Philippines embarked on a comprehensive strategic communications program that included among its objectives the promotion of transparency in the PPI transaction. To educate the public on the measures being taken to ensure transparent procurement, the Government launched a media campaign months before the bidding process to explain the process and the precautions being taken. Because public procurements in the Philippines are commonly subject to protests, congressional inquiries, and graft investigations, the media campaign focused strongly on the elaborate security measures used to protect the integrity of the bids. In addition, it highlighted the objective nature of the evaluation process, which did not award points for the quality of the technical approach. To ensure that media was informed about the bid process, the Government also prepared a video presentation regarding the rules for bidding and the procedure for opening bids, which was open to the public.

The high-profile communications and public relations efforts of the Government resulted in strong media coverage of the bid process. It did not produce the controversy or opposition experienced during prior public procurements. The Philippine Government attributes the project's success largely to the design of a transparent procurement process and to the perception among stakeholders (developed because of the media campaign) that the process was transparent.

Source: Dumol, Mark. 2000. *The Manila Water Concession: A Key Government Official's Diary of the World's Largest Water Privatization.* Washington, DC: World Bank.

3.7 Clear Sector Strategy and Road Map

The diagnostic assessment of the sector yields information to develop and inform targeted, specific, and realistic sector strategy and road map to achieve improvements, through PPPs and other interventions. The strategy and road map provide clarity and certainty about the operating environment to private sector operators—a prerequisite for sizable investments and long payback periods inherent in infrastructure projects. Sector strategies may rely on breaking down service functions, e.g., between power generation and distribution—resulting in complex linkages that need to be defined before a PPP can realistically be implemented.

The resulting comprehensive sector strategy and road map will set out the initial timetable and action plan for:

- strategic planning,
- organizing and managing the process,
- collecting additional information,
- defining objectives,
- resolving constraints,
- defining scope,
- selecting options,
- identifying partners,
- financing for investment,
- cost recovery strategy,
- regulatory strategy,
- finalizing the terms of the partnership,
- tendering and procurement,
- negotiating and contracting,
- managing the contract,
- monitoring and evaluation,
- managing disputes, and
- managing transitions.

Using the results of the analysis outlined in sections 3.1–3.5, the PPP road map will more specifically describe the high-level action plan for:

- Technical
  - defining and documenting the desired technical outcomes of the partnerships,
  - defining the correct metrics for measuring improvement,
  - defining the necessary investments for achieving improvement,
  - developing the procurement plan and process for achieving the investments, and
  - defining and documenting the expected improvements which do not require major investment.

- Legal, regulatory, and policy frameworks
  - creating a policy framework for PPP activity and regulation;
  - establishing a process to make the legal reforms needed to reduce impediments to improved/expanded service such as assignment of responsibility for development, control, financing, regulating, and managing infrastructure assets;
  - establishing a process to make any realistic legal reforms needed to overcome potential constraints to PPP including limits on assets ownership or management, repatriation of resources, and barriers to cost recovery;
  - establishing a process to enact the regulatory requirements of the PPP including monitoring of service obligations, compliance with service conditions, consumer protection, tariff regulation, and asset management;
  - developing a PPP process that is consistent with the legal and regulatory regime; and
  - developing PPP legislation that seeks to address perceived gaps in the legal and regulatory frameworks.

- Institutional and capacity status
  - assigning the appropriate level of authority to each institution in the sector;
  - creating new institutions such as regulators, which might be required;
  - educating each institution on new roles and training staff to perform new functions;
  - developing the manuals, procedures, standards, and other tools required to implement new functions; and
  - providing technical assistance for transition periods.

- Commercial, financial, and economic issues
  - agreeing with stakeholders on the economic balance of costs and benefits to be achieved in sector reform,
  - designing a PPP plan to achieve these sector results, and
  - developing a financing plan for PPP that is realistic for the market and is commercially viable and sustainable.

The road map provides the context, sets out how a proposed PPP is expected to help achieve sector goals, and describes the steps to be taken to prepare for and implement PPP. A well-defined road map and a well-managed process provide a degree of certainty and reassurance to all participants. The road map and PPP process will incorporate a timetable that should be adhered to as closely as possible. Decision makers and participants must be made aware of key dates and milestones. The PPP process as implemented against the road map is described in the subsequent chapters.

The road map and the activities it encompasses must be subject to continual updating. As the transaction evolves and is further defined, the specific requirements for implementation become clearer and required activities can be outlined in detail.

3.8 Clear Government Commitment and a Designated Champion

The private sector will expect government to be a competent partner in discharging its obligations in terms of policy and reform planning, project development, and contract oversight. It will also expect that the government has established the appropriate legal and other frameworks to set targets, monitor progress, evaluate progress, report progress, enforce the contract provisions, and handle disputes. A detailed road map helps manage expectations in that regard, and allows the actual performance of the government to be monitored and measured.

The government's commitment to the strategy is demonstrated in several ways: through a public statement of the reform strategy and expectations of PPP; through stakeholder consultation and transparency of process; through the provision of adequate funding and support for the process; and through the appointment of a powerful champion, or driver, for the process. The champion is an individual or unit that is accountable for progress, is a focal point for public communication and information, ensures that appropriate attention is given to the main issues, works with various parties to achieve cooperation/ consensus, and leads the government toward decisions. The standing, credibility, and strength of mandate of the PPP champion are strong indications of the true commitment of the government to the PPP project.

Political changes and powerful vested interests can all constrain the PPP process. The government has to set out the case for PPP in a convincing and transparent manner, anticipating concerns and questions. In this way, broader support for PPP can be earned, able to withstand shorter-term political pressures.

Of course, popular support for PPPs is ultimately gained through results—in terms of improved service and reasonable costs. Government has to be seen as advocating the process that will be accountable to the people and provide benefits.

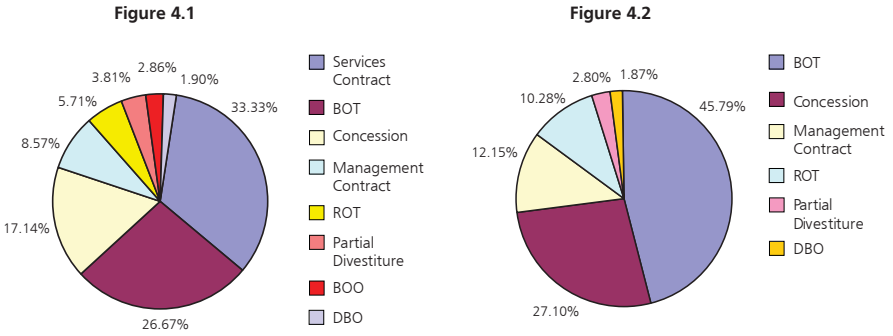
4 Structuring a PPP: Available PPP Options

This chapter discusses the main PPP options available for consideration. Each presents different characteristics to be assessed against the sector reform objectives. The basic PPP contract types are:

- service contracts;
- management contracts;
- affermage or lease contracts;
- build–operate–transfer (BOT) and similar arrangements;
- concessions; and
- joint ventures.

As can be seen in Figure 4, all forms are currently in place in Asia.

Figure 4: Reported Operations Public-Private Partnerships in Asia by Contract Type, Including (4.1) and Excluding (4.2) Service Contract



BOO = build-operate-own, BOT = built-operate-transfer, DBO = design-build-operate, ROT = rehabilitate-operate-transfer.
Source: Weitz, Almud, and Richard Franceys, editors. 2002. *Beyond Boundaries, Extending Services to the Urban Poor*. Manila: ADB.

Each PPP option implies varying levels of responsibility and risk to be assumed by the private operator, together with differences in structures and contract forms as discussed in the subsequent sections and summarized in Table 3. Increasingly, contracts are becoming hybrids, adopting features of several contracts to reflect the best local requirements.

Table 3: Summary of Key Features of the Basic Forms of Public-Private Partnership (PPP)

	SERVICE CONTRACTS	MANAGEMENT CONTRACTS	LEASE CONTRACTS	CONCESSIONS	BOT
Scope	Multiple contracts for a variety of support services such as meter reading, billing, etc.	Management of entire operation or a major component	Responsibility for management, operations, and specific renewals	Responsibility for all operations and for financing and execution of specific investments	Investment in and operation of a specific major component, such as a treatment plant
Asset Ownership	Public	Public	Public	Public/Private	Public/Private
Duration	1–3 years	2–5 years	10–15 years	25–30 years	Varies
O&M Responsibility	Public	Private	Private	Private	Private
Capital Investment	Public	Public	Public	Private	Private
Commercial Risk	Public	Public	Shared	Private	Private
Overall Level of Risk Assumed by Private Sector	Minimal	Minimal/moderate	Moderate	High	High
Compensation Terms	Unit prices	Fixed fee, preferably with performance incentives	Portion of tariff revenues	All or part of tariff revenues	Mostly fixed, part variable related to production parameters
Competition	Intense and ongoing	One time only; contracts not usually renewed	Initial contract only; subsequent contracts usually negotiated	Initial contract only; subsequent contracts usually negotiated	One time only; often negotiated without direct competition
Special Features	Useful as part of strategy for improving efficiency of public company; Promotes local private sector development	Interim solution during preparation for more intense private participation	Improves operational and commercial efficiency; Develops local staff	Improves operational and commercial efficiency; Mobilizes investment finance; Develops local staff	Mobilizes investment finance; Develops local staff
Problems and Challenges	Requires ability to administer multiple contracts and strong enforcement of contract laws	Management may not have adequate control over key elements, such as budgetary resources, staff policy, etc.	Potential conflicts between public body which is responsible for investments and the private operator	How to compensate investments and ensure good maintenance during last 5–10 years of contract	Does not necessarily improve efficiency of ongoing operations; May require guarantees

BOT = build–operate–transfer, O&M = operation and maintenance.
Source: Heather Skilling and Kathleen Booth. 2007.

This chapter provides an overview of the key features of each option as well as some inherent advantages and disadvantages. In addition, decision makers should consider carefully the local capacity available to implement options that are more complex. PPPs with complicated financial structures and/or extensive contractual or monitoring requirements will necessitate hiring and/or training staff, a process that has to be accomplished in advance of the need.

Finally, it should be noted that different PPP forms are more readily adapted to particular sectors or project types and have been used more extensively in these contexts. As part of the selection process outlined in chapter 5, decision makers should note the prior depth of experience in using a particular type of PPP in a particular sector.

4.1 Service Contract

Under a service contract, the government (public authority) hires a private company or entity to carry out one or more specified tasks or services for a period, typically 1–3 years. The public authority remains the primary provider of the infrastructure service and contracts out only portions of its operation to the private partner. The private partner must perform the service at the agreed cost and must typically meet performance standards set by the public sector. Governments generally use competitive bidding procedures to award service contracts, which tend to work well given the limited period and narrowly defined nature of these contracts.

Under a service contract, the government pays the private partner a predetermined fee for the service, which may be based on a one-time fee, unit cost, or other basis. Therefore, the contractor's profit increases if it can reduce its operating costs, while meeting required service standards. One financing option involves a cost-plus-fee formula, where costs such as labor are fixed, and the private partner participates in a profit-sharing system. The private partner typically does not interact with the consumers. The government is responsible for funding any capital investments required to expand or improve the system. Box 3 shows Malaysia's experience with service contracts for water leak reduction.

Potential strengths

Service contracts are usually most suitable where the service can be clearly defined in the contract, the level of demand is reasonably certain, and performance can be monitored easily. Service contracts provide a relatively low-risk option for expanding the role of the private sector. Service contracts can have a quick and substantial impact on system operation and efficiency, and provide a vehicle for technology transfer and development of managerial capacity.

Service contracts are often short term, allowing for repeated competition in the sector. The barriers to entry are also low given that only a discrete service is up for bid. The repeated

Box 3: Service Contract for Leak Reduction in Malaysia

Sandakan is a city of about 450,000 inhabitants in the Malaysian state of Sabah. The State of Sabah has had one of the highest levels of nonrevenue water (NRW) in Malaysia. In the 1990s, the level was calculated at almost 60% of system input volume.

In the spring of 2003, Jabatan Air Sabah (Sabah Water Board) let an NRW reduction contract that was aimed at reducing real or physical losses from two directions, improving and expanding the current active leakage control activities, and replacing the mains with the highest burst frequencies. This contract was for a period of 30 months and was undertaken by Halcrow Water Services in partnership with a Malaysian company, Salcon Engineering. In July 2005, the project was successfully ended.

During the course of the project, about 2,100 leaks were located and repaired. At the end of June 2005, physical losses have been reduced by almost 17.5 million liters per day (Mld) against the target of 15 Mld. About 11 Mld have been saved through active leakage control and 6.5 Mld by replacement of mains. This represented a savings of 20% of the total volume of treated water produced.

The physical activities were paired with a training program to ensure sustainability of the efforts. In 2006, Salcon signed a contract for phase two of the contract. The scope of work includes providing core NRW team and technical personnel to carry on with the NRW reduction work, such as pipe replacement, setting up of district metered zones, active leakage detection, leak repairs, consumer meter replacement, pressure management, and network modeling.

Source: Pilcher, Richard. 2005. *A Practical Approach to Developing a Sustainable Water Loss Reduction Strategy in Sandakan, Sabah, Malaysia*. Halcrow Water Services, Rocfort Road, Snodland, Kent ME6 5AH, United Kingdom.

bidding maintains pressure on contractors to maintain low costs, while the low barriers to entry encourage participation in the competition.

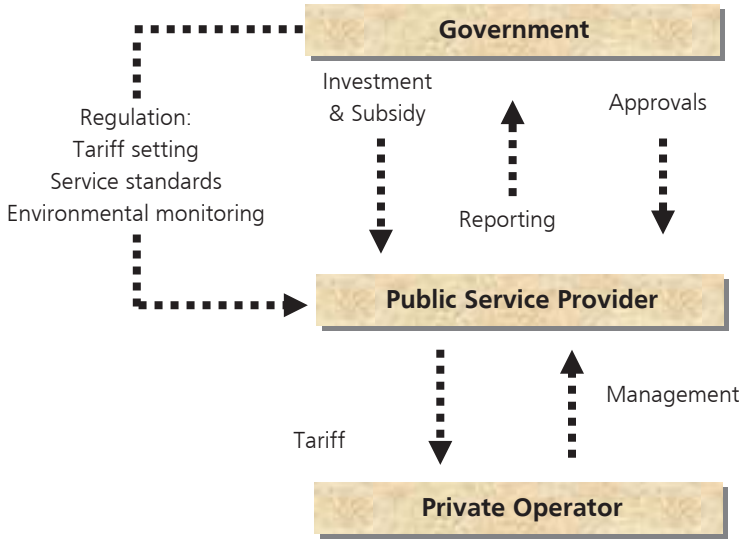
Potential weaknesses

Service contracts are unsuitable if the main objective is to attract capital investment. The contracts may improve efficiency and thus release some revenue for other purposes, but the contractor is not under an obligation to provide financing. The effectiveness of the contractor may, in fact, be compromised if other sources of financing (from government or donors, for instance) do not materialize. The fact that the contractor's activities are discrete and segregated from the broader operations of the company may mean that there is no broader or deeper impact on the system operations, only discrete and limited improvements. The public sector remains in charge of tariff setting and assets, both of which are politically vulnerable and critical to sustain the system.

4.2 Management Contracts

A management contract expands the services to be contracted out to include some or all of the management and operation of the public service (i.e., utility, hospital, port authority, etc.). Although ultimate obligation for service provision remains in the public sector, daily management control and authority is assigned to the private partner or contractor. In most cases, the private partner provides working capital but no financing for investment. Figure 5 illustrates the typical structure of a management contract.

Figure 5: Structure of Management Contract



Source: Heather Skilling and Kathleen Booth. 2007.

The private contractor is paid a predetermined rate for labor and other anticipated operating costs. To provide an incentive for performance improvement, the contractor is paid an additional amount for achieving prespecified targets. Alternatively, the management contractor can be paid a share of profits. The public sector retains the obligation for major capital investment, particularly those related to expand or substantially improve the system. The contract can specify discrete activities to be funded by the private sector. The private partner interacts with the customers, and the public sector is responsible for setting tariffs. A management contract typically, however, will upgrade the financial and management systems of a company and decisions concerning service levels and priorities may be made on a more commercial basis. Box 4 describes Cambodia's experience with management contracts in the primary health care sector.

Box 4: Cambodia—Contracting Out Primary Health Care to Nongovernment Organizations

In addition to their uses in infrastructure, management contracts are used for other municipal services such as health care. In Cambodia, 4-year management contracts with nongovernment organizations were put in place in primary health care facilities in 12 districts. The contractor has full-line management responsibility and must respond to performance targets including achievements in immunization, antenatal care, family planning, and services to the poor. The contractor must provide certain services free of charge (emergency obstetrical care, minor surgery, inpatient treatment of serious illnesses). Compared with publicly managed facilities, the Government found that private management was more effective than public management in terms of performance and coverage achievements, and improvement in working conditions for staff.

Sources: Loevinsohn, Benjamin. 2000. *Contracting for the Delivery of Primary Health Care in Cambodia: Design and Initial Experience of a Large Pilot Test*. World Bank Institute Flagship Program Online Journal. Available: www.worldbank.org/wbi/healthflagship/ journal/index.htm; Bhushan, Indu, Sheryl Keller, and Brad Schwartz. 2002. Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia. *Economic and Research Department Policy Brief* No. 6. Manila: ADB.

Potential strengths

The key advantage of this option is that many operational gains that result from private sector management can be made without transferring the assets to the private sector. The contracts are less difficult to develop than others are and can be less controversial. The contracts are also relatively low cost as fewer staff are dispatched to the utility from the private operator. Management contracts can also be seen as interim arrangements, allowing for modest improvements while more comprehensive contracts and structures are developed. Similarly, a management contract can be structured to phase-in increasingly extensive involvement of the private sector over time and as progress is demonstrated.

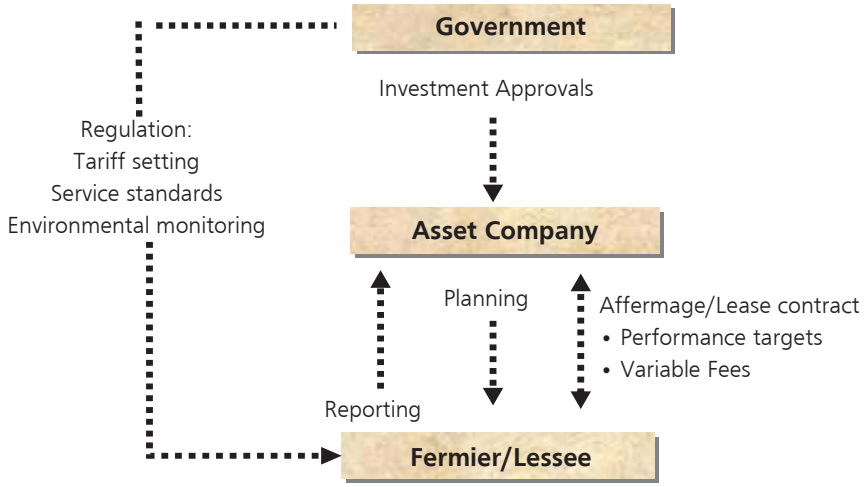
Potential weaknesses

The split between the obligation for service and management, on the one hand, and financing and expansion planning, on the other, is a tricky one. There is a risk that the management contractor does not enjoy the autonomy or the authority (over the labor force, for instance) required to achieve deep and lasting change. If the operator is paid a portion of profits or given an incentive payment, safeguards are required to prevent inflation of reported achievements or deficient maintenance of the system to increase profits.

4.3 Affermage or Lease Contracts

Under a lease contract, the private partner is responsible for the service in its entirety and undertakes obligations relating to quality and service standards. Except for new and replacement investments, which remain the responsibility of the public authority, the operator provides the service at his expense and risk. The duration of the leasing contract is typically for 10 years and may be renewed for up to 20 years. Responsibility for service provision is transferred from the public sector to the private sector and the financial risk for operation and maintenance is borne entirely by the private sector operator. In particular, the operator is responsible for losses and for unpaid consumers' debts. Leases do not involve any sale of assets to the private sector. Figure 6 shows the lease contract's typical structure.

Figure 6: Structure of Lease Contract



Source: Heather Skilling and Kathleen Booth. 2007.

Under this arrangement, the initial establishment of the system is financed by the public authority and contracted to a private company for operation and maintenance. Part of the tariff is transferred to the public authority to service loans raised to finance extensions of the system. See Box 5 on leasing in the ports sector.

An affermage is similar, but not identical, to a lease contract. Unlike a lease where the private sector retains revenue collected from customers and makes a specified lease payment to the contracting authority, an affermage allows the private sector to collect revenue from the customers, pays the contracting authority an affermage fee, and retains the remaining revenue. The affermage can be more appealing to the private partner as it reduces some risks associated with low-cost recovery in sales. The affermage fee is typically an agreed rate per every unit sold.

Box 5: Leasing in the Ports Sector

In Asia, lease contracts are usually used in operating airport terminals or seaport container terminals. Both India and Thailand have ongoing lease contracts to operate container terminals at the seaports of Bangkok and Cochin, Karala State. The Indian contract is for 8 years and involves private participation from the United Arab Emirates. The Thai contract involves local companies and is to run for 27 years. In the People's Republic of China, the Guangzhou Baiyun Airport Terminal is operated under a lease contract with the Keppel Group of Singapore which has a 15-year contract and 25% ownership of the project company.

Source: World Bank. 2006. Private Participation in Infrastructure database.

Potential strengths

Under lease and affermage contracts, the private partner's profits depend on the utility's sales and costs. The key advantage of this option is that it provides incentives for the operator to achieve higher levels of efficiency and higher sales. The principal drawback is the risk of management reducing the level of maintenance on long-lived assets, particularly in the later years of the contract, in order to increase profits. Further, the private partner provides a fee to cover the cost of using the assets although the private partner does not provide investment capital.

Potential weaknesses

The key issue in moving from service and management contracts to a lease is that the contractors' revenues are derived from customer payments and, hence, the question of tariff levels becomes increasingly sensitive. This may require structuring and revising complex tariff arrangements. In addition, the responsibility for capital investment remains with the government and no private investment capital is mobilized.

4.4 Concessions

A concession makes the private sector operator (concessionaire) responsible for the full delivery of services in a specified area, including operation, maintenance, collection, management, and construction and rehabilitation of the system. Importantly, the operator is now responsible for all capital investment. Although the private sector operator is responsible for providing the assets, such assets are publicly owned even during the concession period. The public sector is responsible for establishing performance standards and ensuring that the concessionaire meets them. In essence, the public sector's role shifts from being the service provider to regulating the price and quality of service. Table 4 and Box 6 are samples of infrastructure concessions.

The concessionaire collects the tariff directly from the system users. The tariff is typically established by the concession contract, which also includes provisions on how it may be

Table 4: Examples of Infrastructure Concessions in Developing and Transitional Economies

Telecommunications
People's Republic of China (PRC), Cook Islands, Guinea-Bissau, Hungary, Indonesia, Madagascar, Mexico

Electricity
PRC, Cote d'Ivoire, Guinea, Hungary, Mexico

Natural Gas Transport and Distribution
Argentina

Railways
Argentina, Brazil, Burkina Faso, Chile, Cote d'Ivoire, Mexico

Water Distribution
Argentina, Brazil, Chile, PRC, Colombia, Cote d'Ivoire, Guinea, Hungary, Indonesia, Macao, Malaysia, Mexico, Philippines, Senegal

Source: Resides, Ioannis N.. 2004. *Reforming Infrastructure: Privatization, Regulation and Competition: A World Bank Policy Research Report*. Washington, DC: World Bank.

Box 6: Republic of Korea's First Airport Railway

The first railway concession project is underway in the Republic of Korea (ROK). The 61.7 kilometer (km) line from Seoul city center to Incheon International Airport will offer both commuter and express service. The 41-km first phase of a new commuter and express rail air link in ROK opened in 2007 between Incheon International Airport and Gimpo domestic airport. It will be extended by 20.7 km 2.5 years later to take the line into the heart of the capital at Seoul central station.

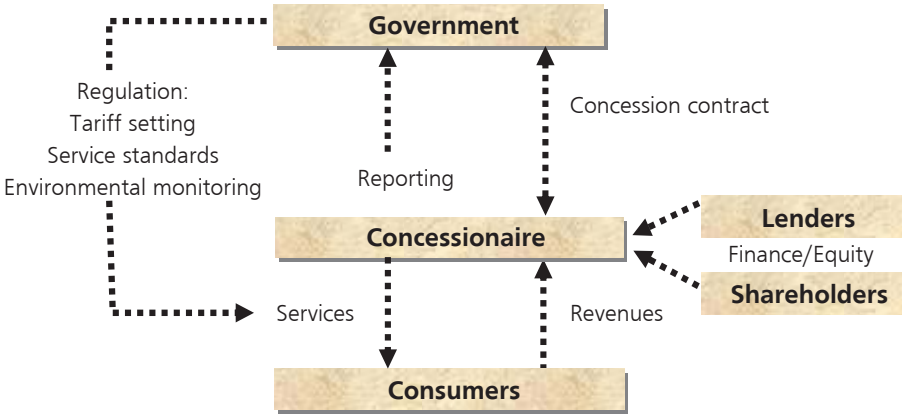
The project is strongly supported by the national and regional governments as a means of linking the Incheon hub to Seoul and the recently opened KTX high-speed railway, which runs from Seoul Central station to Busan. It is the first railway concession project in ROK. Incheon International Airport Railroad Company (Iiarco), a special purpose company incorporated in March 2001, has a 30-year operating concession from the end of construction.

Iiarco has 11 shareholders, led by Hyundai Engineering and Construction (HDEC) with 27%, Posco Engineering and Construction (11.9%), Daelim Industrial (10%), Dongbu Corporation (10%), Korea Rail Network Authority (9.9%), and six other Korean companies. Bechtel is providing support for project management to Iiarco and a Korean consultant, Kortech, is also assisting the concessionaire.

Source: Knutton, Mike. 2004. *International Railway Journal*. May.

changed over time. In rare cases, the government may choose to provide financing support to help the concessionaire fund its capital expenditures. The concessionaire is responsible for any capital investments required to build, upgrade, or expand the system, and for financing those investments out of its resources and from the tariffs paid by the system users. The concessionaire is also responsible for working capital. A concession contract is typically valid for 25–30 years so that the operator has sufficient time to recover the capital invested and earn an appropriate return over the life of the concession. The public authority may contribute to the capital investment cost if necessary. This can be an investment "subsidy" (viability gap financing) to achieve commercial viability of the concession. Alternatively, the government can be compensated for its contribution by receiving a commensurate part of the tariff collected. A concession contract's typical structure is shown in Figure 7.

Figure 7: Structure of Concession Contract



Source: Heather Skilling and Kathleen Booth. 2007.

Potential strengths

Concessions are an effective way to attract private finance required to fund new construction or rehabilitate existing facilities. A key advantage of the concession arrangement is that it provides incentives to the operator to achieve improved levels of efficiency and effectiveness since gains in efficiency translate into increased profits and return to the concessionaire. The transfer of the full package of operating and financing responsibilities enables the concessionaire to prioritize and innovate as it deems most effective.

Potential weaknesses

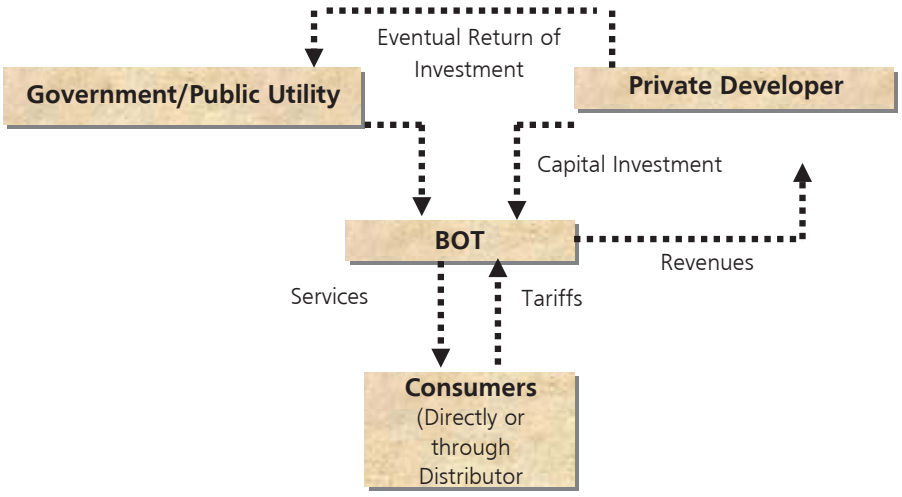
Key drawbacks include the complexity of the contract required to define the operator's activities. Governments also need to upgrade their regulatory capacity in relation to tariffs and

performance monitoring. Further, the long term of the contracts (necessary to recover the substantial investment costs) complicates the bidding process and contract design, given the difficulty in anticipating events over a 25-year period. This drawback may be countered by allowing a periodic review of certain contract terms in the context of the evolving environment. There is additional risk that the operator will only invest in new assets where it expects payback within the remaining period of the contract unless provisions for these events are set out in the contract. Because of the long-term, comprehensive nature of the contracts, they can be politically controversial and difficult to organize. It is argued that concessions provide only limited competition given the limited number of qualified operators for a major infrastructure network. There is also concern that concessions not set out monopoly terms but provide room for additional operators where this is in the best interest of certain groups of consumers and the concessionaire cannot provide equivalent service.

4.5 Build–Operate–Transfer and Similar Arrangements

BOT and similar arrangements are a kind of specialized concession in which a private firm or consortium finances and develops a new infrastructure project or a major component according to performance standards set by the government. Figure 8 illustrates the BOT contract structure.

Figure 8: Structure of a Build–Operation–Transfer (BOT) Contract



Source: Heather Skilling and Kathleen Booth. 2007.

Table 5: Basic Project Delivery Options

	Own	Conceive	Design	Build	Operation & Maintenance	Financial Responsibility
Design–Bid–Build	Public	Public	Private by fee contract		Public	Public
Design–Build	Public	Public	Private by fee contract		Public	Public
Build–Operate–Transfer (BOT)	Public	Public	Private by fee contract			Public
Design–Build–Finance–Operate (DBFO)	Public	Public or Private	Private by fee contract			Public, Public/Private, or Private
Build–Own–Operate (BOO)	Private	Public or Private	Private by contract (concession)			

Source: United States Department of Transportation, Federal Highway Administration. Available: www.fhwa.dot.gov/ppp/options.htm

The variations of BOT-type contracts include those cited in Table 5. Several of these are discussed in this section.

Under BOTs, the private partner provides the capital required to build the new facility. Importantly, the private operator now owns the assets for a period set by contract—sufficient to allow the developer time to recover investment costs through user charges.

The public sector agrees to purchase a minimum level of output produced by the facility, sufficient to allow the operator to recover its costs during operation. A difficulty emerges if the public sector has overestimated demand and finds itself purchasing output under such an agreement ("take–or–pay") when the demand does not exist. Alternatively, the distribution utility might pay a capacity charge and a consumption charge, thus sharing the demand risk between the public and private partners. BOTs generally require complicated financing packages to achieve the large financing amounts and long repayment periods required. (See Box 7).

At the end of the contract, the public sector assumes ownership but can opt to assume operating responsibility, contract the operation responsibility to the developer, or award a new contract to a new partner.

The distinction between a BOT-type arrangement and a concession—as the term is used here—is that a concession generally involves extensions to and operation of existing systems, whereas a BOT generally involves large "greenfield" investments requiring substantial outside finance, for both equity and debt. However, in practice, a concession contract may include

Box 7: Build–Operate–Transfer for the Construction and Operation of a Solid Waste Transfer Facility in Hong Kong, China

Hong Kong, China issued a build–operate–transfer for constructing and operating its solid waste transfer facilities, which include a transfer station and fleet of transfer trucks. The Government prequalified several firms based on their experience in designing and operating transfer stations, and then held a competitive tendering process to select the winning firm. The bidding documents laid out technical and environmental performance requirements, maintenance requirements, and equipment replacement schedules. The station has been built and is currently in operation. The Government conducts regular inspections of the transfer facilities to verify that the specified requirements are being met.

Source: Public–Private Cooperation in the Delivery of Urban Infrastructure Services (Options & Issues). *Public–Private Partnerships for Urban Environment Working Paper I*. United Nations Development Programme (UNDP). Available: www.undp.org/pppue/gln/publications

the development of major new components as well as extensions to existing systems, and BOTs sometimes involve expansion of existing facilities.

There are many variations on the basic BOT structure including build–transfer–operate (BTO) where the transfer to the public owner takes place at the conclusion of construction rather than the end of the contract and build–own–operate (BOO) where the developer constructs and operates the facility without transferring ownership to the public sector. Under a design–build–operate (DBO) contract, ownership is never in private hands. Instead, a single contract is let out for design, construction, and operation of the infrastructure project.

The questions of ownership and the timing of the transfer are generally determined by local law and financing conditions, and the number of possible permutations is large. (See Box 8).

With the design–build–finance–operate (DBFO) approach, the responsibilities for designing, building, financing, and operating are bundled together and transferred to private sector partners. DBFO arrangements vary greatly in terms of the degree of financial responsibility that is transferred to the private partner.

Potential strengths

BOTs have been widely used to attract private financing to the construction or renovation of infrastructure. BOT agreements tend to reduce commercial risk for the private partner because there is often only one customer, the government. The private partner must be confident however that the purchase agreement will be honored.

Box 8: Build–Own–Operate and Transfer Contract to Develop, Operate, and Maintain a Toll Road in Gujarat, India

The contract for this 32-kilometer toll road facility includes the design and completion of the project road, including the pavement, cross-drainage works, bridges, toll facilities, medians, and separators. It also covers management, and operation and maintenance, including toll collection, operation of the toll plaza, traffic regulation, and maintenance of the facility.

The contractor has relative autonomy to determine its work methods and plan its maintenance. Toll rates are based on a fixed formula and increase annually in line with an escalation formula linked to the consumer price index. For a higher toll increase than approved in the contract, a toll review committee is constituted to provide a recommendation to the Government.

An independent engineer and independent auditor are hired to oversee the contract agreement and report to the Government and the contractor.

Risks are mitigated as follows:

- Land acquisition risk: the Government bears all responsibility for completion.
- Revenue risk: Borne by contractor but tolls are automatically revised every year through an agreed indexation formula.
- Inflation risk: Borne by the contractor but this is transferred to the contractor because of the fixed price nature of the contract.
- Risk of shortfall in traffic: provision to extend the contract in case of nonachievement of a 20% return over the 30-year period. Additional revenue is also possible at the discretion of the Government.
- Force majeure risks: comprehensive insurance coverage and a temporary toll review provision to mitigate loss of revenue for a short period due to force majeure.

Source: World Bank. Tool Kit for Public-Private Partnership in Highways. Available: http://rru.worldbank.org/Documents/Toolkits/Highways/2_carac/23/23_.htm

An advantage to DBFO projects is that they are financed partly or completely by debt, which leverages revenue streams dedicated to the project. Direct user fees (like tolls) are the most common revenue source. However, other sources of finance in the road sector, for instance, might include lease payments, shadow tolls, and vehicle registration fees.

Potential weaknesses

BOTs have a project-specific application so they are potentially a good vehicle for a specific investment, but with less impact on overall system performance. It can be difficult to link the increases in production brought about by a BOT with commensurate improvements on the demand side. While initial capital construction costs may be reduced through the private sector's experience, private debt may be an expensive substitute for public financing where a take–or–pay agreement is in place.

The benefit of competition is limited to the initial bidding process and these contracts are often renegotiated during their life. The tender documents and processes require careful design and adequate time.

4.6 Joint Venture

Joint ventures are alternatives to full privatization in which the infrastructure is co-owned and operated by the public sector and private operators. Under a joint venture, the public and private sector partners can either form a new company or assume joint ownership of an existing company through a sale of shares to one or several private investors. The company may also be listed on the stock exchange. A key requirement of this structure is good corporate governance, in particular the ability of the company to maintain independence from the government. This is important because the government is both part owner and regulator, and officials may be tempted to meddle in the company's business to achieve political goals. From its position as shareholder, however, the government has an interest in the profitability and sustainability of the company and can work to smooth political hurdles. The private partner assumes the operational role and a board of directors generally reflects the shareholding composition or expert representation. Box 9 highlights joint venture arrangements in the PRC.

Box 9: Energy Expansion through Joint Ventures in the People's Republic of China

General Electric (GE) Energy has been active in the People's Republic of China (PRC) for more than 90 years, supplying 70 steam turbines, 165 gas turbines, 97 wind turbines, 180 hydropower units, and 300 compressors as well as total engineering solutions to help the country improve the reliability and availability of its energy production and transmission equipment.

GE Liming is an $18.9-million joint venture formed on 28 August 2003 between GE Energy (51%) and Shenyang Liming Aero-Engine Company, Ltd. (49%), one of the PRC's primary manufacturers of aero-derivative gas turbines and jet engines. The joint venture manufactures combustion components, buckets, and nozzles to contribute to the assembly of GE's Frame 9FA and 9E gas turbines in the PRC.

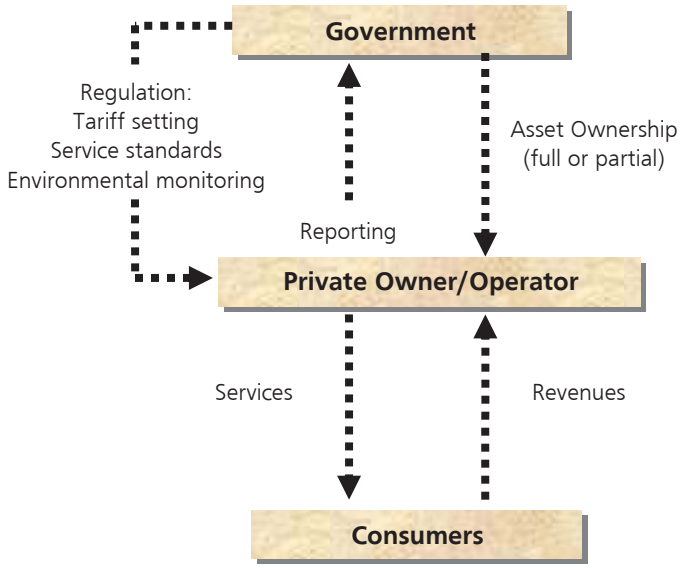
GESTT, a $13.7 million joint venture, was formed on 8 January 2003 between GE Energy (75%) and Shenyang Blower Works (SBW) (25%), a major state-owned enterprise in centrifugal compressors, blowers, and gear manufacturing in the PRC. The joint venture brings to the Chinese oil and gas industry a wide range of GE Energy's oil and gas service offerings, coupled with strong local capability.

Source: GE Energy. 2005. *GE Energy Expands Role in China*. 25 August. Available: www.gepower.com/about/press/en/2005_press/082505.htm

The joint venture structure is often accompanied by additional contracts (concessions or performance agreements) that specify the expectations of the company. Joint ventures also take some time to develop and allow the public and private partners considerable opportunity for dialogue and cooperation before the project is implemented.

Under the joint venture structure, both public and private partners have to be willing to invest in the company and share certain risks. Figure 9 is the typical joint venture contract's structure.

Figure 9: Structure of Joint Venture Contract



Source: Heather Skilling and Kathleen Booth. 2007.

Potential strengths

Joint ventures are real partnerships of the public and private sectors that match the advantages of the private sector with the social concerns and local knowledge of the public sector. Under a joint venture, all partners have invested in the company and have an interest in the success of the company and incentives for efficiency.

Potential weaknesses

Government's dual roles as owner and regulator can lead to conflict of interest. Joint ventures also have a tendency to be directly negotiated or to follow a less formal procurement path, which can lead to concern for corruption.

4.7 Hybrid Arrangements

Contract arrangements that incorporate different characteristics of a range of contract types can also be developed. Called "hybrid arrangements", these bring together the attributes most suitable to a particular project's requirements and the operating conditions. Hybrid arrangements provide a tailored solution in terms of scope, risk sharing, and/or scope that is most directly suitable to the project at hand. Obviously, the variations are endless, but examples include:

- A "management contract plus" arrangement, in which the performance-related element of the management contract is substantial enough to transfer real risk. For instance, the payment of bonuses to the management contractor might be linked to achievement to increases in the operating cash flow of the utility by a predetermined amount. To achieve the bonus (if sufficiently large), the contractor may put additional inputs at risk to achieve the cash flow outputs.
- A private contractor, LEMA, through a management contract, is responsible for water distribution and wastewater collection in Amman, Jordan. The contract provided LEMA with a fixed-fee and a bonus based on the improved performance of the utility. Similarly, LEMA faced penalties for not achieving improvements. Under this structure, the management contract in Amman was one of the first to adopt risk-sharing mechanisms more typically associated with deeper forms of PPP.
- In Gabon, a concession contract was offered for a vertically and horizontally integrated national utility, providing both water and electricity. The Government decided to keep water and electricity services together in the scope to permit continued cross-subsidies from electricity to water. This contract design yielded several benefits, including cost reductions through the sharing of human, financial, and technical resources and creation of a platform for investment planning that is more integrated.
- An "affermage–lease plus" arrangement has the ability to share responsibility for investments. Under a standard affermage/lease, the contracting authority retains full responsibility for undertaking and financing new investment even though the operator may be in a better position to manage new construction and some other investment obligations.

In some cases, the operator is given a limited investment responsibility, such as extension of network service coverage in certain areas. Alternatively, the operator and contracting authority may reach an agreement to cofinance investments.

5 Structuring a PPP: Selecting the Option

As previously mentioned, PPP should be implemented within an overall reform strategy. The objectives of a PPP project will be a subset of the objectives for the overall sector reform. Selecting an appropriate PPP option is based on a diagnosis of:

- PPP options available (as described in chapter 4),
- technical constraints and goals of the sector (as identified in the diagnostic),
- legal and regulatory constraints (as identified in the diagnostic),
- institutional issues (as identified in the diagnostic),
- commercial, financial, and financing requirements and constraints (as identified in the diagnostic),
- interest of the market (local and international as described below), and
- special requirements of the sector based on characteristics of the system or population.

The list of reform objectives should be compared with the results of the diagnostic and features of each contract type, its advantages and disadvantages, likely outcomes and prerequisites. From this analysis, it is possible to determine which option is most likely to succeed at meeting the greatest number of (or the most critical) objectives.

Priorities for a PPP might include increased coverage, improved services, efficiency improvements with associated reduction in government subsidy, or customer satisfaction. The government and its advisors would use cost/benefit analysis and would consult with a wide range of possible private partners (operator survey) to gain insight on the appeal, or lack of appeal, of the options under consideration.

Particular PPP forms are used more widely and are more readily applied to particular sectors. For instance, BOTs are more often employed in the development of toll roads and wastewater plants while management contracts might be seen in health-care or water services.

That said, no PPP option could be applied without tailoring it to the local context. The options provide a menu of contract types that can be modified to suit specific project requirements. Incorporating different components of different contract types or using several contracts in combination may be necessary. Additional modifications may be necessary to facilitate the financing of the transaction, to respond to concerns of potential partners, to improve low-income service provision, and to address labor issues.

Government objectives for the PPP process: Selecting a PPP option is influenced by the government's specific objectives. For instance, is it government's priority to reduce the costs of service? On the other hand, is there a limited goal to improve billing and collection? Or is the priority to expand coverage? Depending on the objectives, different options may be more suitable to delivering them in a project.

Prerequisites to implementing a particular form of PPP: The diagnostic analysis determines the status of the sector undergoing reform. Each form of PPP has a set of prerequisites for successful implementation. For instance, deeper forms of PPP that transfer greater risk to the private sector will require more sophisticated legal and regulatory structures, as well as availability of local skills to implement and monitor the transactions. Other constraints may be low-cost recovery levels, lack of system information, or poor technical performance. If prerequisites are not in place as determined through the diagnostic, it may be prudent to start with a less extensive form of PPP. An alternative would be to achieve PPP prerequisites, see Table 6, during the preparatory phase by implementing legal and regulatory reforms, ensuring key investments are made, and/or putting new institutions in place.

Table 6: Prerequisites of PPP Options

Option	Political Commitment	Cost Recovery Tariffs	Regulatory Framework	Information Base	Government Capacity for Contracting, Management, and Analysis
Service Contract	Low	Low	Low	Low	Moderate
Management Contract	Moderate	Moderate	Moderate	Low	Moderate
Lease	Moderate	High	High	High	High
Concession	High	High	High	High	High
Build–Operate–Transfer and variations	High	Variable	High	High	High

Source: Heather Skilling and Kathleen Booth. 2007.

The private sector's interest in the option: A particular option such as a concession may best meet the objectives of the government, but the level of risk may be unacceptable to potential private investors. The likely level of interest can be assessed through analysis of previous investments in the region, country, and sector, and by assessing the market interest.

Before the formal procurement process, potential bidders are often invited to comment on a proposed project structure. The comments are based on a pre-bid road show, a briefing, or a project paper, which is shared. Often, the opportunity is described in an "Information Memorandum", a summary of the key attributes of the project, the operating environment,

and anticipated financing. These discussions also generate market interest in an opportunity and may broaden the pool of potential bidders. Collecting this market feedback from potential private partners during the design/preparatory phases ensures that the bid package attracts interest.

Based on these three criteria, the available options can be ranked and the government can take an informed decision on the PPP strategy to be adopted. The road map will then be updated to reflect the PPP option selected and preparatory work can start.

6 PPP Preparatory Work

The sector strategy and road map (updated based on the PPP option selection) outline the work to be done to create the enabling environment and structure the PPP transaction. In general, the preparatory work falls within the same categories as the sector diagnostic, and addresses the constraints identified through sector analysis:

- legal, regulatory, and policy frameworks;
- technical issues;
- institutional and capacity building; and
- commercial, financial, and economic issues.

The preparatory stage culminates in the achievement of an environment conducive to sustainable reform and in a well-defined, documented, and agreed-upon PPP process.

6.1 Establishing Appropriate Legal, Regulatory, and Policy Frameworks

The potential PPP project will exist with a public policy framework, which includes specific legal and regulatory settings.

The legal analysis will have resulted in an inventory of existing laws, regulations, contracts, and other legal documents that define the characteristics of PPP or those that have to be changed. Gaps are also identified where new legal instruments are required. These may relate directly to PPP (privatization law, sector licensing, etc.)—or be of more broad and general relevance (company law, labor laws, environmental laws, foreign exchange regulations, etc.). It may be possible to change the "direct" ones to facilitate the PPP, but the "general" ones typically simply need to be recognized and followed.

As such, the PPP structure has to reflect the prevailing tax regime, concession rights, dispute resolution procedures, public service laws, labor laws, etc. Corporate structures have to adhere to company laws and other legal requirements. To the extent that laws have to be changed to accommodate the desired PPP, the timetable should reflect a realistic period for this. The legal work continues as the PPP process progresses.

Similarly, the regulatory regime including oversight arrangements for pricing, customer service, operations, and market structure may need to be changed or newly created. The desired PPP option has to be contrasted with the existing regulatory arrangements and capacity and regulatory gaps should be filled or the PPP structure should be changed. The gaps may include the need for (i) more explicit regulations and requirements of the operator (to be

embedded in contract, regulations, or statute); (ii) developing actual regulatory institutions (such as an independent regulator, a regulatory unit within government, and contracting of regulatory capacity); (iii) training regulators; and (iv) developing procedures whereby the regulator requests and receives information.

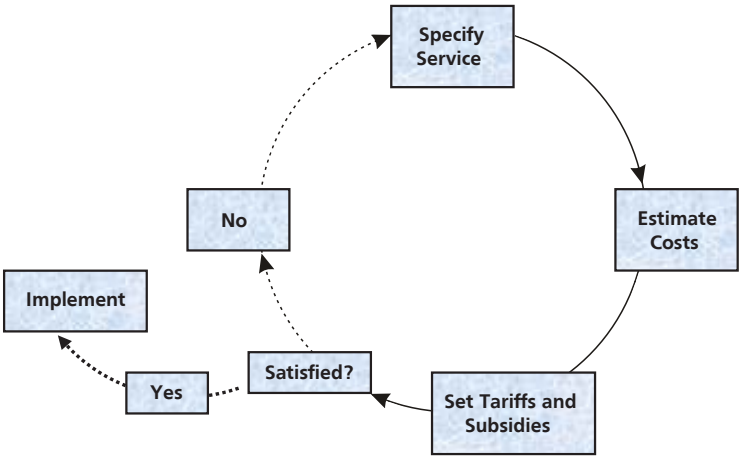
The roles of each entity involved in performance monitoring (boards, ministries, auditors, monitors) and regulation (ministries, regulators) should be described and justified by assigned authorities.

6.2 Technical Preparation

The technical specifications of the proposed PPP project need to be defined and documented in the terms of reference, and ultimately enshrined in the PPP contract. The preparation stage is the time to develop the preliminary specifications. Development of the final technical specifications of a project is an iterative process which builds on feedback from the market and the affordability of the project at each design stage.

The technical design of a project starts with identification of desired coverage targets and service standards. From these starting points, estimating the cost of these desired services (factoring in presumed efficiency gains) and cost recovery tariffs is possible. Government has the option of putting these cost recovery tariffs in place, subsidizing cost-recovery, or revisiting the initial targets and service standards. Figure 10 illustrates the balancing of service and costs.

Figure 10: Balancing Service and Costs



Source: World Bank and PPIAF. 2006. *Approaches to Private Participation in Water: A Toolkit.*

The technical preparation builds on (and refines) the analytical work that has been done in preparing the sector analysis and road map, including demand analysis, asset inventory, and investment analysis.

Technical terms of reference need to strike a balance between being too narrow/restrictive and too loose. Technical specifications that are too narrow may mean that a bidder is prohibited from using the most economical technical solution. Too loose terms may lead to proposals that diverge significantly from each other and are hard to compare and rank. A strategy for dealing with this dilemma is to focus on defining the technical outputs expected rather than dictating the inputs to be employed, thus allowing the bidders some reasonable latitude to determine the most efficient way to achieve outputs.

The technical terms of reference enable bidders to understand required outputs, quantify necessary investment, and estimate resulting operating performance.

Below are two samples, Boxes 10 and 11, of the type of specifications that might be contained in the technical portion of a request for proposals:

Box 10: Example of Performance Specifications in Railway PPPs

Performance Specifications – Railway PPPs

Key technical specifications to be detailed in a railway PPP might include:

Availability of service:

- Stations: locations, opening hours, passenger throughout

Trains:

- Journey time, frequency, passenger capacity

System:

- reliability, safety, degraded mode operation

Ambience – quality of journey:

- Quality of finishes, seat/standing ratio, lifts and escalators, customer information, fare collection

Capability:

- system architecture, external interfaces

Transfer:

- return conditions, maintenance manuals and records, final years issues

Source: Dr. Higton, Nick. *Using Public Private Partnership to Deliver Successful Rail Projects*. Ove Arup & Partners Ltd.

Box 11: Example of Performance Specifications in Water PPPs

Performance Specifications – Water Service PPPs
Key technical specifications to be detailed in a water and sanitation PPP might include:

Coverage Targets:
- Number of new direct household connections, or the percentage of households to be connected
- Percentage of roads with tertiary pipes
- Geographic area to be served through direct connections, kiosks, standpipes, or other nonpiped delivery systems (for water services), and public latrines or other improved sanitation options (for sanitation services).

Quality Standards:
- Availability of service
- Pressure
- Water quality
- Effluent treatment
- Customer service

Source: World Bank and PPIAF. 2006. *Approaches to Private Participation in Water: A Toolkit.*

6.3 Institutional Structures and Capacity Building

When restructuring sector roles is part of the PPP process, the private sector is engaged to undertake activities that were in the public domain and the public sector becomes a regulator or monitor, playing a limited role in actual service provision, if any. Most countries initially lack the institutions and institutional capacity required to organize, manage, and implement a PPP process. Existing institutions need to build capacity to be able to take on new roles and new institutions often have to be created. Some key institutional arrangements used to support PPP are:

- PPP units,
- project implementation office/project implementation unit, and
- technical assistance.

6.3.1 PPP Unit

A PPP unit is established as a point of coordination, quality control, accountability, and information related to PPPs either within a single sector or across a range of sectors. These units are created as a new agency or within a ministry such as the finance ministry, which is seen to be at arms' length from the sector to be reformed. For private proponents, the units provide transparency and consistency. For public stakeholders and the public at large, the units are able to disseminate information and provide specialized management of a specialized process. (See Box 12 for PPP units in Australia and the Philippines.)

Box 12: Public–Private Partnership (PPP) Units in Australia and the Philippines

Australia—State of Victoria

State governments in Australia are mainly responsible for most infrastructure sectors. In the State of Victoria, individual government departments are ultimately responsible for concession design and award. Project responsibility is assigned to a single minister in each case. This minister is then responsible for facilitating consultation with the other government departments involved in the project. The minister will also work with the Department of Treasury and Finance. To guide and promote consistency in analysis and procedures, the Victorian government has formulated an Infrastructure Investment Policy for Victoria, a description of which was published in June 1994 by the Department of Treasury and Finance. That department also acts as a reference center when guidance is required by other government entities.

Source: www.treasury.vic.gov.au/

The BOT Center of the Philippines

The Government of the Philippines created an institutional structure to support the country's large private infrastructure program. Each sectoral agency has a specialist build–operate–transfer (BOT) unit responsible for coordinating the design and implementation of its projects. National, provincial, and municipal authorities select and award projects under the framework. The authorities prepare a list of priority projects, which must be approved by either the Investment Coordination Committee of the National Economic and Development Authority (NEDA), the NEDA Board, or by local or regional councils. As part of its program, the government created a BOT Center to perform the following tasks:

- Keeping an updated national inventory of all nominated projects eligible for development under the BOT framework,
- Providing general advice to foreign investors doing business in the Philippines,
- Developing infrastructure projects,
- Providing technical assistance and training to central and local government officials on the design and implementation of projects, and
- Spearheading promotional activities for the Philippine BOT program and specific projects through brochures and road shows.

Initially, the Center was mainly involved in marketing the BOT concept to private investors. It now spends more time training national and local government officials.

Source: www.botcenter.gov.ph/

The units serve to ensure that the key stakeholders relevant to a PPP adhere to a consistent methodology and agreed guidelines:

- project identification and prioritization,
- encouraging competition,
- due diligence of opportunities,
- adherence to transparent bidding processes,
- ensuring the appropriate treatment of employees and government assets, and
- ensuring the most effective use of government resources.

PPP units have typically focused on the identification, development, and bidding of projects. However, focus is increasing on the potential role units may play in the oversight of a contract once launched. This may include ensuring that the proper systems are in place for monitoring and reporting.

There is also increased attention to the structure and location of these units. Specifically, the units should command the right level of authority and should be led by a well-respected and competent executive. Further, there is increased support for the establishment of these units as akin to project developers with a pay structure that is linked to successful transactions. The units need not be large; in fact, large units can be seen to undermine the intent of PPPs to promote efficiency. The units often require initial or ongoing technical assistance from PPP specialists.

A final consideration is of the links between the PPP unit and the line ministries and, possibly, other levels of government. PPP activity may occur on a national or subnational level and the location of the PPP units should correlate to the market activity.

There must also be coordination with the sector ministry associated with a particular PPP, particularly the project implementation unit (PIU).

6.3.2 Project Implementation Unit

A PIU is a vehicle to plan and implement a project or projects. At times, it is linked with a line ministry, but it can also be quasi-independent of the ministry. Most PIUs are established to support large capital investment projects (typically donor-funded) and the life span of the PIU is linked with the project life cycle. The precise structure and role of a PIU will depend on the requirements of the funding agency and the executing agency, the type of project, and the local context.

PIUs have been used as a vehicle to dedicate staff to important projects. They are staffed with internal government staff, with external resources or a mixture of both. Recent analysis

has questioned whether PIUs have been effective in the broader development of project management capacity within governments, particularly when staffing is external.

The advantages to developing a PIU are the creation of a central point of accountability and management. The PIU typically monitors and reports on project progress, performs financial management and accounting, and handles project procurement.

Where both PIU and PPP units exist, close and regular coordination is needed.

6.3.3 Technical Assistance

Unless the government is deeply experienced in contracting PPPs, there will be occasion to hire transaction advisors and/or specialist advisors such as lawyers, financial analysts, financiers, economists, sociologists, and sector specialists to support the government. These advisors can be procured as a team or recruited individually, in which case coordination among the team members should be ensured. Advisors will pay an important role in maintaining momentum, developing strategies for government consideration, helping develop public messages and information, performing analysis of PPP options, and supporting the bidding and negotiation processes.

The specialist advisors should be brought into the process early and should be paired with government counterparts. As PPP is considered, government should be identifying potential local counterpart staff, developing a PPP unit or PIU, and should be training staff to take on new responsibilities. The local capacity building should be supported through working relationships with any advisor.

Ideally, technical advisors would continue support through to contract signing and possibly beyond. The bid and negotiation process involves repeated clarifications and iterations of the bid documents, often occurring swiftly. The process must be well organized, politically defensible, and must lead to a good outcome. If external support (financial, legal, and technical) to the government is not available at this stage, key government officials must have received training in negotiation and be completely familiar with the content and intent of the bid package (the contract, bid documents, and bid forms).

Similar technical assistance may also be necessary to build capacity at the entity charged with monitoring contract compliance and progress targets.

6.4 Commercial, Financial, and Economic Preparation

In designing and preparing PPP, there must be a process to balance service levels with the tariff levels, creating a package of price and service which is acceptable to customers and

sustainable for the utility. Critical to this analysis is the structure of payments to and revenues for the private partner, including any subsidies that might be required.

This iterative process will encompass:

- technical analysis—to determine the cost of service;
- market and social research—to determine what people are willing and able to pay for certain service levels;
- financial analysis and modeling—to determine the cost recovery tariff required to support the desired coverage targets and service levels; and
- consultation and trade-offs—to agree any transitional subsidies until cost recovery is achieved or ongoing subsidies, e.g., to low-income customers. If the subsidies are not available, coverage and service targets may need to be reduced.

As described in section 3.5, the financial model must be flexible enough to accommodate a range of variables, allowing for an iterative process between the financial modeling and the PPP design. A key objective will be to ensure the financial sustainability of the utility through efficiency gains and through balancing of income and expenses. The financial model is a tool that helps achieve the right balance of affordability, cost recovery, and investment. The model will help prioritize investments and inform decisions on who should pay for investments, depending on the respective cost of capital. Some countries also find it useful to use a public sector comparator (PSC) model which helps government test whether a private investment proposal offers value for money compared with the most efficient form of public provision.

In preparing the transaction, three important considerations will be (i) the source of financing, (ii) the design of the appropriate tariff structure and tariff levels, and (iii) design and application of subsidies.

6.4.1 Project Financing

Infrastructure PPP's typically require financing; that is, external funds are required for the initial investment costs that are recovered over time from future revenue streams. The funds may be sourced from the public sector or the private sector. Regardless of the source of finance, such funds have a cost and, therefore, impact the project's economics and required tariffs (and thus affordability). Fundamental to the question of project financing is the correlation between perceived credit risk (resulting from various technical, commercial, and other risks associated with the project) and the cost of finance.

A government's cost of funding is typically lower than that of a private operator even of the same originating country. Providing private financing may therefore increase the financial costs of PPP. However, the efficiency gains from PPP are expected to outweigh this

additional cost and result in net savings and efficiency gains, with an ultimate benefit to consumers. In addition, public sector financing is usually scarce, creating one of the initial drivers for PPP.

The operator will typically establish a project company for implementing the contract, often called special purpose vehicle (SPV). The company owners may be a consortium of companies or a single large company. The company owners will not usually finance all project requirements; instead, they will provide a proportion as equity and borrow the remainder of the required financing from financial institutions or place debt securities in the capital market.

The creditworthiness ("bankability") of a project depends on a number of factors, some of which are within the control of the government when designing PPP. They include commercially attractive project design and tariffs (shorter payback and, hence, financing periods) as well as strong off-take arrangements to reduce market/revenue risk (predictability of cash flows), together with the level of certainty and transparence of regulatory settings, which affect future cash flows.

Infrastructure project financing in general, whether from banks or bond markets, faces a number of challenges including (i) long-term debt maturities to match project cash flows, (ii) limits to the availability of local currency debt financing to match local currency revenue steams, (iii) limited available equity and resulting high degree of leverage, and (iv) no security/guarantee except for project assets available ("nonrecourse financing").

As a result, project finance is a specialized activity and, depending on prevailing market conditions, may or may not be available at any time. To make financing possible or to secure better borrowing rates, the operator may seek credit enhancement through insurance or guarantees. These might include (partial) credit guarantees (e.g., from the government itself or from a development finance institution) or political risk guarantees (from insurers or development finance institution) against the government or regulator not adhering to agreements (e.g., take-or-pay off-take agreement, concession agreement, etc.).

To determine the amount of debt finance the project can sustain, lenders perform their own calculations related to project performance and cash flow. These include debt service cover ratios, loan life coverage ratios, and project life coverage ratios. Project financing requires a very thorough appraisal process because of the sole reliance on project cash flows. Lenders will undertake due diligence exercises to get comfort that the project assumptions and risks are reasonable.

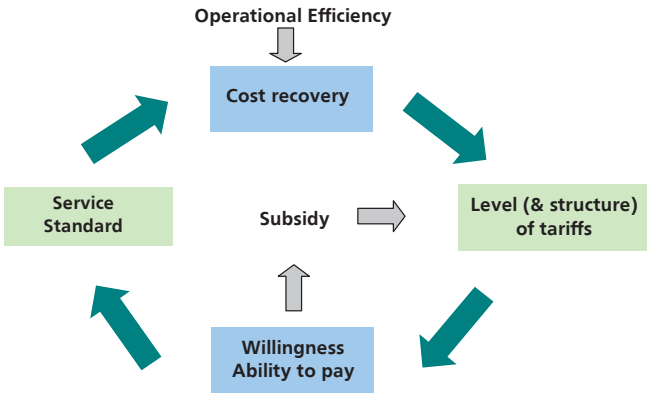
It is critical to understand that the bidders may not fully know the prospective financing arrangements until the last stage of the contracting process. The bidders will have potential financiers lined up, but the final arrangements and risk allocations will only be put in place

when the contract is near certain. At this late stage, the lenders may impose their requirements on the project. This creates the risk that a winning bidder fails to complete financing and may have to withdraw. This highlights the importance of critically assessing the financial resources and borrowing capacity of potential bidders during prequalification. A useful tool is the imposition of a bid bond or a deposit payment by the bidder that is forfeited in case the winning bidder withdraws.

6.4.2 Tariff Design

Tariffs need to balance a number of objectives: (i) stipulated service standard and associated costs, (ii) customers' willingness and ability to pay, (iii) resulting cost recovery, (iv) required economics (return on investment) for private operator, and (v) need for/availability of subsidies. The right combination of factors must be determined through an iterative optimization process using the project model (see Figure 11).

Figure 11: The Iterative Process of Designing Tariffs



Source: Heather Skilling and Nils Janson. 2006.

This process is made more complex if differentiated/complex tariff structures (e.g., unit price as a function of consumption to help low-income users) or tariff adjustment mechanisms (e.g., for input cost changes, exchange rate changes) are used. It is critical to employ qualified and experienced specialists for this modeling and optimization task.

The following objectives provide an appropriate starting point for designing tariffs:

- cost recovery/return on investment,
- incentives for efficiency,
- fairness and equity, and
- simplicity and comprehensibility.

Cost recovery/return on investment

The combination of service standards (costs) and tariffs (revenues) determines the commercial viability of a project. Beyond that, the private operator has the chance to improve the ultimate financial outcome by being particularly efficient in investment and operations. Therefore, a private operator will only get involved in a project if it sees a fair chance to make a profit given a predetermined set of service standards and tariffs.

The internal rate of return (IRR) and return on equity (RoE) are the most commonly used measures to assess the financial attractiveness from a private operator's perspective (as described in section 3.5). A private operator will assess the potential IRR of a project against its own cost of equity, adjusted for the perceived risk of the project. A private operator may be willing to accept a lower IRR if some risks are reduced or mitigated through government actions or otherwise. Revenues are considered adequate if they enable an operator to maintain, replace, modernize, and expand its services and assets. (See Box 13 for Chile's experience in electricity pricing.)

Box 13: Electricity Pricing In Chile

Chile's method of electricity pricing is distinctive because of the innovative approach to rate of return regulation. The price system includes regulated rates for consumers with peak demand of less than 2 megawatts and freely negotiated rates for the rest. The final price to regulated consumers has two components: a node price at which distribution companies buy power from generators and from the transmission grid, and the value-added of distribution. The value-added of distribution is calculated every 4 years. The procedure involves determining the costs of an optimally operated firm and setting rates that provide a 10% real return over the replacement value of assets. These rates are then applied to the real companies to ensure that the average return falls between rates of return on assets of 6% and 14%. If the average actual return falls outside this range, the rates are adjusted to reach the upper or lower limit, depending on whether they fall above or below. The operating costs of the benchmark "efficient firm" and the replacement value of assets are based on a weighted average of estimates made by the industry and the regulatory agency.

Source: Kerf, Michel. 1998. *Infrastructure Concessions: A Guide to Their Design and Award—Privatization Tool Kits.* Washington, DC: World Bank.

As a starting point for determining fairness, tariffs should reflect costs and different customer groups/classes should observe tariffs that reflect the cost of supplying them. For example, people in similar circumstances pay similar amounts or people accepting lower quality of services should have their bills lowered. However, some services, like water and wastewater services, are often considered a public service, and no customer should be denied access to water on the grounds of poverty (see section 6.4.4 on Subsidies). Specific subsidies or cross-subsidies built into the tariff system can address this situation.

Simplicity and comprehensibility

The objective of simplicity and comprehensibility means that tariffs should be easily accessible and understandable to employees and consumers of the utility. For example, if a tariff structure is too complex, customers may not understand the implication of changes in consumption for their bills or the range of options available to them. However, over simplification may result in incentives being lost or a negative impact on fairness.

Balancing the objectives

There is a need to balance these above objectives against one another. For example, the objective of incentives may conflict with the objective of simplicity at times because on cost grounds it may make sense to have a very complex tariff structure. A similar conflict could arise with the fairness objective. There is a further requirement that certain fundamentals be in place including a definition of a reasonable rate of return, an understanding of how assets will be valued, and whether any additional returns are to be allowed.

After evaluating these factors and determining the appropriate allocation of risks in PPP, the initial tariff rates and tariff structure are set in place until an adjustment is warranted.

6.4.3 Tariff Adjustments

To expect one set of tariffs, or even a tariff structure or regime, to remain viable and appropriate over the typical life of a PPP project is unrealistic. It is therefore essential to define practical rules for adjustments. This requires defining:

- The triggers or drivers for a price adjustment, such as changes in raw material prices (such as oil prices for power), inflation, and exchange rate fluctuations (where the operator had to assume unhedged foreign currency exposure);
- The mechanisms by which the adjustment will be made, including cost plus and price-cap regulation; and
- The frequency of adjustments including cost pass-throughs, tariff indexation, tariff resets, and extraordinary tariff adjustments.

Mechanisms

There is a difference between the regulatory requirements of utilities, such as waste management, electricity, water, and telecommunications, and other forms of public infrastructure, such as roads.

Tariff adjustment mechanisms for utilities are discussed below within two basic categories: cost-plus mechanisms and price-cap mechanisms.

Cost-plus or rate of return mechanisms permit regulated firms to pass all operating expenses and capital costs on to the consumer, including an after-tax return on investment. Under this system, there is no adjustment unless the operator applies to the regulatory authority and requests a review and reset.

The regulator reviews the operator's overall cost base in response to any proposal that higher (or lower) prices are needed to cover their full costs. In theory, this approach provides the best match of prices to incurred costs, but delivers weaker incentives for efficient operation and development since the recovery of a rate of return is assured.

Cost-plus regulation has the potential to encourage firms to inflate operating costs, rather than pursue efficiency. It nevertheless has a strong element of certainty from an investment perspective, which may mitigate risk.

Revenue or price-cap regulation, on the other hand, provides a more direct incentive for efficiency. Revenue or price caps are put in place to control the quantum of revenue over a period or specific prices, but the firms are given leeway to increase earnings through performance improvements. Under this mechanism, a firm can change its price level and its tariff structure according to an index that typically includes an inflation measure and a "productivity offset" (commonly called the X factor). This approach may provide a stronger incentive to improve efficiency and reveals the true costs of providing services.

The choices of regulatory approach is driven by many factors, including the economic expertise available, the accounting and auditing system, investment requirements of a sector, and motivation for efficiency. During the early stages of development when regulatory capacity is being developed, price caps may be a better choice. Prices can be set high enough to attract capital. At a more mature stage of regulation, cost-plus mechanisms might be appropriate to attract large-scale investment.

Many regulatory systems encompass aspects of revenue or price-cap and cost-plus mechanisms in a hybrid, tailored approach, as well as methodological approaches to sector-specific issues.

Nevertheless, the form of regulatory system should be subject to detailed analysis and consideration, which takes account of country, sector, industry, and infrastructure capital investment profiles.

Regulation of nonutility infrastructure PPPs takes a slightly different form and is typically articulated through the PPP contract. Under an infrastructure PPP, the fundamental goal of regulation is to allocate risks rationally and maintain stability between risk and expected return.

Frequency of Adjustments

There are different procedures for enacting adjustments in tariffs. In some cases, there is agreement that the costs of certain inputs (energy, for instance, or bulk water) are to be immediately reflected, passed-through, in the tariff charged to and collected from consumers. In this way, the risk of the input price increase is immediately passed on to consumers. Other pass-throughs might include a change in tax rates, or a change in the quality standards imposed by government. The mechanism is appropriate when the service provider has no control over the input. The pass-through may reduce the service provider's incentive to use the input more efficiently, yet the provider is also wary of increasing tariffs beyond what consumers are willing and able to pay.

Tariff indexation. This mechanism is similar to a cost pass-through but uses a different tool to make the adjustment. Rather than the actual costs of the service, the tariffs are adjusted to reflect a change in an index of prices (such as the consumer price index), on a regular timetable. While indexation may protect the provider from price increases that are predictable and within normal limits, the provider is still vulnerable to changes outside the norm or outside the index. In some cases, the indexation formula is based on a basket of prices most relevant to the service being provided.

Tariff reset or periodic tariff adjustment. A more tailored mechanism for adjusting tariffs is the tariff reset. For a long-term PPP, an indexation or pass-through will likely be insufficient to accommodate all sector changes over the life of the contract. Therefore, the rules for tariff resets are defined before PPP is implemented and will be a topic of discussion among all parties relevant to the discussion of allocating risk.

The discussion of tariff resets has to cover:

- the objectives of the reset,
- the methodology for the reset, and
- triggers for a review and potential reset.

The objectives of the adjustment can include allowing a reasonable rate of return to the operator, encouraging efficiency through a rate of return, or restoring the financial position of the operator who has confronted an unanticipated (and uncontrollable) change in the operating environment such as an exchange rate change.

Depending on the objective of the reset, different methodologies may be used. For instance, there might be an attempt to determine what the most efficient operating costs would be through benchmarking or obtaining expert advice. If the reset is to restore financial standing to the operator, only key cost variables may require review.

Such a tariff adjustment might be triggered by a request for a review or by a specified event. Typically, these adjustments are allowed on a predetermined periodic basis, such as every 5 years.

In some cases, highly unusual circumstances such as strife or bankruptcy might trigger an extraordinary price review.

6.4.4 Subsidy Design

Government subsidies can be used to make a project commercially viable from the perspective of the private operator even if the desired combination of service and tariff levels does not result in sufficient cost recovery. This will only make sense if the aggregate cost to the government under PPP (including subsidy) is lower than the cost to the government of operating the service fully under the public sector or the cost of not providing the service at the required service levels.

Government subsidies can be "general", i.e., applying to the overall project, or "specific", in which case they are tied to service provision to deserving (low-income) consumer segments. Some subsidies are designed as community service obligations and mandated in regulatory or license standards or paid for by direct and indirect public sector transfers to beneficiaries.

Cross-subsidies do not involve government payments but are a compensation mechanism built into the tariff structure. They serve as a means of reducing average tariff charged to one group of customers by increasing the average tariff charged to another group of customers. The most common forms of cross-subsidies include subsidies from nonhousehold to household customers, and subsidies from high-volume customers to low-volume customers, through rising block tariff structures. Subsidies can be established for access (connection charges) or for consumption.

Governments typically provide subsidies to reduce tariff levels for the purposes of helping the poor, addressing public health issues, addressing environmental issues, and/or because of political constraints on raising tariffs.

In many cases, the subsidy is already effectively in place before PPP, though hidden. To the degree that unprofitable service activities are provided by a public sector institution are loss making, they are reliant on budget support, essentially a public subsidy. As such, implementing an efficient PPP with short- or medium-term subsidies may still result in a net

improvement relative to the status quo. However, the subsidies enhance the overall value of the project and do not remove incentives for efficiency or serve to perpetuate services of limited value.

Different types of subsidies can be used to address different issues. Options are cash subsidies, including output-based aid, unremunerated bearing by the government of business risks, cheap capital, and in-kind grants and tax exemptions. Each of these options is described further below.

Cash subsidies, including output-based aid

Cash subsidies involve cash payments by the government to the private operator or project company. Payments may be made to cover a portion of investments or can be related to service delivery. Clearly, subsidies should be designed to ensure that the private operator has an incentive to achieve the desired public policy outcome. This is not always easy as subsidies may create perverse incentives for inefficient operations or other undesirable outcomes.

Where there are political constraints to increasing tariffs, a general cash subsidy could be paid to the private service provider to reduce the average tariff required from customers to cover the utility's operating expenses. In this case, setting the size of the subsidy in advance is essential. Not doing so will ensure that the private operator has little incentive to minimize operating expenses. In setting the size of the subsidy in advance, provision might be made for a gradual phasing out of the subsidy, through annual reductions in its size, as operating efficiencies are realized and tariff increases are phased in.

Where the rationale for the subsidy is to increase service coverage, rather than cushion the impact of increased tariffs, it may be more appropriate to link payment of the subsidy to an indicator, such as the number of new connections.

A fixed subsidy for each new connection, however, might be expected to provide the operator with an incentive to connect those premises, which would maximize the sum of expected revenues, less connection costs. Such a structure may limit the incentive to connect the poorest households. An alternative would be to subsidize the cost of new connections only in certain areas, such as in areas where poor households are concentrated.

Cheap capital

This refers to a reduction in the required rate of return on equity or a lowering of the effective cost of borrowing for the private operator. Governments can subsidize the cost of debt to a utility by lending it money at concessional rates (i.e., below its own debt servicing costs). Subsequent write-offs of these loans by government may represent a further subsidy

to a utility although this is likely to cause significant problems later when further borrowing may be required. Governments may also subsidize the cost of debt to the utility by providing guarantees or by taking responsibility for exchange rate risk, which can be a significant cost to utilities in developing countries.

In-kind grants and tax exemptions

Governments may also provide subsidies to privately operated utilities through in-kind grants and tax exemptions. In-kind grants may take a variety of forms, such as water abstraction rights, which would otherwise be subject to some form of charging regime, or land grants. Tax exemptions are commonly applied to publicly operated utilities and these may be extended once the utility is privately operated.

Again, these subsidies are not targeted to service delivery outcomes or to those customers most in need of assistance. As a result, there will be a leakage of benefits to nonpoor households, assuming that these benefits are passed on to customers and are not captured by the operator itself in the form of offsetting cost increases.

In case subsidies are necessary, these forms of subsidy should be evaluated by making comparable estimates of the benefits and costs of each subsidy and assessing how well they achieve their stated objectives, such as targeting the poor.

6.5 Labor Considerations

Public sector workers often oppose projected PPP arrangements. There should be early and constant dialogue among the government, the labor unions, and public employees to set out the objectives and strategy for PPP. Information on worker issues should be proactively shared to allay speculation and unfounded concerns. Workers need to be dealt with fairly and either provided with employment opportunities in the new company or given acceptable severance packages.

In working through the labor issues associated with PPP, a legal review is critical. This includes public service acts and regulations, laws specific to the sector and the enterprise, collective bargaining agreements, and any precedents in other sectors.

For employees and unions, the key issues will be:

Redundancies or severance payments. This would include the terms under which employees would be laid off and the opportunity to join a new company if one is being created. Public service employees should be advised whether they are to be transferred to any new entity (and thus, potentially ineligible for severance), whether all employees are eligible for severance

and possible rehiring, or whether only certain employees will be eligible for severance and/or opportunity with the new company.

Terms of employment with a new company. Employees will need to know the employment terms, including salary, reporting lines, benefits, security of tenure, and whether accrued pensions and benefits will be transferred.

Retraining. Whether an employee is severed or retained, there will be questions about training opportunities being offered. As soon as possible, an explicit program to retrain severed workers, allow for spin off of certain functions, and/or improve the capacity of retained staff should be implemented.

The way in which worker issues are handled depends almost entirely on local labor law and local precedent. There should be an attempt to clarify, early in the process, what the law does and does not provide for. Otherwise, speculation will be considerable. Workers should be represented in the process as soon as possible and information should be proactively disseminated.

6.6 Including Local Partners

From the government's perspective, including local private and public partners in the PPP process as much as possible is generally desirable. There are a variety of ways to achieve this:

- **Local private partners**. Local companies are often qualified to be the private partner in PPPs and to develop, improve, and operate infrastructure. Contracts with local partners can range from service contracts to BOTs and may apply to big and small projects. Local partners may be particularly effective for smaller, localized projects, e.g., to reach small towns and peri-urban areas, which demonstrate a viable market, but which are remote from the core infrastructure. Competent utilities or construction firms may enter into competitive tenders to perform discrete services or to construct new facilities. To encourage and regulate local participation, government should predetermine a policy on the inclusion of local companies, ensuring against unfair access to procurement officials, safeguarding against corruption, and setting appropriate and realistic evaluation criteria to enable local companies to compete, while assuring appropriate project quality.
- **Local subcontractors.** In sectors such as water and energy where small-scale service providers are prevalent and necessary to fill gaps in the service provided by the dominant utility at least for the short to medium term, PPP partners may be encouraged to integrate such providers into their strategies. This would not replace intentions to ultimately provide service through formal arrangements, but would prevent the PPP from displacing small-scale providers until such time as replacement services are available.

- **Local government units.** Many joint venture arrangements include municipal or other local public partners. This can be an effective way to bring government decision makers and local stakeholders into corporate governance of the company, transforming their role into one of ownership. There are also conflicts of interest possible in such arrangements, which need to be recognized and mitigated against.

6.7 Stakeholder Involvement

The early involvement of all stakeholders in the PPP process helps develop an enabling environment. The stakeholders provide valuable information on the points of concern, the performance expectations, and potential risks. This input is also critical to assess whether key business assumptions of the proposed PPP (in particular tariffs/fees) are realistic and enforceable. Avoiding consultation invites the risk of later opposition, which slows or derails the process. Ongoing consultation with stakeholders is important at every stage.

Consultation with potential bidders and partners is also critical to ensure that the proposed PPP design meets their requirements. Otherwise, there is a risk that the PPP design includes an unrealistic combination of (politically) desirable features (high-level service, low prices, no redundancies, no subsidies, and short concession periods) that will make the project unattractive to bidders or unsustainable. Collecting informal feedback from the market during the preparation stage is therefore critical. More formal consultations can take place during project implementation as described in section 7.1.

7 Implementing PPPs

This chapter discusses some key activities related to implementing PPPs. The discussion focuses on the bid package, the contract, the procurement evaluation and process, and the award and negotiation. Not every stage of the procurement process is described in detail; highlights are discussed and more information is available through the resource materials listed in chapter 10. The PPP Project Sequence is outlined in Figure 2 (see page 15). Note that not all steps are strictly sequential, but have a degree of overlap.

7.1 Collecting Feedback from Potential Bidders

Once PPP has been structured and the preparatory work is underway, the transaction manager, responsible for ensuring that the process runs smoothly, transparently, and timely, should be in place.

During the transaction stages, it is important to have more formal interaction with potential bidders on the specifics of the transaction as designed. During these interactions, the government needs to guard against potential manipulation of the PPP design and process by the bidder to its advantage. Likewise, bidders should not enjoy any advantage (e.g., additional information) in the bidding process through such consultations. Discussions must avoid any bias toward a particular bidder and should be broadly held with sector stakeholders as well. The government may find it useful to be supported by PPP advisors in its interactions with potential bidders.

Two specific points of interaction with the potential bidders are:

Bid conference. During the bid conference, the government presents an outline of the project and bidders are invited to react and question. However, in a formal setting surrounded by competitors, some bidders may withhold concerns, be unwilling to share good ideas, or may collude with other bidders to push for a particular change.

Bid document consultation. Alternatively (or in addition to a bid conference), bidders may be invited to individually comment on the draft bidding documents, including the draft contract. This approach allows the government to identify issues of concern across the range of bidders. Government should send each bidder a full set of the responses to all questions raised, thus avoiding any semblance of favoritism.

A bidder will expect to have a clear understanding of the time line, the sequence of activities, the decision points, and the decision makers. This information should be given to bidders in

writing and should be regularly reviewed and reconfirmed. This clarity is necessary to provide bidders with a sense of confidence in the transparency and reliability of the process.

7.2 Notification and Prequalification

The bid package, contracts, and any marketing documents as well as protocols for communicating with the public and potential bidders need to be developed. The starting point in the actual procurement process is the public notification of the opportunity and the prequalification of bidders. As seen in section 7.3, different procurement methods entail different activities, but a prequalification process is common to many PPPs.

Under this process, an official notification is placed in local and international print and electronic media, advising the public of an opportunity to participate in the project. The content of the advertisement depends on applicable procurement rules. Companies are invited to request a prequalification package and seek access to further information.

An important aspect of information dissemination is the establishment of a data room (see Box 14 for a sample index). Prequalified bidders are invited to use this centralized repository of all information related to the PPP project, which is to be available to potential bidders. The information should be organized according to topics and as detailed, and granted equally and fairly to bidders. During a transaction, the room will be staffed by an attendant and bidders must sign and submit to data room rules (e.g., regarding access times, making photocopies, using other technical equipment, etc.). The amount of time and effort required to populate a data room should not be underestimated. Although the accuracy and completeness of the data in the data room are normally not guaranteed, the process organizers and the government nevertheless need to ensure that the data are not false or misleading. Bidders typically apply a degree of skepticism to the veracity of the data; nevertheless, they will question the seriousness of the process if very little data are available.

Prequalification ensures that only bidders with the minimum required expertise and financial strength are able to bid for the opportunity. This saves the government from the need to eliminate more rigorously from an overly large pool of bidders later in the process. It also encourages bidders that they will be included among a smaller number of equally capable competitors.

The prequalification documents usually contain:

- project information, such as the key characteristics of the project and the operating context (such as an information memorandum);
- instructions to bidders outlining the anticipated bid process and evaluation criteria; and
- a list of the documents required of the prospective bidders to demonstrate their suitability for the project.

Box 14: Sample Data Room Index

General
- I.1 Economic Data (time series)
  - I.1.a Gross domestic product (per capita)
  - I.1.b Inflation index
  - I.1.c Wholesale price index
  - I.1.d Real and nominal interest rates
  - I.1.e Census or population data and growth Rates
- I.2 Institutional
  - I.2.a Annual reports (time series)
  - I.2.b Donor and consultants' reports
- I.3 Geographical
  - I.3.a Map of country
  - I.3.b Maps of service areas

Legislation and Regulations
- II.1 National
  - II.1.a Constitution
  - II.1.b Civil Law
  - II.1.c Public Health Ordinance
  - II.1.d Food and Drug Act
  - II.1.e Planning Act
  - II.1.f Lands Act
- II.2 Resources Management
  - II.2.a Environmental Protection Act
  - II.2.b Others
- II.3 Corporate/Commercial
  - II.3.a Companies Act
  - II.3.b Income Tax Act
- II.4 Infrastructure Specific

Commercial Contracts
- III.1 Outsourcing Agreements

Human Resources
- IV.1 Staff Breakdown Chart by Region and Function
- IV.2 Current Staff Salary Levels
- IV.3 Collective Bargaining Agreements

Engineering and Technical Documents
- V.1 Operations and Maintenance
- V.2 Investment Programs
- V.3 Demand
- V.4 Fixed Assets & Technical Audits
- V.5 System Files and Drawings
- V.6 Others

Financial
- VI.1 Financial Statements
- VI.2 Budgets
- VI.3 Debt
  - VI.3.a Profile of loans/grants
  - VI.3.b Loan disbursements, repayments, and interest
- VI.4 Commercial
  - VI.4.a Billings
  - VI.4.b Collections
  - VI.4.c Breakdown of consumers by category

Tariffs
- VII.1 Approved Tariff Structure
- VII.2. Tariff Adjustment Proposals

Special Matters
- VIII Subsidies, Community Service Obligations, etc.

Source: Kathleen Booth and Heather Skilling. 2007.

In response, the prospective bidders submit information including:

- legal status of bidding entity;
- experience on comparable projects (including any relevant subcategories in terms of size of project, region, particular expertise);
- financial status/resources of bidder;
- ability to raise financing; and
- staff and resources to be directed toward the project.

A predetermined scoring matrix should facilitate assessment of the prequalification applications. The matrix sets out each criterion to be scored, the score assigned to each, and the respective weighting. The matrix can include special criteria such as expertise in servicing low-income customers or may prioritize local bidders if desired. It is important to be realistic about the potential pool of bidders and set the threshold sufficiently high to discourage nonserious or unqualified bidders, while maintaining a pool of bidders large enough for effective competition. The prequalification results in a short list of bidders invited to respond to the bidding package. Generally, a short list of between 3 and 5 companies is a manageable and competitive size.

7.3 Defining the Procurement Process

Some initial decisions need to be made regarding the procurement and the bid evaluation process. The choice of procurement method will depend on the government's budget, capacity, desire to encourage innovation, need for high-level inputs, vulnerability to corruption, and objectives of the PPP project. Three main options, distinguished by the level of competition they create, are available: (i) unsolicited proposals or direct negotiations ("sole sourcing"), (ii) competitive negotiations, and (iii) competitive bidding.

7.3.1 Unsolicited Proposals or Direct Negotiations

When confronted with an unsolicited proposal, the government has three options:

- direct negotiations to the offeror;
- purchase the project concept then competitively tender among a range of bidders; or
- offer original proponent a predefined advantage in recognition of the value of the original proposal (bonus system) and open-up bidding.

Entering into a sole-source process can save government time and money and may alert government to an unrealized opportunity for PPP. However, sole sourcing can encourage corruption through lack of transparency, and the cost benefits to competitive bidding are lost. Government has to be confident of its negotiation skills and its information to ensure that a sole-source deal is advantageous.

The government needs to ascertain that procurement laws and/or rules permit it to award such a contract based on direct negotiations. There is also an elevated risk that the fairness of the contract award will be challenged at a later stage, e.g., by disappointed potential bidders or by the political opposition. As such, a strategy of direct negotiations could be considered politically risky. Box 15 shows the strategy for dealing with unsolicited proposals in the Philippines.

Box 15: Unsolicited Proposals

Under the Philippines' Build–Operate–Transfer (BOT) Law, national or local authorities were able to accept unsolicited proposals for BOT projects on a negotiated basis if:

- The project involves a new concept or technology and is not already listed in the roster of priority projects identified by the government.
- No direct government guarantee, subsidy, or equity is required.
- The project is submitted to a price test or "Swiss challenge" from competitors.

The price test works as follows: the agency awarding the project must invite comparative proposals to any unsolicited proposal it has received. The invitation to tender must be published in a newspaper of general circulation for at least 3 weeks. The published invitation must inform potential bidders where to obtain tender documents; however, proprietary information contained in the original proposal is confidential and may not be disclosed in the tender documents. Competitors have 60 days to submit competitive proposals. If a lower-priced proposal is received, the original proponent has 30 days to match it and win the contract. Otherwise, the award goes to the lower bidder. This challenge has been used, for example, in the case of a New Zealand developer who submitted a proposal to the National Power Corporation to rehabilitate and maintain a 350-megawatt hydro plant, challenging an unsolicited proposal by an Argentine company.

Source: Republic of the Philippines. 1994.

7.3.2 Competitive Negotiations

Competitive negotiations entail inviting a small group of bidders to a structured negotiation. The bidders are aware of the presence of other bidders and there is pressure to obtain the best price. This arrangement is quicker and less expensive than full competitive process and can yield good prices. The selection of bidders to participate can be nontransparent and may not yield the best bidder pool. There is also an elevated risk of corruption. A time-consuming procurement process may be seen as an opportunity cost to the private sector. This needs to be weighed against the degree of and value to transparency.

7.3.3 Competitive Bidding

Most governments have rules requiring some form of competitive bidding for procuring any private sector good or service. In addition, most international lending institutions and assistance organizations require the use of competitive bidding procedures as a condition of any associated loan or technical assistance. Competition is expected to provide transparency in the process and avoid corruption, and provide a mechanism for selecting the best-value proposal based on criteria set.

Of course, the advantages of competition are seen only if there is sufficient interest to generate multiple bidders. A failed auction is highly visible and an embarrassment to the government—another reason careful preparation is important.

The typical competitive bid process has the following activities:

- Public notification of tender
- Contacting/marketing to potential bidders
  - preliminary information memorandum
  - road show
  - pre-bid conference
  - bid document consultation
- Preselection
- Shortlisting or Prequalification
- Tendering
  - selection of bid and evaluation process
  - distribution of bid documents and draft contract
  - interactions with bidders
  - evaluation and selection
  - negotiations and award
- Transition
  - transition/handover strategy
  - worker rights and payments.

The competitive bid process can either be one stage or two stages. In the single-stage process, technical and financial bids are submitted simultaneously in response to a request for proposals. In the two-stage process, a technical response is submitted first and comments are provided. In the second stage, a revised technical bid is submitted together with a financial bid.

Communication between the public and private sectors may be strictly limited or a degree of open (although structured) communication may be important to the success of a large-scale PPP.

Competitive bidding for basic operation, maintenance, and service contracts can be relatively straightforward as the scope of services is readily defined and often quantifiable. More complex PPPs like BOTs, concessions, and joint ventures are more challenging procurement processes because both the starting information and the result are often unclear. The typical information gaps, the length of time over which the contract is implemented, and the range of externalities all conspire to make it difficult to set finite targets and predict outcomes.

An example of a competitive bidding was the construction of Sydney's Orbital Motorway, see Box 16.

Box 16: M7 Sydney Orbital Motorway (Australia)

The M7 Motorway is a 40-kilometer (km) toll road that circulates western Sydney and interconnects a number of other motorways and major roads. As a public–private partnership (PPP), its development involved three tiers of government (federal, state, and local), together with extensive community consultation and a competitive bid process against specified design criteria. A specific agency, the Roads and Traffic Authority, managed the PPP process.

The road was constructed and is operated on a 34-year concession by a consortium which includes Transurban, Macquarie Infrastructure Group, and Leightons Holdings. Following the concession period, the motorway reverts ownership to the Government. The $2.3-billion project was delivered 8 months ahead of schedule and incorporates full electronic tolling technology. A parallel 40-km pedestrian and cycling facility was also constructed as part of the development. The motorway project included full environmental impact assessment as well as defined criteria for safety and maintenace performance.

Source: www.infrastructure.org.au.

7.4 Defining the Bid Evaluation Process

7.4.1 Initial Decisions

The evaluation process and criteria should be transparent. Transparency is achieved by supplying as much information about the process as possible, and by drawing up procedures that explicitly ensure that all parties are treated equally. Nevertheless, confidentiality during a bid process is also needed so as not to compromise the legitimate commercial interests of the parties.

Bids are typically evaluated in two broad categories: technical and financial. The relative importance of each should reflect the importance in achieving the specified objectives. The project objectives, project design, information in the bid documents, and evaluation criteria should also be consistent.

A first decision point is whether the technical evaluation will be on a pass–fail basis (with the deciding evaluation reserved for the financial) or whether both the technical and financial information will be evaluated and assigned weighted scores:

- Decision 1: Weighted technical and financial or pass/fail technical?
  - If weighted, what will the weights be?
  - If pass/fail, what will the minimum qualifying technical score be?
- Decision 2: How to divide points between technical categories and subcategories.

The technical and financial responses are presented in separate envelopes to ensure a discrete evaluation of each component. There are four variations on how the technical response might be presented:

- Option 1: Contains legal certification and bid bond. These are confirmed, financial envelopes are opened, and contract awarded to lowest price bid.
- Option 2: Contains technical and financial information used to substitute prequalification. Financial envelopes of surviving bidders are opened, and contract awarded to lowest price bid.
- Option 3: Contains technical proposal, which is scored as pass or fail. Passing bidders' financial envelopes are opened and contract awarded to lowest price bid.
- Option 4: Contains technical proposal, which is numerically scored. Contract awarded to best weighted average technical/financial score.

Likewise, there are four typical variations on the possible presentation of the financial response:

- Option 1: Bids based on price of shares or assets being sold;
- Option 2: Bids based on up-front payment combined with future concession fees;
- Option 3: Bids based on future tariff; and
- Option 4: Bids are for service fee—with or without incentive component.

7.4.2 Technical and Financial Evaluation

Evaluation criteria should be stated up-front on the bid data sheet. The technical evaluation typically takes into account:

- Quality of the work plan
  - services to be provided
  - methodology and approach
  - meeting performance standards and optimizing incentive compensation
  - innovations and improvements
  - training
- Quality of staffing plan
  - detail of staffing plan
  - appropriate experience reflecting required services in staffing plan
  - professional qualifications and experience of key staff as shown in curricula vitae.

The financial evaluation is based on:

- Bid prices as readout (currencies, amounts, and modifications or comments)
- Corrections for:
  - computational errors
  - provisional sums
- Corrected bid price
- Exchange of bids to single currency
- Formula for scoring bids if weighted technical/financial evaluation.

7.5 Bid Package

Depending on the type of contract and the local requirements, a bid package can range from several volumes of material to a concise document. The elements listed below are the basic components of a generic bid package:

- **Invitation for bids**: This is a short (one to two pages) document that provides an overview of the opportunity, specifies the deadline for bids to be submitted, and provides information for bidders to use in obtaining the full-bid package. An invitation for bids is typically published in relevant national and international journals. The invitation for bids will be reprinted as part of the bid package.

- **Instruction to bidders**: This provides general instructions to bidders regarding the opportunity, the content of the bidding documents, preparation and submission of bids, bid opening and evaluation, the bidder's conference or pre-bid meeting, and award of contract.

- **Bid data sheet**: The bid data sheet expands on the information provided in the instruction to bidders, indicating any special circumstances or conditions that the bidders must keep in mind. The data sheet also provides the bidders with specific details on where to submit bids, request clarifications, and who to contact regarding negotiations; the number of copies of the bid to be submitted; any special instructions regarding certifications or powers of attorney; the amount of bid security; and the evaluation criteria.

- **Draft form of contract**: The bid package includes a copy of the draft contract to provide the bidders an opportunity to comment on or mark up the contract. Such a process reduces the amount of time required for contract negotiations by ensuring that bidders agree to the form of contract prior to contract award.

- **Sample forms and procedures**: The package includes standard forms, which may include but shall not be limited to bid forms and price schedules, a bid security form, form of contract agreement, performance security forms, and bank guarantee forms.

In addition to the contents above, and depending on the requirements of any donors involved in a project, the package may include information on restrictions governing eligibility to bid on the opportunity and governing procurement using donor funds.

7.6 The Contract

Regardless of the option selected, the essential elements to be included in a contract are:

- The parties to the agreement;
- Interpretation: Sets forth the definitions of important terms and providing guidance on the interpretation of the contract's provisions;
- The scope, territorial jurisdiction, and duration of the agreement;
- The objective of the contract;
- Circumstances of commencement, completion, modification, and termination of contract;
- The rights and obligations of the contractor;
- The rights and obligations of the government;
- The requirement for performance bonds to provide security for government if the construction and/or the service delivery falls below standards;
- Insurance requirements to provide security for the insurable matters;
- Government warranties;
- Private sector warranties;
- Consequences to a change in law;
- Service quality, and performance and maintenance targets and schedules;
- The identification of regulatory authorities, if any, and the extent of their roles and authority;
- The responsibilities of the contractor and the government with regard to capital expenditures;
- The form of remuneration of the contractor and how it will be covered, whether from fixed fee, fixed fee plus incentives, or another arrangement;
- How key risks will be allocated and managed;
- The contractor's rights and responsibilities with regard to passing through or entering public or private property;
- Reporting requirements;
- Procedures for measuring, monitoring, and enforcing performance;
- Procedures for coordinating investment planning;
- Responsibility for environmental liabilities;
- Procedures for resolving disputes;
- Delay provisions describing what is and is not an excuse for a delay in construction or operations;
- Force majeure conditions and reactions;

- Procedures to be followed when either party to the PPP contract wishes to change any material portion (variation) of the contract;
- Indemnification circumstances;
- The rights of each party to any intellectual property brought to the project or created during the project, including the steps to be taken to protect the intellectual property of third parties, such as information technology software manufacturers;
- Conflict of interests and dispute resolution;
- Description of the conditions under which either party may terminate the contract, the processes to be undertaken in that regard, and the consequences to each party of a termination;
- The circumstances that may permit either the government or any financial institution to "step in" to the contract to protect its rights under the PPP contract;
- Consequences of a change in the ownership or key personnel of the private partner;
- Mechanisms whereby the parties to the PPP contract will interact with each other going forward;
- Requirement that each party comply with all laws pertaining to the project, including obtaining environmental, zoning, planning, and other permits;
- Conditions by which public sector employees are employed by the private sector contractor, including any restrictions on terminations or redundancies for operational reasons; and
- Conditions precedent: Describes any conditions precedent to be fulfilled by either party before the contract takes effect.

This list is illustrative and does not capture every clause required in a contract. The final content of the contract will depend on the project scope, local legal requirements and precedent, and advice of legal advisors.

7.7 Negotiations and Contract Start

Ideally, the bulk of issues should be sorted out during the bid process. However, negotiations present the last opportunity to work through contractual issues and both sides may have saved issues to be dealt with at this last stage. The government side is often the less experienced of the parties at the negotiation table and it is vital that it be supported by appropriate advisory expertise, a clear negotiating strategy, and a fallback plan (which may be the second-place bidder).

Only critical personnel should attend negotiations and minutes of the issues covered must be kept. Negotiations have to be scheduled with sufficient time for preparation, and conducting negotiations in several rounds may be necessary.

Negotiations should not reopen items previously dealt with or should not undermine the integrity of the bidding process by deviating from the original proposal.

Part of the negotiations will focus on conditions precedent, i.e., the conditions to be met by both sides to declare the contract operational. The timetable and process for transition should also be discussed. These discussions will cover:

- Registration actions such as the legal incorporation or registration of any joint ventures or project specific companies,
- Payment of bonds and guarantees, and
- Worker transitions
  - terminal benefits
  - collective bargaining agreements
  - transfer of terms of service
  - redundancies.

7.8 Key Implementation Issues

Moving into implementation, several key considerations for the project partners will help ensure success:

- **Stakeholder management during implementation**. The need for effective communication with stakeholders does not end with contract award. Instead, the early stages of a project are a critical time for the winning bidder to establish the trust of the communities facing development. As the PPP moves into implementation, the selected bidder should have a well-detailed plan for ongoing communication with the community, including an appointed liaison.

- **Ensure the right people on both sides of the relationship are in place**. The key staff should have the right technical and managerial skills and an established protocol for working together. Both parties should be well familiar with the details of the contract and both should strive for an atmosphere of mutual respect.

- **Ability to manage variations**. The management of PPP contracts requires some flexibility on both sides and a means to adapt the terms of the contract to reflect inevitable changes in the operating environment that could not have been anticipated or dealt with in the contract. Contracts should be capable of change (terms, requirements, scope, etc.) and the relationship should be strong and flexible enough to facilitate it. Good contract management is not reactive, but aims to proactively anticipate and respond to the business needs of the future.

8 Specific Pro-Poor Activities in PPPs

The private sector is seen as a potential source of the expertise, efficiency, and capital, which are required to improve and expand service, but which are often lacking in the public sector. In many cases, the private sector has been able to successfully partner with public utilities to the advantage of consumers. However, experience has shown that many private operators were unable or unwilling to improve or expand services to low-income groups (LIGs), at least in the short to medium term. The underlying cause is that the private sector may have little incentive to extend services to low-income areas due to the high cost of providing the service and low profits due to lack of a payment culture, lack of tenure, low consumption, and low-cost structures for those customers.

The concerns voiced by consumers, NGOs, and representatives of civil society have translated into new, targeted approaches to the needs of LIGs within the rubric of PPP structures. The most explicit of these approaches is a new approach called output-based aid or OBA. However, there are other ways in which the PPP process and the basic forms of PPP can be approached from a pro-poor perspective. When this approach is combined with tailored interventions to alleviate service constraints, PPPs can provide adequate incentives to the private sector, involve the LIGs, and balance the financial and social risks and rewards to all stakeholders.

8.1 Pro-Poor Characteristics of PPP Options

Reexamining the range of options and any inherent advantages or disadvantages in terms of service to the poor is important. Then it is possible to consider specific pro-poor interventions that might be attached to a process. As a component of a reform package, a PPP can be tailored to address specific reform objectives. The PPP process and contract can therefore be tailored, more or less, to the requirements of LIGs to the degree desired and feasible.

Service and management contracts

The operator has no responsibility to finance operations or to invest in the system and payment is not fully tied to the amount of tariff revenue collected. All resources apart from specific expertise are provided by the public sector, and the operator can only make best use of those resources provided.

As the operator has no responsibility to invest in the system, these contracts, by their very nature, cannot require the operator to extend or provide service to low-income areas. How-

ever, the contracts can require expertise in social issues and in developing and implementing any funded low-income strategies.

Lease and affermage contracts

It is possible to structure compensation incentives into a lease that encourages providing service to LIGs within the served area. However, extension of the system into unserved areas remains with the public sector (or as negotiated) and may not be a priority for either public or private sector. If the low-income areas fall within the existing service area, the operator may be motivated to provide service for the sake of increasing tariff revenue or remuneration. However, these areas may be a lesser priority than other consumer groups within the service area.

Concessions

Concessions provide the operators with an inherent incentive to provide service to as many customers as possible. Under the compensation scheme of a concession, the operator is allowed to keep most or all of tariff revenues at an agreed rate (or formula) for a unit of water. The operator thus is motivated to sell as much water as possible, potentially to LIGs as well as to others. However, the operator also has an incentive to keep operating costs as low as possible to maximize the profit margin. The operator will thus seek low-cost ways to provide service and may be reluctant to expand the network, particularly into areas that are geographically challenging or where the culture of payment is uncertain.

Related to the compensation issue is the scope of a concession. Under this contract type, the operator typically has the obligation to finance and operate not only the existing system, but also any expansion of the system. Relevant to LIGs, the operator would have to determine through cost-benefit analysis that expansion to unserved areas will generate a sufficient return on investment. If the government wants a concessionaire to prioritize expansion to low-income areas, this should be specified in the contract or an incentive should be provided. Box 17 highlights Peru's incentives for rural telephony expansion.

8.2 Pro-Poor Interventions in the Context of PPPs

To encourage the operator to serve LIGs under PPP, it is vital to consider low-cost mechanisms of providing service, pricing structures that encourage customer payment, low-cost financing for system extension, and other contract mechanisms relevant to the specific characteristics of the low-income population.

PPP arrangements might be made more responsive to the requirements of low-income consumers in many ways. These include both contract provisions or content and changes in the overall approach to the reform agenda. Specifically:

Box 17: Incentives for Rural Telephony Expansion in Peru

As an incentive for private telecommunications operators to expand service to rural areas of the country, the Government of Peru has structured public–private partnership (PPP) arrangements that award a subsidy for pay phones installed in predefined target areas. The program uses a "least subsidy" approach to achieve the desired results for minimal cost. Operators bid for the right to provide services to rural areas, and the winning bidder is that who offers to install the phones for the least subsidy. Payment of the subsidies is linked to performance, with part paid upon award of the contract, part once the pay phone has been installed, and the remainder in semiannual installments over the life of the contract, with these payments tied to the operator's achievement of key performance indicators. This structure not only provides incentives to operators to extend service to low-income areas, but places equal priority on the maintenance of infrastructure and the quality of service to low-income customers.

Source: Cannock, Geoffrey. 2001. Telecom Subsidies: Output-Based Contracts for Rural Services in Peru. *Viewpoint Note* No. 234.Washington, DC: World Bank, Finance, Private Sector, and Infrastructure Network.

Reform framework

- The policy commitment to LIGs must be clarified and strengthened.
- There needs to be common agreement on which segments of the population constitute LIGs, as well as which institutional entity is responsible for updating the definition of LIGs and monitoring their access to service.
- Current data should be collected on LIGs in terms of service, preferences, and access. These data would be used to inform strategies and coverage targets and set a baseline for measuring progress. Consultation within the LIG community should be ongoing to understand current service levels, constraints, and preferences.
- There should be a frank consideration of the role of existing or potential small-scale providers or informal service providers and the potential to use those providers for the short to medium term to fill gaps in service until coverage through PPP is expanded.
- The existence of any legal prohibitions against serving informal settlements or to tailoring service standards to the constraints of a community should be reexamined.

Financial considerations

- The government's policy on subsidies should be reexamined in the context of cost recovery goals under PPP.
- There should be consideration of whether connection fees are a greater disincentive to network service than the ongoing payments for service. If so, the connection fee should be reexamined in terms of level and application.
- Mechanisms to facilitate payment, such as prepaid meters, increased paypoints, frequent billing, and others should be considered.

The PPP contract

- The contract should include the flexibility to implement the right level of service appropriate to the financial capability of the LIGs, with potential to upgrade.
- Likewise, the technology and construction standards should be appropriate but low cost.
- The potential for LIGs to contribute in-kind through labor should be considered.
- The contract should allow for partnership or coexistence with small-scale providers or communities where appropriate to reach a particular LIG.

The PPP bid process

- If bidders were to have obligations in terms of LIG service, they require reliable data on LIGs and site visits.
- Bidders can be required to present their past experience in serving LIGs and to explain their present strategy under the PPP contract at hand.

8.3 Output-Based Aid Contracts

OBA provides a way in which international financial institutions (such as the Asian Development Bank) can directly structure its financing to benefit poor people, even when the service provider is a private company.

OBA is the use of explicit, performance-based subsidies funded by the donor to complement or replace user fees.[8] It involves the contracting out of basic service provision to a third party—such as private companies, NGOs, CBOs, and even public service providers—with subsidy payment tied to the delivery of previously specified outputs. This means that targeted and valuable subsidies to disadvantaged populations are funded through donor funds. The private partner, meanwhile, can only recover this funding by achieving specific performance outcomes. A global multi-trust fund was created in 2003, the Global Partnership for Output Based Aid, to provide increased access to reliable basic infrastructure and social services to the poor in developing countries through the wider use of OBA approaches (see Box 18 for information).

Generally, OBA schemes finance three types of subsidies:

- **One time**. These would include subsidies for connections with the collected user fees covering longer-term operation and maintenance costs. These have been the most common under OBA schemes to date.
- **Transitional**. Transitional subsidies are used to ease the transition to full cost recovery tariffs.

- **Ongoing**. Ongoing subsidies are linked to a sustainable source of funding such as general tax revenues, earmarked tax revenues, or explicit cross-subsidies. These subsidies are used to complement the existing funding source. This has been less used and requires longer disbursement periods.

OBA also transfers risk to the operator in several ways. First, OBA links payment of the subsidy to performance outcomes, maintaining pressure on the operator to reach agreed upon service and commercial targets. Second, OBA schemes determine and pay the total level of subsidy ex post. Thus, the operator runs some risk that payment will not be made by government as agreed.

Typically, OBA payments relevant to pro-poor service would be linked to outcomes related to consumption and coverage expansion, but OBA schemes are also applied to BOT projects that might have an indirect, positive impact on the poor.

For OBA to work, there has to be a process for monitoring and verifying delivery of the specified outputs, to pay out an accurate subsidy.

Box 18: The Global Partnership for Output-Based Aid

The Global Partnership on Output-Based Aid (GPOBA) is a multi-donor trust fund created in 2003 and administered by the World Bank, with funding support from the World Bank, the United Kingdom's Department for International Development, the International Finance Corporation, and the Netherlands Government. The goal of GPOBA is to provide increased access to reliable basic infrastructure and social services to the poor in developing countries through the wider use of OBA approaches. GPOBA will demonstrate and document OBA methods of supporting the sustainable delivery of basic services (water, sanitation, electricity, telecommunications, transportation, health, and education) to those least able to afford them and to those currently without access. Currently, GPOBA funds are eligible to support the following:

- Funding of output-based payments under OBA schemes to facilitate the piloting of innovative, small-scale projects;
- Studies and other inputs to assist in the design, implementation, and evaluation of particular schemes intended to pilot the application of OBA approaches to the delivery of eligible services; and
- Publications, workshops, and conferences to help identify and disseminate emerging knowledge on issues relating to the role and application of OBA approaches.

For more information on OBA, visit the GPOBA website at www.gpoba.org.

9 Framework for Measuring, Monitoring, and Reporting on Results

A successful PPP depends in large part on the capacity of the government to keep the contract on track. This entails setting clear requirements of the partnership, monitoring the performance of all parties to the contract, reporting on results, and enforcing contract provisions that are not met.

Different entities are available to support, or to take on full responsibility, for monitoring progress against the targets specified in a contract. These entities include:

Contract monitoring unit. In some cases, a separate regulator does not exist or is not required. In this case, a unit can be developed within government to receive and verify reports on progress against the contract terms. This unit may be located within the sectoral ministry, a more independent ministry such as finance, or may be the PPP unit. To accomplish contract monitoring, the contract has to contain explicit details on the targets, acceptable procedures of measuring performance results, and the reporting regime. The unit, in addition, has to develop a procedures manual for verifying performance against the contract and for responding to any contract deviations. Where incentive payments are to be rendered, the unit should also have a method for ascertaining the basis for such payments, making payment, and reporting on and accounting for payments made.

Regulator. Where a regulator is present, there is approximately the same process as above, but the monitoring is against the provisions of sector regulations. This means overarching principles and methodologies are set out in regulations and the implementation detail is contained in the contract and a license (if applicable).

The regulator has the mandate to monitor compliance against the regulations and the license, publishes reports on performance, and enforces any penalties for nonperformance. Like a contract monitoring unit, the regulator must have procedure manuals to dictate the application of its responsibilities. In Papua New Guinea, for example (Box 19), created the Independent Consumer and Competition Commission to be an independent regulation body on contracts covering electricity, telecommunications, ports and harbors, and postal services.

Box 19: Independent Regulation: The Independent Consumer and Competition Commission of Papua New Guinea

The Independent Consumer and Competition Commission (ICCC) of Papua New Guinea (PNG) was created in 2002 with jurisdiction over electricity, telecommunications, ports and harbors, and postal services. ICCC has the power to determine market structures, tariff setting, and service standards. The provisions of the ICCC Act apply to all businesses in PNG including government enterprises. The ICCC Act also applies to business outside PNG, which affects the PNG market.

In exercising its powers under the ICCC Act, ICCC focuses on the following primary objectives:

- enhance the welfare of the people by promoting competition and fair trade and protecting consumers' interests;
- promote economic efficiency in industry structure, investment, and conduct; and
- protect the long-term interests of the people with regard to the price, quality, and reliability of significant goods and services.

Specifically, ICCC is to:

- promote and protect the bona fide interests of consumers with regard to price, quality, and reliability of goods and services;
- ensure that users and consumers (including low-income or vulnerable consumers) benefit from competition and effeciency;
- promote and encourage fair trade practices;
- prevent the misuse of market power;
- promote and encourage the efficient operation of industries and efficient investment in industries;
- ensure that regulatory decision making has regard for any applicable health, safety, environmental, and social legislations; and
- facilitate effective competition and promote competitive market conduct.

The commission consists of three commissioners—one full-time commissioner and two associate part-time commissioners appointed for 5 years. By March 2004, ICCC was fully operational with over 40 staff.

Sources: www.iccc.gov.pg; www.eapirf.org/MenuItems/Organization/memberprofiles/ICCC.asp

Independent auditors. Some countries find it advantageous to procure the services of independent technical and/or financial auditors. This may be in a addition to or instead of the role of the contract monitoring unit or regulator. In some cases, the auditor provides an independent assessment of the performance, which provides credibility and support to the overall monitoring. In other cases, this contracted expertise replaces the need to retain an ongoing regulatory function. See Box 20 for Gaza's experience in contracting out regulation.

Box 20: Contracting Out Regulation in Gaza

The Gaza Management Contract, one of the first private sector initiatives in the Middle East water sector, used an innovative contracting out strategy to overcome the limitations posed by weak local regulatory capacity. The contract used private "third party" technical and financial audits to calculate the performance-linked management payment. The auditor evaluated the operator's declared performance against the targets set out in the management contract, once or twice a year. The contract created a simple qualitative scale to measure progress against target. If the operator earned "excellent" in the performance variables, its weighted average composite score would be 1 and this would allow it to earn 100% of the allotted annual performance linked fee of $750,000. In the opinion of the Palestinian Water Authority (PWA), the use of an external auditor helped increase pressure on the operator to perform. The auditor was also able to bridge the stark information asymmetry gap between the operator and PWA. This example highlights the potential for using external auditors for formulating binding recommendations and addressing issues of lack of competence and limited independence in nascent regulatory agencies.

Source: Contracting Out Utility Regulatory Functions, Environmental Resources Management. January 2004.

An important role of any of these entities is to report on performance. This is accomplished through websites, published reports, reports to parliament, and information made available to customers.

While these entities initially employ international experts to strengthen capacity, the goal in the long run is to transition to fully local staff. This can be accomplished through training and effective twinning with regional and international peers to provide ad hoc advice, often from a regional perspective.

10 Resources and Tools

10.1 Websites — General PPPs

Organization	Website
African Development Bank Group (AfDB)	www.afdb.org
Asian Development Bank (ADB) – Private Sector Development Section	www.adb.org/PrivateSector/default.asp
Business Partners for Development	www.bpdweb.org
East Asia and Pacific Infrastructure Regulatory Forum (EAPIRF)	www.eapirf.org/
Global Partnership on Output-Based Aid	www.gpoba.org/index.html
Inter-American Development Bank (IADB)	www.iadb.org/topics/subtopics.cfm?subtopicID=APP&language=English&topicID=PS&parid=2&item1id=8
International Finance Corporation (IFC) website on Asian Infrastructure investment	www.ifc.org/ifcext/eastasia.nsf/Content/Infrastructure
Organisation for Economic Co-operation and Development (OECD)	www.oecd.org
Public–Private Infrastructure Advisory Facility (PPIAF)	www.ppiaf.org/
United Nations Development Programme (UNDP) Tools for pro-poor municipal PPP	http://pppue.undp.org/toolkit/MOD112.html
United States Agency for International Development (USAID) Economic Growth and Development	www.usaid.gov/our_work/economic_growth_and_trade/eg/privatization.htm
World Bank	
• Papers, websites, and case studies on public–private partnership (PPP)	http://rru.worldbank.org/PapersLinks
• Toolkits	http://rru.worldbank.org/Toolkits/
• Public Policy interventions	http://rru.worldbank.org/PublicPolicyJournal
• World Bank Privatization Database	http://rru.worldbank.org/Privatization

10.2 Websites — PPP Organizations and Units

Organization	Website
B-O-T Center (Philippines)	www.botcenter.gov.ph
Cabinet Office (Japan)	www.cao.go.jp/index-e.html
Canadian Council for PPPs	www.pppcouncil.ca
Industry Canada: *Public-Private Comparator*	http://strategis.ic.gc.ca/pics/ce/ic_psc.pdf
Infrastructure Partnerships Australia	www.infrastructure.org.au
Irish Government PPP Unit	www.ppp.gov.ie
Ministry of Finance (Thailand)	www2.mof.go.th
Ministry of Planning and Budget (Republic of Korea)	www.mpb.co.kr/english.html
National Council for Public-Private Partnerships (United States)	www.ncppp.org
Partnership Victoria (Australia)	www.partnerships.vic.gov.au
Public-Private Partnership Office (Canada)	http://strategis.gc.ca/epic/site/pupr-bdpr.nsf/en/Home
Public-Private Partnerships: A Canadian Guide (2001)	http://strategis.ic.gc.ca/pics/ce/p3guide_e.pdf
South African National Treasury PPP Unit	www.ppp.gov.za

10.3 Websites — Sector-Specific Infrastructure

Federal Highway Administration, Department of Transportation (United States)	www.fhwa.dot.gov/ppp/dbb.htm
World Bank	
• Performance-based Contracting for Roads	www.worldbank.org/transport/roads/resource-guide/index.html
• PPP in Infrastructure	http://ppi.worldbank.org/
• PPP Toolkit in Highways	http://rru.worldbank.org/Toolkits/PartnershipsHighways/
• Toolkits for Private Participation in Water and Sanitation	www.worldbank.org/html/fpd/water/wstoolkits
World Bank Institute	
• Learning materials related to PPP in Infrastructure	http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/PPPILP,,menuPK:461142~pagePK:64156143~piPK:64154155~theSitePK:461102,00.html

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Endnotes

[1] This chapter is compiled from the analysis contained in three Notes on Public Policy for the Private Sector produced by the World Bank/International Finance Corporation (IFC). These are: Note 216, October 2000, Melissa Houskamp and Nicola Tynan; Note 250, October 2002, Ada Karina Izaguirre; Note 299, October 2005, Ada Karina Izaguirre; Note 216, and Note 303, February 2006, Sunita Kikeri and Aishetu Kolo.

[2] Privatization proceeds in this context refer to monetary receipts to government generated by transactions such as divestment, concessions, and leases.

[3] See endnote 2.

[4] See endnote 2.

[5] Schur, Michael, Stephan von Klaudy, and Georgina Dellacha. 2006. The role of developing country firms in infrastructure: A new class of investors emerges. Public–Private Infrastructure Advisory Facility (PPIAF) *Gridlines Note* No. 3. April.

[6] PPIAF is a multi-donor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement. Launched in July 1999, PPIAF was developed at the joint initiative of the Governments of Japan and the United Kingdom, working closely with the World Bank.

[7] This section is drawn from the World Bank Tool Kit on Public–Private Partnership in Highways which contains additional detail and simulations. Available: http://rru.worldbank.org/Documents/Toolkits/Highways/2_CARAC/index.htm.

[8] From the World Bank Output-Based Aid Guidance Note for Staff.

About the Handbook

Over the past 2 decades, Public–Private Partnership (PPP) schemes have become widely used in many countries to provide services and infrastructure. Despite their prevalence as a policy and economic tool, there remains a continuing interest in information on PPPs from interested stakeholders including government, civil society, private sector, nongovernment organizations, and academia.

This handbook is an introductory primer on PPPs in the context of development finance. It aims to build knowledge on the key features of PPPs as well as structuring options, implementation issues, and experience with applying PPPs to the provision of public goods and services.

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6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org
Publication Stock No. 071107

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Printed in the Philippines