Public-Private Partnership Projects in Infrastructure

Investment in infrastructure is critical to economic growth, quality of life, poverty reduction, access to education and health care, and achieving many of the goals of a robust economy. But infrastructure is difficult for the public sector to get right. Public-private partnerships (PPPs) can help; they can provide more efficient procurement, focus on consumer satisfaction and life cycle maintenance, and provide new sources of investment, in particular through limited recourse debt. However, PPPs present challenges of their own. This book provides a practical guide to PPPs for policy makers and strategists, showing how governments can enable and encourage PPPs, providing a step-by-step analysis of the development of PPP projects, and explaining how PPP financing works, what PPP contractual structures look like, and how PPP risk allocation works in practice. It includes specific discussion of each infrastructure sector, with a focus on the strategic and policy issues essential for successful development of infrastructure through PPPs.

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Public-Private Partnership Projects in Infrastructure: An Essential Guide for Policy Makers

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CAMBRIDGE
UNIVERSITY PRESS

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Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press
32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org
Information on this title: www.cambridge.org/9780521152280

First published 2011

Printed in the United States of America

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication data
Delmon, Jeffrey.
Public-private partnership projects in infrastructure : an essential
guide for policy makers / Jeffrey Delmon.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-521-76396-7 (hardback) – ISBN 978-0-521-15228-0 (pbk.)
1. Infrastructure (Economics) 2. Public-private sector
cooperation. 3. Risk assessment. 4. Public contracts. I. Title.
HC79.C3D443 2011
338.9–dc22 2010031510

ISBN 978-0-521-76396-7 Hardback
ISBN 978-0-521-15228-0 Paperback

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Acknowledgments

I would like to thank my colleagues from the World Bank, who helped review certain parts of this book, in particular peer reviewers Mark Moseley, Joel Kolker, and Will Dachs (now with the South African PPP Unit); as well as Vickram Cuttaree, Yuriy Myroshnychenko, Paul Noumba Um, and Victoria Rigby Delmon; Amit Burman for his editorial skills; and Chalida Chararnsuk for helping make it beautiful. I would also like to thank the Public-Private Infrastructure Advisory Facility[1] (PPIAF) for their kind support in disseminating this work in French and Russian to those who might benefit from it most.

[1] PPIAF is a multidonor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private-sector involvement (for more details, visit www.ppiaf.org).

And, most importantly, my thanks to Vicky, Alex, and Natasha.

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— ✣ CHAPTER ONE ✣ —

Introduction

Poor infrastructure impedes a nation's economic growth and international competitiveness.[1] Insufficient infrastructure also represents a major cause of loss of quality of life, illness, and death.[2] Infrastructure projects have high social rates of return; research indicates that the growth generated by infrastructure investment is pro-poor, with income levels of the poor rising more

[1] "Infrastructure at the Crossroads: Lessons Learned from 20 Years of World Bank Experience," (World Bank, 2006); *Infrastructure and the World Bank: A Progress Report* (World Bank, 2005)

[2] Willoughby, "Infrastructure and the Millennium Development Goals," (October 2, 2004). For further discussion of the importance of infrastructure to economic growth, social cohesion, quality of life, education, health, social development, environmental management, mobilization of private investment, and job creation, please see http://www.worldbank.org

than proportionately to overall income increases.[3] Yet, whereas the public sector provides the vast majority of financing for infrastructure services, investments have not matched demand, and governments are seeking methods to improve the efficient procurement of infrastructure services.[4] Public-Private Participation (PPP) in infrastructure is one of the tools in a policy maker's arsenal to help increase investment in infrastructure services and improve its efficiency.

Terminology

PPP is used here in its most inclusive form, to mean any contractual or legal relationship between public and private entities aimed at improving and/or expanding infrastructure services, but excluding public works contracts. The term "government" will be used to mean the level of government responsible for the reform processes, whether it be the federal, state, or municipal government. For ease of reference, the two counterparties to the main project contract will be referred to as the "grantor" on the public side and the "project company" on the private side.

[3] Calderón and Servén, "The Effects of Infrastructure Development on Growth and Income Distribution," Policy Research Working Paper (World Bank, 2004).

[4] "Sustainable Infrastructure Action Plan FY 09–11," (World Bank, 2008).

PPP represents an approach to procuring infrastructure services that is radically different from traditional public procurement, with numerous associated challenges. This book provides a practical guide to PPP and is intended in particular for policy makers and strategists needing a good understanding of the key issues specific to PPP development and financing. A particular focus is given to good preparation and thoughtful implementation.

- PPP projects are often prepared in a hurry, with little funding or expert assistance. This is a critical error. A good feasibility study, performed by PPP experts and focused on all aspects of project viability (in particular, value for money – see Box 2.1) is invaluable.
- PPP projects need to be strategic priority projects, part of a sectorwide strategy and policy framework.
- The government will play a key role in ensuring the project is implemented properly, monitoring the private investors, and responding quickly and thoughtfully when changes occur or conflicts arise, to avoid potential disputes.

In the world of PPP projects, there are numerous options, structures, solutions, and strategies. There is no perfect approach to PPP, and this book will not endeavor to discuss every option. In the same way, a number of financing options, public and private, are available for PPP. This text will discuss the most risk-specific and

common mode of financing for PPP, namely project financing, which is also known as "limited recourse" or "non-recourse" financing.

This book represents personal experience in the field and collective shared wisdom from other practitioners. The market for project financing and the risks that parties will accept vary from place to place and from project to project. Given the key relevance of this book to developing markets, it focuses on developing country examples. This text is not a definitive guide to risk allocation and market practice, but rather an introduction to the issues that arise in such contractual structures. Due to the nature of the subject matter of this text, a number of terms of art will be used throughout. The most frequently used terms are defined in the glossary, which may be found at the end of the text.

Key Messages for Policy Makers[5]

✓ *Be patient*. PPP is not a quick fix; it takes time to develop and implement properly. Generally, effort spent in advance of procurement to prepare the project properly will save much more time and frustration later. Think

[5] Throughout the text, specific, candid advice is provided for policy makers. This advice is summary and generic, and should be treated accordingly.

Continued

through contingencies in advance and make sure you are happy with the project structure and specification before going to the market.

- ✓ *Prepare well*. PPP requires up-front investment of staff and money to develop projects properly, in particular to pay for expensive external advisers. Project development costs the government 3 percent or more of project construction cost. The benefit of this up-front investment is obtained over time, because PPP provides for management and funding for the whole life of the assets and therefore addresses project risks early.
- ✓ *Prepare the government to play its part from project development to expiry*. Even where a comprehensive PPP is envisaged, the government will play an essential role in monitoring and regulating the project and the sector.
- ✓ *Be ready for challenges*. In any long-term relationship, change happens. PPP is, above all, a partnership, and it needs to be designed with challenges, changes, and resolution in mind. Problems need to be elevated to appropriate levels of management before they become disputes or worse.

For a more extensive discussion of the issues set out in this book, see Delmon, *Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risk* (2nd ed., 2009), published by Kluwer International and the World

Bank, with support from PPPAF. Reference should also be made to www.worldbank.org/pppiresource for further discussion of legal and contractual issues in PPP.

The crisis ravaging the global economy at the time of publication of this book has fundamentally altered the PPP landscape. The implications of such financial and economic crises on PPP will also be discussed herein.

Chapter 1 provides an introduction to the fundamentals of PPP, discussing the nature of PPP and the investment climate needed to attract PPP. Chapter 2 describes how to select a good PPP project and how to prepare that project for implementation. Chapter 3 discusses the financing of PPP, the source of potential funding, how project financing (also known as limited recourse financing) works, and what governments can do to improve financing flows for PPP. Chapter 4 explains the risks encountered in PPP projects, and Chapter 5 describes how those risks are allocated among the project parties through the different project contracts. As will be seen, the approach to risk allocation and project structures differs by sector. Chapter 6 discusses what happens after the contracts are signed, financing is obtained, and the PPP project is implemented. Chapter 7 provides a summary of some of the key risk allocation characteristics of PPP in different infrastructure sectors. Chapter 8 discusses the implications of financial and economic crises on PPP

and proposes some options to adjust projects accordingly. As annexes, the reader will find a summary of the key messages provided for policy makers, a glossary of key terms, and a list of key readings and web sites on PPP for further reference.

1.1 Fundamentals of PPP

In today's world, infrastructure is primarily a public sector issue, with amounts invested annually in infrastructure by the public sector vastly exceeding that invested by the private sector. PPP is an arrangement for the private sector to deliver infrastructure services for the public sector or to assist the public sector in its task of delivering infrastructure services to the public. Even for most public service providers, private involvement forms an essential part of successful service delivery, whether through construction contracts, service agreements, delivery of goods, or joint ventures. PPP can help mobilize this private involvement more efficiently.

Figure 1.1 sets out a number of commonly used PPP structures.[6] A few of the key acronyms and terms follow for reference.

[6] For a general discussion of PPP structures and why current nomenclature is woefully inadequate, see Delmon, "Understanding

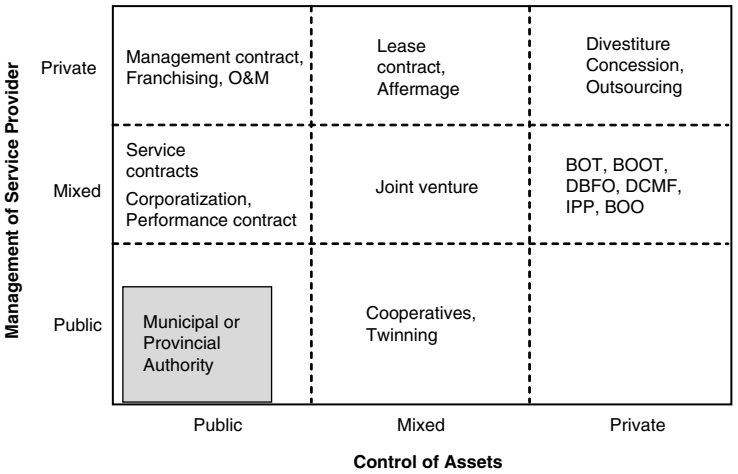

Figure 1.1. ***PPP structures.***

Build-Operate-Transfer (BOT), Build-Own-Operate (BOO), Build-Own-Operate-Transfer (BOOT), Design-Build-Finance-Operate (DBFO), Design-Construct-Manage-Finance (DCMF), and **Independent Power Producer (IPP)** are similar in nature, looking to the project company to build (or refurbish, if you replace the "B" with an "R") and operate a facility and deliver services to a utility, a service delivery

Options for Private Participation in Infrastructure: Seeing the Forest for the Trees: PPP, PSP, BOT, DBFO, Concession, Lease…" (World Bank, 2010).

entity (like a health service trust), or the consumer – be it power generation, water treatment, a road, a hospital, or otherwise. The facility may or may not be transferred to the government after a defined period of time (as sometimes indicated by the letter "T" at the end of the abbreviation).

Corporatization involves a utility that is, in public ownership, being run in a manner similar to that of a private sector entity, using incentive mechanisms for staff and management similar to those used in the private sector. For example, a corporatized utility may be structured as a limited liability company, with its share capital controlled by the public, while publishing the equivalent of an annual report containing a profit and loss account, balance sheet, and cash flow data, giving a clear picture of the utility's finances and where any inefficiencies may be found (typical public utilities lack transparency in their accounts, making it difficult to isolate inefficiencies or properly incentivize management).

Franchizing, Cooperatives, and **Twinning** involve using an experienced operator or utility's expertise and reputation through a local company's manpower and resources.[7]

[7] See the Water Operators Partnerships – Africa, "An Action Program to Enhance the Performance of African Water and Sanitation Utilities" (2008).

Lease contract, affermage, and **concession** generally involve the project company delivering services directly to the consumer and differ primarily in whether the project company is responsible for new asset investment (e.g., in an affermage,[8] generally it is not) and whether the project company owns the assets (e.g., in a concession, generally it does).

Performance contracts, service contracts, management contracts, and **operation and maintenance (O&M) contracts** are structures whereby a private company provides services to a utility/grantor (e.g., management services, improving billing and collection services, leak reduction, or marketing), with payments generally linked to performance.

[8] There is a degree of confusion in the use of the term "affermage." Certain authors have suggested that affermage agreements do not involve any obligations to make capital investments (see, e.g., Guislain and Kerf, *Concessions – The Way to Privatize Infrastructure Sector Monopolies*, Viewpoint, Note No. 59 (World Bank, 1995) and Hall, "Public Partnership and Private Control – Ownership, Control and Regulations in Water Concessions in Central Europe" (May 1997), at http://www.psiru.org). In contrast, other authors have asserted that affermage agreements can include an obligation to make capital investments, so long as the cost of the investment can be recovered during the lifetime of the agreement (see, e.g., "Third Party Access in the Water Industry," (Tasman Asia Pacific), at http://www.ncc.gov.au).

Key Messages for Policy Makers

- ✓ *PPP is by nature flexible*. Look first at what you need, then design your approach based on those needs. Do not look first at what others have done, because your context may be very different. That said, a careful analysis of experiences in other jurisdictions is always useful.
- ✓ *Confirm project viability periodically to avoid losing focus*. First decide you want PPP on a rational, fundamentally sound basis, then keep reminding yourself why you chose PPP, because its implementation can be challenging. Periodically verify that the project is meeting those objectives.
- ✓ *Government must regulate and monitor PPP*. This must be an integral part of project design. PPP or not, the public sector is always the final authority and will be ultimately responsible for the provision of public services.
- ✓ *Consider all stakeholders*. PPP will have a direct influence on some stakeholders (in particular employees and management) and may raise political or philosophical concerns among many more. Although absolute consensus will never be reached, the government needs to understand fundamental concerns and address them.

These definitions are for reference only; they mean different things to different people and are therefore inexact

and often misleading as terms of reference.[9] Further, these examples are provided for reference only and should not be viewed as an exhaustive description of the universe of PPP. PPP is ultimately flexible, limited only by the creativity of those involved and their access to funding.

1.1.1 PPP Can Be Costly and Slow, Why Bother?

PPP projects, even in the more efficient jurisdictions, require significant up-front project development funding for project selection, feasibility studies, and the use of expert advisers to help the grantor in the development and tendering process. In the United Kingdom, where a level of standardization has been achieved, these costs amount to, on average over a wide variety of projects, some 2.6 percent of capital costs over the period from prequalification to financial close, which takes an average of thirty-six months.[10] Countries with less experience in PPP will likely need to spend more and will take longer. This is a lot of resource and time commitment for the grantor to implement a PPP project properly, so why bother?

A variety of factors motivate the public sector to implement PPP, including:

[9] See Delmon, (2010) supra note 6.

[10] National Audit Office (UK), "Improving the PFI Tendering Process," (March 2007).

- ➢ underperformance of public sector utilities, often linked with opaque funding structures and inefficient or corrupt procurement methods;
- ➢ inadequate technical and management resources in the public sector; and
- ➢ investment demands exceeding public resources, in particular given the large up-front capital costs associated with major infrastructure investments and the "lumpy" cost implications of periodic major maintenance; quite simply, the government may not have the resources.

PPP is generally perceived to provide the following benefits.

1.1.1.1 Efficiency. The private sector is often considered to provide greater levels of efficiency than the public sector can.[11] This increased efficiency results from many factors, including:

- ➢ commercial approaches to problem solving, with focus on cost-effectiveness, in particular rationalizing the cost of labor and materials;

[11] As demonstrated by Gassner, Popov, and Pushak, *Does the Private Sector Deliver on its Promises? Evidence from a Global Study in Water and Electricity Distribution* (World Bank, December 2007), http://www.ppiafdev.org; Andres, Foster, Guasch, and Haven, *The Impact of Private Sector Participation in Infrastructure: Lights, Shadows, and the Road Ahead* (World Bank, 2009).

- ➢ better governance to improve accountability – for example, enabling less politically oriented decision making; and
- ➢ improved transparency and competition to reduce opportunities for corrupt practices and to bring hidden costs into the open. For example, many of the high transaction costs often associated with PPP project development must also be incurred in public projects, but instead are simply absorbed into other public budgets without being accounted for; therefore PPP brings these hidden costs into the open.[12]

1.1.1.2 Whole Asset Life Solution. Public funding of infrastructure maintenance often falls short of requirements, in particular in developing countries.[13] Poor maintenance results in significant increases in future infrastructure investment requirements, representing a significant disadvantage for these countries. PPP helps manage this funding shortfall by designing sufficient funding into the project from the start. The

[12] Klein, So, and Shin, "Transaction Costs in Private Infrastructure Projects – Are They Too High?" World Bank, Public Policy for the Private Sector, No. 95 (October 1996).

[13] "Infrastructure at the Crossroads: Lessons learned from 20 Years of World Bank Experience," (World Bank, 2006).

concession granted to the project company can last for twenty-five years or more, forcing the project company to adopt a more appropriate long-term commercial approach to problem solving and asset management. The project company will need to maintain assets properly to achieve performance levels, avoid performance penalties, and fulfill handover requirements at the end of the project period.

1.1.1.3 Transparency and Anticorruption. Good governance endeavors to provide transparency, equal treatment, and open competition. Lack of good governance makes potential investors and lenders worry (increasing the cost of money), reduces competitive pressure on bidders (increasing costs and reducing quality and expediency of solutions proposed), and increases the likelihood of rent seeking/bribery and other forms of corruption (adding cost and delay to project implementation and reducing quality of performance).[14] PPP provides an opportunity to implement good governance into every aspect of project implementation and thereby

[14] See generally http://www.transparency.org and United Nations Economic and Social Council, Governance in Public Private Partnerships for Infrastructure Development (2005).

reduce the opportunities for corrupt practices. Examples of such good governance are:

- the use of financial and fiduciary management, in particular ring fencing revenue and subsidy flows from the government, to demonstrate the viability of the project and attract investment;
- improved public access to information about the project and the procurement process – for example, through a dedicated project website with all relevant contract award information – to attract bidders and improve competition;
- enhanced project procurement approach to increase competition, transparency, and control; and
- the overriding monitoring function of the lenders (who stand to lose money if, e.g., corrupt practices are encountered in the project) that may involve, for example, spot checks of the work on a regular basis with external, specialized engineering consultants and improved transparency for public accountability, thereby adding further levels of oversight and transparency.

1.1.1.4 Technology, Innovation and Know-how. The grantor may look to the private sector to provide technology, innovation, and know-how. This will include access to skills and technologies otherwise

unavailable to the government, or developed for the project specifically that would not have been developed through traditional procurement mechanisms, due to the alignment of incentives created by a PPP project.

1.1.1.5 Sources of Financing. PPP can encourage the mobilization of new or additional sources of finance for infrastructure development and provide new opportunities for the development of local financial markets, for example, by:

- ➢ mobilizing local financial markets not accustomed to providing financing to infrastructure projects directly but desirous of long-term, stable investment opportunities;
- ➢ maximizing fiscal space by using the capacity of private balance sheets and sharing risk in a manner able to extend the amount of investment globally;
- ➢ reducing the fiscal strain on public companies by sharing the financing burden; and
- ➢ enhancing access to foreign financial markets and capital.

1.1.2 Who Are the Key Actors in PPP?

PPP is a complex process requiring input from a number of different parties, each playing an essential role in managing project risk. For the sake of simplifying our

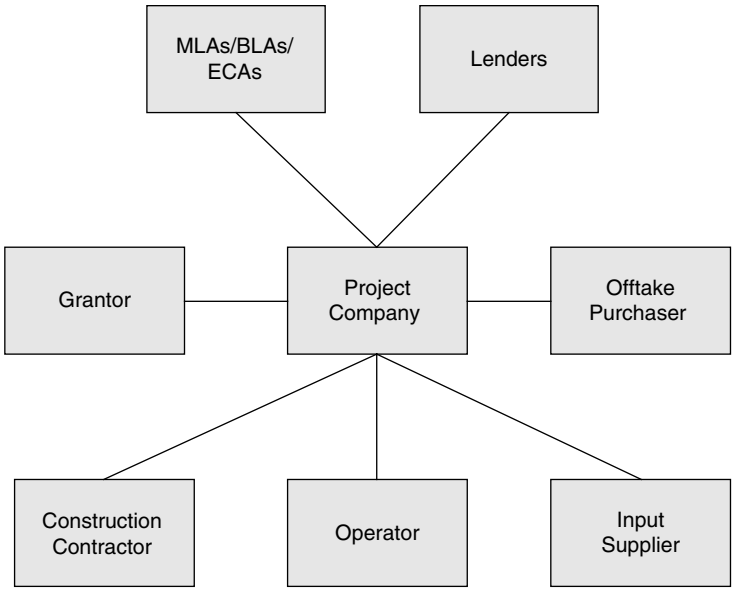

Figure 1.2. ***Parties to a PPP project.***

analysis, Figure 1.2 and the discussion later in the chapter describe the parties typically present in a project-financed PPP project and their basic relationship with the project company, though this list is not intended to be exhaustive.

1.1.2.1 Grantor. The BOT project discussed here is based on the provision: (1) by a national or local government, a government agency, or some regulatory

authority (referred to here as the "grantor"); (2) to a private party (the "project company"); (3) of the right to deliver infrastructure services. The grantor will generally be responsible for the interface between the project and the government. The grantor will need to have the authority to grant the project to a private entity and may or may not be the public body that oversees, manages, and regulates the services provided over the long term. There will be contractual agreements between the grantor and the project company, such as a concession agreement, an implementation agreement, and/or a government support agreement.

1.1.2.2 Project Company. The sponsors will identify a project and put together a bid in an effort to be awarded the project. For a project-financed PPP project, as well as most forms of consortium or foreign investment, this typically means the private sector investors will create a new company (the "project company") – usually a limited liability special purpose vehicle (SPV) – that will contract with the grantor to implement the project. The use of an SPV is likely to enable the sponsors to finance the project on a limited recourse basis (see Section 3.2.1). The grantor may require that the project company includes local investors in order to improve transfer of technology, and provide jobs and training to local personnel.

Most shareholders in the project company will want to be able to divest their shareholding as early as possible, in particular commercial/construction companies that are not accustomed to long-term shareholding. The grantor, on the other hand, will want the shareholders tied to the fortunes of the project company as long as possible so as to align their interests more with those of the grantor (e.g., a financially viable project over the long term).

Shareholders of the project company will often be both a shareholder in the SPV and a contractor to the SPV. This conflict of interest will need to be managed among the shareholders, the grantor, and the lenders; for example, a conflicted shareholder should not be in a position to negotiate or influence the negotiation of its contract or set prices. These issues will typically be addressed in a shareholders agreement between the parties creating the SPV.

1.1.2.3 Lenders. The profile of a lender group can range from project to project and may include a combination of private sector commercial lenders together with export credit agencies, and bilateral and multilateral finance organizations. Funding is sometimes provided by project bonds, sold on the capital markets, or by sovereign wealth funds and other financial intermediaries. The lenders will not be in the operation,

construction, or insurance business and therefore will not want to bear risks with which they are unfamiliar and which are more appropriately borne by other parties. Nevertheless, the lenders will be involved in most of the important phases of the works, including the financial structuring, the drafting of the project documents, and certification of completion. They will generally maintain their review powers over the project with the assistance of an independent engineer (a specialist technical adviser who monitors construction and approves completion of milestones, among other things). In addition to their loan agreements with the project company, the lenders may require that direct agreements be entered into between themselves and each of the project participants.[15]

1.1.2.4 Multilateral Agencies (MLAs). MLAs represent a grouping of nations and are owned and funded by their members, such as the World Bank. MLAs can participate in projects through advisory services, equity investments, by providing guarantees or insurance, or by providing loans. An MLA can provide financing from its own funds and/or act as a conduit for

[15] For further discussion, see Section 5.7; and chapter 29 of Scriven, Pritchard and Delmon (eds). *A Contractual Guide to Major Construction Projects* (1999).

funding from commercial banks. The World Bank and certain other such organizations generally refer to themselves as International Finance Institutions (IFIs) rather than MLAs. MLAs also provide other financial instruments, such as guarantees and political risk insurance (see Sections 4.10 and 5.10).

It is commonly believed that governments make a greater effort to ensure that loans to MLAs are repaid, even in difficult economic circumstances – a phenomenon known as the MLA "umbrella" or "halo" effect. This can work to the advantage of private lenders who cofinance MLA loans (the MLA loans from, for example, the International Finance Corporation – a part of the World Bank – are known as "A" loans whereas the private lender cofinancings are known as "B" loans). However, project sponsors perceive significant costs associated with MLA involvement, in particular the time needed to fulfill MLA procurement and environmental/social safeguard procedures. The loan or guarantee agreements with the MLAs will typically incorporate these procedures by reference to the policies of the MLA providing the financial support.

1.1.2.5 Bilateral Agencies (BLAs). BLAs, sometimes described as development finance institutions, are similar to MLAs in purpose, approach, and financial

instruments but are funded by only one nation (an example of a BLA would be PROPARCO of France). They are generally mandated to provide support to specific developing countries in the form of debt or equity investment. They are perceived to be more politically oriented than MLAs in that they carry out the political will of their donor nation. Although usually BLA involvement is not limited to projects involving investment by member country nationals, some BLAs have an "origins clause" requiring that projects funded by the BLA may not be in direct competition with opportunities being pursued by member country nationals.

1.1.2.6 Export Credit Agencies (ECAs). ECAs are established by a given country to encourage explicitly the export of goods and services by its nationals. Although traditionally government-run, a certain number of these agencies have been privatized. The ECA can provide financing, insurance, or guarantees for the goods and services exported by its source country nationals. This financing is often significant, up to or exceeding 85 percent of the total price of the export. ECAs may provide direct lending or guarantee or insure repayment of commercial lender financing in case of political risk and/or commercial risk. The political risk borne by ECAs will generally include political violence, war, hostilities, expropriation,

and currency transfer risk. In certain cases, ECAs provide extended risk cover such as change in law, changes in taxation, or a breach of a government obligation.

1.1.2.7 Offtake Purchaser. The offtake purchaser will promise to purchase the use of the project (in this context, "offtake" is an imperfect term) or any output produced (in this case, the word "offtake" is more accurate) in order to divert market risk away from the project company and the lenders. An example would be a publicly owned utility agreeing to purchase power supplied by the project company by means of a power purchase agreement (PPA). This offtake purchase agreement will usually require the offtake purchaser to pay for a minimum amount of the project output or for all fixed costs no matter how much output it takes, and thereby to create a secure payment stream that will be an important basis for financing. The offtake purchaser may also be the grantor or a government entity (such as a public utility) closely associated with the grantor.

1.1.2.8 Input Supplier. The input supplier assumes the supply risk for an input necessary for the operation of the project. Thus the project company is protected from the risk that the project will not reach its intended production level for lack of an essential input, such as fuel or raw materials. The input supplier ensures a minimum

quantity of input is delivered, at a minimum standard of quality and at a set price. The input supplier may also need to provide infrastructure to permit delivery of inputs, such as pipelines, ports, or railways. Only certain types of projects will require a form of input supply (e.g., most coal- or gas-fired power plants have fuel supply agreements [FSAs]). Other projects will rely on market availability of inputs or may not need inputs at all (e.g., toll roads). Still others will require a service rather than an input, such as the removal of sludge from a waste water treatment facility.

1.1.2.9 Construction Contractor. The contractor will design, build, test, and commission the project. This task is generally undertaken on a turnkey basis, placing completion and performance risk on the construction contractor, typically through some form of turnkey[16] construction contract, such as an engineering procurement and construction (EPC) agreement. The construction contract will, as far as possible, provide back-to-back risk allocation[17] with the project company's construction

[16] The design and construction of works to completion, so that they are ready to produce cash flow – so that all the project company need do is "turn the key" and start operations.

[17] Where all risk borne by the project company is allocated to the operator, construction contractor and other sub-contractors, see Chapter 4.

obligations, and therefore any construction risk placed on the project company will be in turn allocated to the construction contractor.

1.1.2.10 Operator. The operator will operate and maintain the project over an extended period, often from completion of construction, or the first completed section, until the end of the project period. It will need to manage the input supply and offtake purchase, monitor testing of the project, and ensure proper operation and maintenance. The project company will want to tie the operator's payment to the operator's performance of the project. The operator may not want to bear the risk of operation cost or actual output and may prefer to be reimbursed for its costs and paid a fee for its services. In any case, the payment scheme should include penalty fees and incentive bonuses to encourage efficient operation of the project. These matters will normally be dealt with in an operation and maintenance (O&M) agreement.

1.2 PPP Investment Climate

Any effort at implementing PPP using traditional public procurement institutional, legal, and financial mechanisms (without considering reform of those mechanisms

for PPP-specific concerns) is usually a recipe for disaster. Clearly, the more extensive the private involvement and the more private financing mobilized, the more supportive the investment climate needs to be. Most countries adopting PPP have learned this lesson the hard way, hence the sector is littered with the corpses of failed efforts or (even worse) badly designed projects that end up costing the government and the private sector huge amounts of time and money.

Key Messages for Policy Makers

- ✓ *Find the right champions*. A good investment climate means working together with different ministries and agencies; the team of champions needs to be up to this task. A figurehead is not enough: Political leadership and buy-in is key.
- ✓ *Seek balance* – "the perfect is the enemy of the good" (Voltaire):
  - there is no such thing as the perfect investment climate;
  - don't wait for a completed reform process before preparing projects, but a good investment climate will save a lot of headaches.
- ✓ *Manage expectations*. Stability, consistency, and certainty are often more important to investors than the pursuit of perfection.

Successful PPP requires the creation of a robust investment climate, driven from each of its key fronts:

- *people to drive and implement the process* – the staff with the right political support and training and with access to sufficient funding, located in the right government entities, to drive the project development and implementation process;
- *laws that support the process* – the rules of the game need to enable the government's efforts, protecting the state and the private sector without overly constraining the project development process;
- *money* – for project development and implementation, for many PPP projects, in particular those to be financed by the private sector, government support is key to commercial viability as related to subsidies or access to finance.

This section will discuss first the elements of achieving a sustainable PPP investment climate (Section 1.2.1) and then each of the investment climate "fronts" in turn: institutional climate (Section 1.2.2), legal climate (Section 1.2.3), and financial climate (Section 1.2.4).

1.2.1 Achieving a Sustainable PPP Investment Climate

Figure 1.3 identifies what it takes to achieve a good, sustainable PPP program:

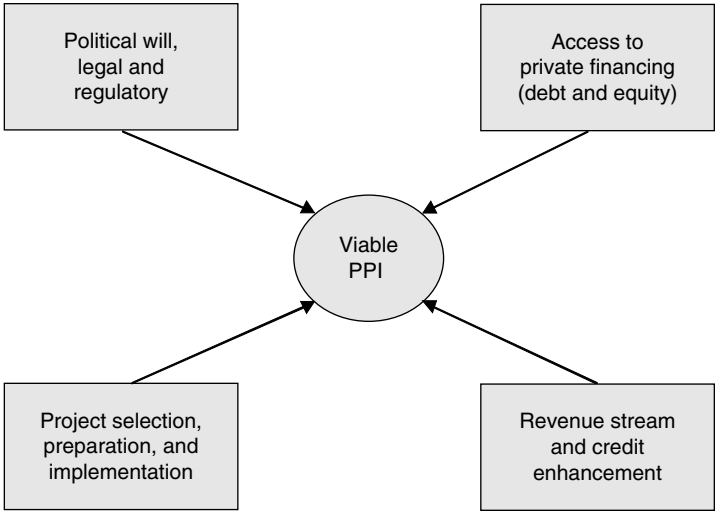

Figure 1.3. ***The context of a conducive PPP investment climate.***

- the political will to pursue PPP and the legal and regulatory regime appropriate to enable and encourage PPP;
- the selection, design, and development of "good" projects focuses on the ability to identify the most appropriate and feasible projects for PPP, to gather necessary information, instruct high quality advisers, and empower a robust management team needed to develop the project for the grantor;
- the development of a viable revenue stream focuses on the financial viability of the project, allocating

commercial risk while insulating investors from those risks best borne by the grantor or the government;

- the mobilization of private finance (local and/or foreign), ensuring that the financial markets are in a position (legally, financially, and practically) to provide the project with the investment it needs (debt, equity, and otherwise) to satisfy its funding needs, from initial capital expenditure to major maintenance and working capital requirements.

A good PPP program cannot be created with only one or two of these elements. Although weakness in some areas can be compensated with strength in others, there is no one element that can compensate for all others.

Figure 1.4 provides more detail on the question of the 'investment climate' for PPP.

The outer square deals with the macro issues, also summarized in Figure 1.3.

The middle square identifies the key participants in achieving each of the macro-drivers. Even though these participants include both public and private entities, the preponderance of public entities is noticeable. This is clearly not an exhaustive list, hence the tendency to group large numbers of participants into:

- "private" – including lenders, investors, insurers, guarantors, and so on;

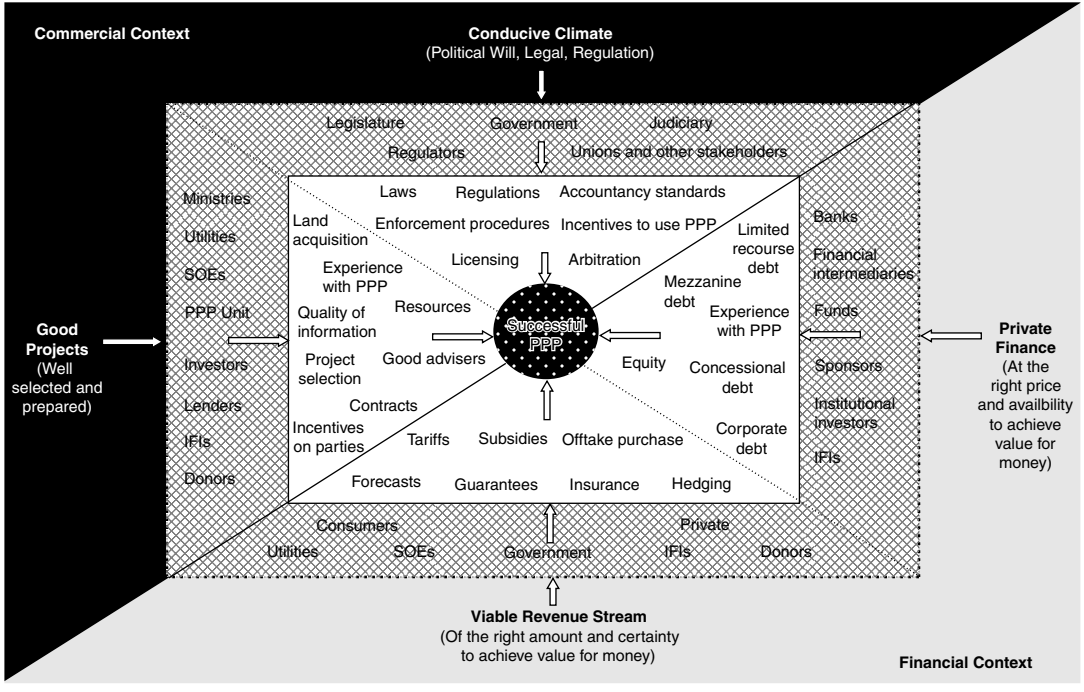

Figure 1.4. ***PPP investment climate.***

- "consumers" – including all users who pay for services, taxpayers, and other beneficiaries who derive some form of value from the project company and/or provide support for the project;
- "stakeholders" – including local communities, consumer groups, housing associations, individuals, and anyone who might influence the political and social context of the project.

The inner square shows the tools available to those participants. Of course, this is not a comprehensive list of those tools, and the parties involved should be encouraged to be creative and innovative in the solutions they find for different project challenges. However, a number of tools are tried and commonly used, so they are listed here. One notable mention here is "experience with PPP." It is important for the grantor, investors, and lenders to have access to individuals with specific experience in PPP, to help them understand the risk profile, terms and conditions, market standards, and financing arrangements typical of such projects. PPP is a unique approach to procurement of infrastructure, and the challenges of understanding the nuances of such structures in different sectors should not be underestimated.

1.2.2 Institutional Functions

One of the means of reducing the risk, both to investors and to the state, in PPP projects is ensuring that projects are prepared properly (with appropriate attention to risk management) and that they tie in well with national and regional priorities. PPP programs need to be well integrated with overall planning mechanisms due to the dangers of an ad-hoc approach to selecting projects to be implemented as PPPs. This requires the right institutional arrangements to be in place.

1.2.2.1 PPP Units. The government will want to allocate resources, provide access to expert advice, and develop institutional capacity to enable good practice project development, implementation, and management. Many jurisdictions are now using a centralized institutional mechanisms to provide such capacity, located within or attached to a key ministry (such as the Ministry of Finance or Planning) that provides resources for project development or other incentives to use PPP. These institutional mechanisms can be coordinated through one central agency or entity (often known as a Public-Private Partnership [PPP] Unit) or may be dispersed across a number of different entities or agencies. This section will use the term "PPP unit" to refer to the

institutional mechanism generally, whether it is located in one central agency or disbursed among many.

Typically PPP units have a number of functions, including:

- improving the legal/regulatory context for PPP (proposing new PPP laws or amendments to existing laws and regulations to cope with a PPP agenda);
- ensuring that the PPP program is integrated with overall planning systems and that only those projects that form a part of identified government priorities are implemented;
- ensuring that projects protect environmental and social interests and comply with relevant requirements;
- promoting PPP opportunities within the government and at a regional level, for example, helping manage political expectations, project selection, government support, funding for project development, and project structure;
- promoting PPP opportunities among potential investors and the financial markets.

The key functions of a PPP unit can be summarized in four areas: legal\regulatory, project selection, project funding, and market making (advocacy of PPP within the government, among state-owned enterprises, and among private investors\financiers), as shown in Figure 1.5.

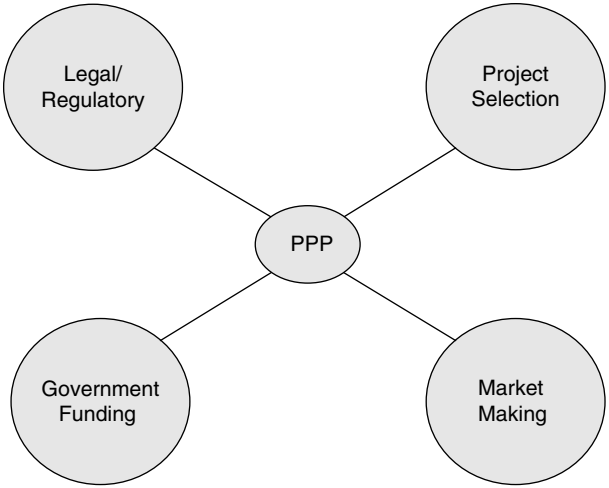

Figure 1.5. ***Key government activities in PPP.***

The PPP unit can provide a single point of contact for investors and government agencies alike, coordinating PPP activities across sectors so that the PPP program is as uniform and consistent for investors as possible. The remit of the committee will include the development and dissemination of PPP practice, policy, and legislation. In particular, the PPP unit can develop:

- manuals and guidelines on practical issues such as managing transaction advisors, conducting feasibility studies, developing tender documents, negotiating contracts, and monitoring contracts;

- standard form contracts, procedures, and documentation;
- requirements and processes to be implemented before a project can apply for government financial support.

The optimum location for such a PPP unit is a subject of some debate, with a number of more or less complex approaches having been adopted globally. A PPP unit usually works best when connected with a key ministry or department (such as the Ministry of Finance or Planning), rather than requiring each line ministry to form its own sector-specific unit (though the central unit may be supported by sector-specific units). The mechanism must be well integrated with overall infrastructure planning and project selection.

PPP units with executive powers tend to work better than those who provide solely advisory services, given the nature of their responsibilities.[18] The government may want the resources available for market making to be allocated to the most financially viable projects as a priority. Projects may therefore need to compete for available market-making resources. Care should be taken in defining "viability" to avoid focusing only on the most profitable projects (such as telecoms and ports) rather than the more strategic projects for the government (such as water and roads).

[18] Public Private Partnerships Units: Lessons for Their Design and Use (World Bank, 2007).

1.2.2.2 Government Coordinating Committee. Key decisions associated with PPP will be taken by various government agencies, be they national or local, financial, environmental, or legal. It is often helpful for a committee representing different agencies to be formed to encourage communication, facilitate approvals, and coordinate consistency in approach. Such a committee may not necessarily be best placed to provide a managerial or decision-making function, given the number of individuals and interested parties involved. The coordination committee will usually not be accountable for the success or failure of the project and may therefore be more vulnerable to interference from diverse political interests and agendas.

1.2.2.3 Government Risk Management. PPP projects generally involve government liabilities (often referred to as "fiscal risks"), either direct or indirect and often contingent – as in the liability only crystallizing in certain events. These risks need to be managed and monitored through the relevant institutional and accountancy mechanisms.[19] Countries have had extremely unfortunate experiences with the failure to manage these risks in times of financial or political crisis.

[19] Irwin, *Government Guarantees: Allocation and Valuing Risk in Privately Financed Infrastructure Projects* (World Bank, 2007).

1.2.2.4 Grantor Project Management Team. A grantor project management team with the right skill set and seniority is needed to develop and procure the project effectively. Continuity within this team is extremely important. Overall, project management is rarely a part-time job, and changes in project team personnel can be very disruptive to the project process. Equally significant, the grantor project team needs to be formed with the clear understanding that a PPP procurement process is very different from a typical public procurement process. Therefore, the project team needs to have very specific PPP procurement experience. Failure to properly staff and resource such teams has had a critically negative impact in many countries.

1.2.2.5. Government Incentives to Adopt PPP. Even with good institutions and highly skilled personnel, the incentive structures within line ministries and state-owned enterprises are often inconsistent with the use of PPP. PPP should be used for the most viable projects, yet line ministries and state-owned enterprises will generally prefer to implement the most commercially viable projects themselves, assigning the least viable, most problematic projects to PPP – a recipe for disaster.

The government may therefore need to provide specific incentives to use PPP for appropriate projects to counterbalance these natural tendencies. These incentives may include additional budgetary support, technical assistance, project development funding, or clear quotas or mandates to implement certain projects through PPP.

1.2.3 Legal Context

In addition to institutional mechanisms, the legal system of the host country needs to create the right investment climate. Section 4.2 discusses some of the fundamental legal issues that can constrain PPP development. However, more generally, the government should consider creating a legal environment that encourages PPP, providing appropriate protections for investors and lenders and permitting a procurement process consistent with international best practice. In some jurisdictions, this may involve the passage of a PPP law or concession law that sets out certain fundamental principles.[20]

[20] UNCITRAL Model Legislative Provisions on Privately Financed Infrastructure Projects (United Nations, New York, 2004); UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects (United Nations, New York, 2001); see also http://www.worldbank.org/inflaw.

1.2.4 Financial climate

In addition to institutional and legal context, policy makers should carefully consider the financial environment. In particular:

- A successful PPP portfolio needs a pool of sponsors with the right skill mix, who are interested in PPP projects in the host country and have the resources to drive bid processes.
- Investors will need to access significant amounts of debt and equity financing on terms appropriate for PPP projects. Ideally, debt should be fixed-rate, long tenor and the same currency as revenues; if such debt is not available, the investor will need access to mechanisms to mitigate such gaps. The mechanisms might involve a facility to swap variable-rate for fixed-rate financings, guarantee arrangements or currency swaps. Equity funding needs to have a relatively long-term perspective, with the understanding that investors may only be able to exit after, for example, a minimum of five years or even later.
- The offtaker needs to have a viable credit position or access to support from creditworthy entities.

Section 3.4 discusses what the government can do to improve certain aspects of the financial climate.

— ✤ CHAPTER TWO ✤ —

Project Selection and Preparation

The time and resources used during the selection and preparation process will earn significant returns by reducing the likelihood of project failure and making procurement more efficient. The selection process usually involves several steps: identifying a list of strategic projects that have the right characteristics, performing preliminary reviews of those projects, and finally performing feasibility studies to ensure that the project is likely to succeed as a PPP. The selected projects are then prepared, reviewing risks and their allocation, identifying market requirements, and creating a competitive process for selection of the right private partner.

Key Messages for Policy Makers

- ✓ *Select projects purposefully*. Work out exactly what you want from the project (more access, investment, lower prices?) and select accordingly.
- ✓ *Invest in development*. Effort spent selecting the right project will earn benefits later. This is the time to get the project design right; changes made later cost more.
- ✓ *Select good projects*. Garbage in – garbage out; say "no" to bad projects.
  - Select robust, viable projects for PPP; these are more likely to be financed on a competitive basis and are therefore more likely to provide value for money.
  - Projects suffering from bad design, dubious demand, or weak fundamentals are more likely to fail and may weaken the entire PPP program in the process.
  - A good, transparent selection process can reassure investors and increase competition. Projects selected for political reasons or priorities will create a perception of increased political risk among investors.

Figure 2.1 provides a diagrammatic description of the different stages of project selection and preparation. Failure to implement these stages properly has doomed many a PPP project and program; this selection process should not be curtailed.

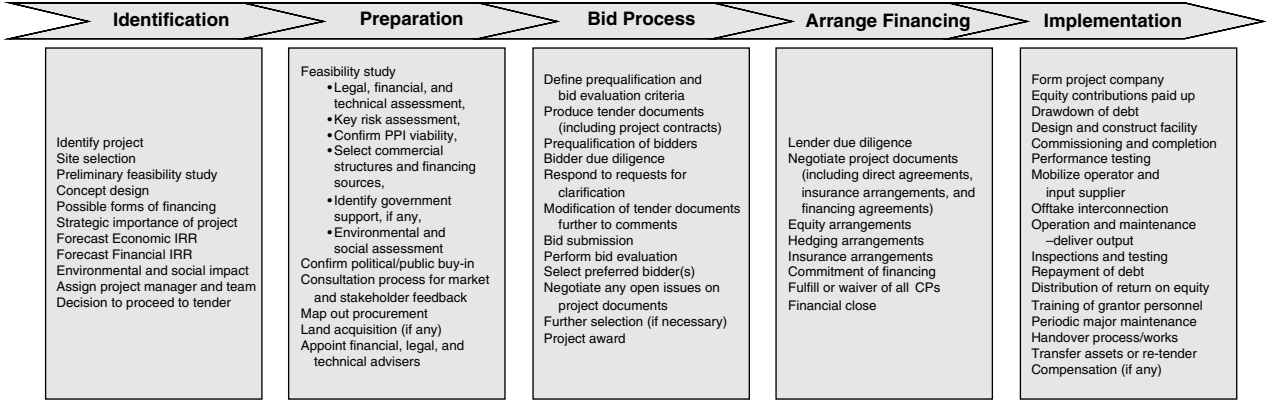

Figure 2.1. ***The development process for PPP.***

2.1 Identifying Strategic Projects for PPP

A PPP project needs to be central to the government's plans for infrastructure services – for example, as part of its least cost expansion plan and supported by a robust demand profile. The government is likely to have a central planning function that can provide a preliminary identification of all of its strategic infrastructure projects. It then needs to categorize those projects as between public and private implementation. Those strategic projects are then subjected to prefeasibility studies – assessing the basic technical and financial project fundamentals such as site selection, concept design, and possible forms of implementation, revenue, and financing. A decision to proceed would then be formed based on the strategic importance of the project, possibly through an assessment of forecast financial IRR,[1] economic IRR,[2] and environmental and social impacts. Once a positive policy decision is made to proceed with infrastructure investment as a PPP, a project manager and team should be organized. Over time,

[1] FIRR is the discount rate that equates the present value of a future stream of payments to the initial investment. See also economic IRR.

[2] EIRR is the project's internal rate of return after taking into account externalities (such as economic, social, and environmental costs and benefits) not included in normal financial IRR calculations.

the project team will need to be expanded; as it develops in complexity and preparation progresses, more skilled staff and adviser support will be required.

2.1.1 Unsolicited Proposals

Governments often receive proposals directly from private investors. These proposals can be a good source of innovative ideas for the government and can help governments identify new project concepts. However, unsolicited proposals can also be anticompetitive and can even facilitate fraud and corruption unless they benefit from the validation of transparent, competitive tendering. For this reason, mechanisms have been developed to encourage unsolicited bids while also ensuring that competitive tendering is used when selecting the best investor.[3] These mechanisms involve a careful review of such unsolicited proposals to ensure they are complete, viable, strategic, and desirable. The project is then put out to competitive tender, with the proponent of the unsolicited proposal receiving some benefit, for example:

- a bonus on the proponent's scoring in the formal bid evaluation (i.e., additional points allocated to

[3] Hodges and Dellacha, *Unsolicited Infrastructure Proposals: How Some Countries Introduce Competition and Transparency: An International Experience Review*, (2007).

the proponent's total score when its bid proposal is evaluated);

- ➢ a first right of refusal, enabling the proponent to match the best bid received (the "Swiss challenge");
- ➢ with multiple rounds of bidding, the right to automatically participate in the final round of bidding (the "best and final offer" system);
- ➢ compensation paid to the proponent by the government, the winning bidder, or both.

In other jurisdictions, the nervousness about unsolicited bids leads governments to reject them outright. Whatever the system implemented, the details need to be set out for all to see, to ensure transparency.

2.1.2 Verifying Project Viability through Feasibility Studies

The grantor (usually through external advisors with specific skills) performs a feasibility study to commence project structuring and key risk allocation decision making, which is an update and expansion of the prefeasibility study (see above). The feasibility study will include technical and financial due diligence, resulting in a financial model and risk matrix sufficient to enable the grantor to develop a robust and bankable project design and documentation. The feasibility study should include:

- analysis of grantor and sector strategic objectives, sources of funding, and budget and scope of the project, including political buy-in;
- identify legal risks and challenges that must be overcome, that is, who has the right to award the concession, how the land can be acquired, and what approvals need to be obtained before the project can produce services;
- identifying regulatory and political challenges, that is, what permits and approvals need to be obtained, what governmental and political authorities must consent to the project, and what intergovernmental management coordination needs to be developed for the project to perform properly;
- market testing to ensure investor appetite, lender appetite, and key concerns of the market in relation to the project;
- analysis of structuring options, review of risk allocation assumptions, comprehensive risk matrix for managing and mitigating all project risks, review of project assumptions, consultations with potential investors and other stakeholders, and developing the legal architecture and design of the transaction to meet grantor needs and bankability requirements;

- developing technical specifications for the project, with input from all stakeholders, in accordance with long-term sector planning, setting out assessment of other key project risks, that is, land access/rights and environmental planning, and achieving technical viability;
- financial assessment, including assumptions made on cost (direct and indirect) and revenue estimates, all model assumptions (including inflation and interest rates), sensitivity analyses (e.g., for cost increases and revenue reductions), and a summary of results from the base financial model, including any proposed government support;
- economic assessment, including revenues that would accrue to the government through taxes, customs, duties and excise levies, employment generation, regional development, betterment of people directly affected, environmental impact, economic growth, and so on using a public sector comparator model and resulting in an economic internal rate of return (EIRR) that will help assess the value for money provided by the project (see Box 2.1);
- development of a procurement process plan through to financial close, tender documents, project information brief, and all other needed documentation.

Box 2.1. VfM

To measure the added benefits to be achieved through PPP, governments often implement value for money (VfM) measurements. VfM looks at the benefit of the project procured through PPP for the government by applying a broad spectrum of "value," including whole-of-life costs, quality and fitness of the good or service to meet the user's requirements, and externalities (such as economic growth, environmental impact, mobilization of finance, social impact, and sector governance). It is not a simple numerical analysis but a holistic assessment of the project delivery and the marginal benefits provided by private investment and the competitive procurement process used.[4]

2.1.3 Approval

Once the feasibility study is completed and key risks are identified, the government can take an informed decision whether the project should be structured as a PPP or not. Having the project approved as a PPP ensures political buy-in of the process before the government and potential bidders start investing serious money in project development.

[4] See, for example, HM Treasury, "Value for Money Assessment Guidance" (November 2006).

2.2 Project Preparation

PPP takes a long time to prepare and needs the attention of experts to ensure that risks and funding are managed properly and efficiently. This involves designing a process that maximizes competition but keeps costs down; fits with political imperatives but also with international good practice; and reaches conclusion quickly but without going so fast that quality or competition is lost.

The procurement process is also document intensive, amounting to hundreds and even thousands of pages (though standardization of documentation can help mitigate this burden). Technical and legal documents will need to be drawn up, reviewed, debated, released, debated with bidders, and finalized, all in a relatively short time period. The more that is done early in the procurement process, the less negotiation required and the fewer the last-minute compromises needed to be made (these last-minute compromises often result in unfortunate errors or badly designed solutions for key project functions). More importantly, PPP is a very competitive area. Investors will be selective, focusing on those projects that are clear, well prepared and evidence strategic priority for, and buy-in from, the government. Issuing clear, market standard documentation can go a long way to attracting more, high-quality bidders.

Key Messages for Policy Makers

- ✓ *Do not cut corners in procurement*. It may seem easier to enter into direct negotiations instead of using competitive procurement, but it isn't. It takes longer and costs more money. Maximizing competition through good, transparent, public procurement is one of the most important benefits of PPP.
- ✓ *Invest in preparation*. PPP preparation takes time and money, both of which will be wasted if the preparation stage is curtailed or done on the cheap. Work done during preparation saves substantially more time and money later in the process.
- ✓ *Be clear to bidders about what you want*. Indicate clearly what results, milestones, and indicators you want the investor to achieve. Help bidders give you what you want; don't make them guess.
- ✓ *Be open to discussing your expectations; bidders might have some useful suggestions*. Take the time to discuss with bidders and use dialogue to improve the project.
- ✓ *Be cautious when selecting the winning bid*. If a bid seems too good to be true (financially, technically, or otherwise) then it probably is. Look carefully at the details, whether it is a fixed and complete bid; if anything looks unconvincing, it may be wise to reject it.

2.2.1 The Project Team

The project team needs access to appropriately skilled and senior individuals, as well as funding for advisers, marketing functions, and other key project preparation activities. Continuity of project team membership and management will be important to provide confidence to investors and to manage political interfaces.

2.2.2 External Advisers

The government will need experienced and professional financial, legal, technical, tax, insurance, and other external advisers when identifying, designing, and procuring a project. Each of these advisers will be subject to different agendas and incentives that will influence the nature of their advice and the ease with which the government will be able to manage their involvement. There is no easy or clear answer as to how to keep advisers properly motivated; this is a complex management function. The government (possibly through central institutional mechanisms) should have access to expertise in managing such advisers to help the granting authority avoid the various pitfalls of poor advice from, and high costs of, those advisers.

2.2.3 Procurement Process

The following describes the steps involved in a typical tendering process. Not all tendering procedures will

follow this format, particularly where the nature of the project or the nature or number of bidders requires some divergence from common practice. Furthermore, specific countries or industries may apply some variation of this procedure. Some systems follow a more open approach to bidding, allowing more flexibility in the process to improve dialogue between the bidders and the grantor and to adjust the project to fit with the results of the dialogue. Box 2.2 describes some of the rights that the grantor will want to reserve for itself in the bidding process.

However, this flexibility also improves the opportunity for corrupt practices, and therefore many countries require a more closed approach to bidding. Whatever the constraints imposed by such processes, the concepts discussed later in the chapter will be relevant to most tendering situations.

2.2.3.1 Prequalification. The bidding process is generally lengthy and costly, both for the bidders and for the grantor. To manage the cost and time outlay, the grantor may wish to prequalify those parties most likely to provide an attractive bid and avoid the time and cost of managing bidders who do not have the fundamental qualifications or financial substance that would enable them to undertake the project. Prequalification

Box 2.2. Grantor's Caveats during Bid Phase

As a general proposition, the grantor will want to ensure that it may:

- ✓ suspend or abandon the procurement process at any time (regardless of whether or not it chooses to recommence the same later);
- ✓ amend the process or the terms of its documentation within a reasonable time before the date for bid submission;
- ✓ choose not to award the contract in question to any of the bidders;
- ✓ exclude any bidder if the bidder is, or reasonably appears to be, guilty of bribery, collusion, or other similar activity;
- ✓ exclude any bid submitted after the end of the period indicated or that does not comply with the bid requirements;
- ✓ provide information without warranting its accuracy or completeness without fear of penalty or liability.

These caveats are not intended to achieve an effective bidding process but rather to protect the grantor from the possible problems associated with bid procedures.

also encourages good bidders who will prefer a smaller field of equally qualified competitors. The prequalification criteria tend to focus on the financial substance of firms to ascertain whether they can fulfill the relevant financial obligations, a history of attracting the required financing, and specific experience with implementing PPP projects of a similar nature and ideally in the country or one with similar economic, political, and/or geographic characteristics. The grantor may choose to limit the number of bidders that can be prequalified, for example to a list of four to six, to avoid having too many bidders.

2.2.3.2 Bid. The prequalified bidders are then invited to enter into the bidding process. The grantor provides the bidders with tender documents (including project documents and technical specifications) and access to relevant data. The type of data provided and the nature of the technical specifications will depend very much on the technical solution selected by the grantor and the extent to which the bidder is to be responsible for design of the works. The grantor may wish to look to the bidder to provide value engineering and technical innovations but must then be ready to compare bids on that basis. Generally speaking, more resources invested in project preparation result in higher-quality information for the

bidders, which in turn encourages more competition as well as more innovative, higher-quality bids.

The bidders then perform their due diligence to assess the viability of the project and identify the technical solution and financial proposal that will make up their bid. The grantor will invite comments from bidders – possibly multiple iterations of comments – in pursuit of the best value for money and a bankable project. The process of obtaining and understanding bidder concerns may involve exchanges of written comments, bidder conferences, lender meetings, different media for sharing questions and answers (e.g., Web-based, teleconferences, and videoconferences), and discussions among advisers.

Once this dialogue is complete, bids are submitted. These bids may or may not be "underwritten" (where lenders undertake to provide financing). The extent to which lenders can make firm commitments will depend on the amount of time provided to them to perform their due diligence, the amount and quality of information available, and the nature of the competition. Asking lenders to do due diligence in advance of bidding is expensive, because each bidder will have a different team of lenders and their advisers. It is usually more efficient to reduce the number of bidders to two or three before commencing such dialogue with lenders (See BAFO later in this chapter).

The criteria applied to evaluate submitted bids usually include:

- technical – for example, comparing design solutions, technology, innovation, speed of construction, viability of construction plans, and life-cycle costing;
- commercial – for example, shareholder arrangements, locally versus foreign-sourced labor, proposed amendments to the concession or other project agreements, and identity of proposed sub-contractors;
- financial – for example, price bid, amount of government support required, reliability of proposed sources of financing, extent to which lenders have already completed their due diligence and commit to financing the project, and robustness of the bidder's financial model.

Some weighting occurs between these three to help bidders understand the grantor's principal goals in the procurement process. It may be difficult to identify criteria that will allow a true comparison between bids – for example, technical solutions may be vastly different from one another or the commercial arrangements requested by a bidder (for example, the type of risk allocation they seek) may vary significantly. On the other hand, innovation is one of the principal benefits of PPP, and the

grantor may want to allow variant bids[5] to maximize innovative solutions.

2.2.3.3 Preferred Bidder. Once bids are received, the grantor will evaluate those bids and select preferred bidder(s). The grantor will negotiate with the preferred bidder any open issues on project documents, finalize the commercial and financial arrangements, award the project, and usually sign the concession agreement and other key contracts subject to the conditions precedent, discussed in the following section.

2.2.3.4 Best and Final Offer (BAFO). The grantor may choose to include additional stages of competition, for example, reducing the competition to two bidders who will then be asked to further refine their bids and submit a best and final offer (BAFO), following which the grantor chooses the preferred bidder. This process allows the grantor to use the available competitive

[5] Variant bids are submitted in addition to compliant bids. They do not comply specifically with the requirements set out in the tender documentation, but rather involve a technical innovation or some other change in approach (to the extent permitted by the grantor) that would reduce costs or improve efficiency such as, for example, a different technology or tariff structure, which the bidder believes better satisfies the grantor's needs.

pressure to further motivate bidders, and possibly obtain firm financing commitments.

2.2.3.5 Single Bids. The grantor may receive only one compliant bid, which creates a delicate situation for the grantor – for example,

- ➢ the sole bidder is often aware of its dominant position and may therefore submit an expensive, risk-averse bid;
- ➢ the grantor may be tempted, or be under political pressure, to accept a noncompliant sole bid (since the alternative would be to concede that the process needs to be started anew);
- ➢ where the sole bidder submits a conditional bid or where key issues are otherwise subject to negotiation, in the absence of a second bidder or other competitive pressure, the grantor may find its negotiating positions significantly reduced.

A sole bid may reflect poor project preparation or marketing by the grantor, or simply limited private sector appetite for the country or sector in question (though good preparation can indicate this in advance). As a general consideration, a sole bid should be considered a failure, and the bid relaunched or abandoned, though under certain circumstances, the grantor may find that a sole bid is

responsive and satisfactory. This will need to be assessed on a case-by-case basis.

2.2.3.6 Financial Close. As discussed earlier in the chapter, lenders may be introduced into the bidding process before or after bids are submitted. No matter when they are involved, lenders will not be finally committed to the project until financial close is achieved. The project company will generally not be bound to the project in any meaningful way until financial close, which often will be a condition precedent (must be satisfied before) to the effectiveness of the concession agreement and other key contracts. Before financial close, lenders will want to confirm that the risk allocation for the project is "bankable" – a general term referring to the level of comfort that a lender will require from a project given the context of the project (sector, location, size, etc.).[6] The lenders will then establish a list of conditions precedent (CPs) that must be satisfied before the lending arrangements become final and before the first drawdown can be made. Those CPs must be fulfilled or waived before financial close can occur. They will include the following:

- commercial and legal arrangements are in place and are effective, e.g., the issue of all permits, approvals

[6] See Section 3.2.2.

and consents (for example exchange control consents), guarantees, contract bonds, collateral warranties, sponsor support, evidence that corporate entities are properly formed, and due diligence reports from lawyers and technical advisers;

- compliance with financial ratios and covenants, including debt-to-equity ratio, cover ratios, no cost overruns, commitment of equity funds, and that funds available to the project company at the time of drawdown are sufficient for completion;
- the whole of its security package is in place, effective, and enforceable. This will include verification of asset ownership, registration of security rights, rights over and in bank accounts, endorsement of insurance policies, share pledges, and legal opinions on security arrangements.

— ✤ CHAPTER THREE ✤ —

Financing PPP and the Fundamentals of Project Finance

Ultimately, the cost of infrastructure has to be borne by its users or by taxpayers, current or future ones (aside from the limited concessionary component of foreign aid). The investments of public infrastructure firms have traditionally been financed from the public budget (through taxing or borrowing), possibly with a contribution from the enterprises' retained earnings (consumers). Funding by future taxpayers and/or consumers occurs when the infrastructure company borrows money, to be repaid from future revenue. Public infrastructure companies may do this by issuing bonds or shares or borrowing directly from commercial banks or the government. These options are only available to well-managed infrastructure firms in favorable investment climates.

Key Messages for Policy Makers

- ✓ *Be flexible when considering sources of financing*. Be ready to mix public and private money to improve value for money, especially in the early days of PPP or when private markets are weak. Public money also helps worthwhile projects that are not necessarily financially viable become more robust, increasing the opportunities for private investment.
- ✓ *Efficiency of financing is key*. There is no free ride – someone will have to pay (consumers and/or taxpayers) – so make sure you get the best value for money.
- ✓ *Beware of creating significant risks when using highly structured financing*. Overly complex, highly leveraged financing, although cheaper, may create an overly vulnerable project – a robust project is often worth the higher cost in times of trouble – and trouble does happen.

PPP offers alternatives to attract new sources of private financing and management while maintaining a public presence in ownership and strategic policy setting. These partnerships can leverage public funds and offer advantages of contracting with well-qualified private enterprises to manage and deliver infrastructure services. Three of the more common sources of financing for infrastructure projects are (see Figure 3.1):

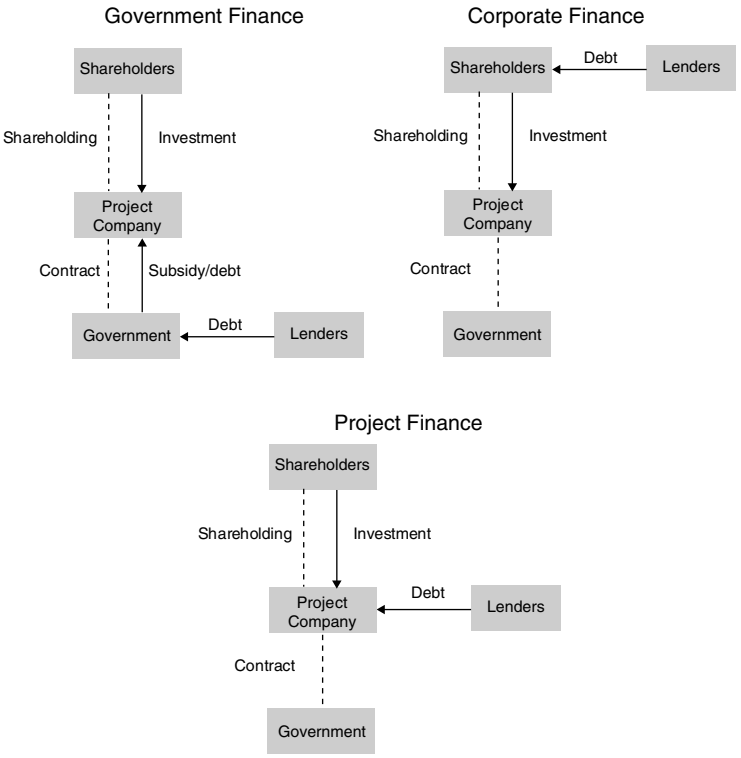

Figure 3.1. ***Sources of financing for PPP.***

➢ *Government financing* – where the government borrows money and provides it to the project through on-lending, grants, subsidies, or guarantees of indebtedness. The government can usually borrow money

at a lower interest rate, but is constrained by its fiscal space (the amount it is able to borrow) and will have a number of worthy initiatives competing for scarce fiscal resources; the government is also generally less able to manage commercial risk efficiently.

- *Corporate financing* – a company borrows money against its proven credit profile and ongoing business (regardless of whether or not this debt is secured against specific assets or revenues) and invests it in the project. Utilities and state-owned enterprises often do not have the needed debt capacity and may have a number of competing investment requirements. External investors may be an option, but the size of investment required and the returns that such companies seek from their investments may result in a relatively high cost of financing and therefore can be prohibitive for the grantor.
- *Project financing* – where non-recourse or limited recourse (these terms can be used interchangeably) loans are made directly to a special purpose vehicle (SPV). The lenders rely on the cash flow of the project for repayment of the debt, and security for the debt is primarily limited to the project assets and future revenue stream. The debt can therefore be off-balance sheet for the shareholders and possibly also for the grantor (see Section 3.2).

The proportion used of each source of financing and the decision as to which form of financing to adopt will depend on market availability of financing and the willingness of lenders to bear certain project risks or credit risks according to their view of how the market is developing and changing, and of their own internal risk management regime.

This chapter will provide further discussion of types of financing contributions needed for PPP (3.1), project financing (3.2), and what the government can do to improve the ability to mobilize private financing for PPP (3.3).

3.1 Sources of Financing

A PPP project will involve financing from various sources, in some combination of equity and debt.

3.1.1 Equity Contributions

Equity contributions are funds invested in the project company, which comprise its share capital and other shareholder funds. Equity holds the lowest priority of the contributions; for example, debt contributors will have the right to project assets and revenues before the equity contributors can obtain any return or, on termination or insolvency, any repayment. Also, equity shareholders

cannot normally receive distributions unless the company is in profit. Equity contributions bear the highest risk and therefore potentially receive the highest returns.

3.1.2 Debt Contributions

Debt can be obtained from many sources, including commercial lenders, export credit agencies, bilateral or multilateral organizations, bondholders (such as institutional investors), and sometimes the host country government. Unlike equity contributions, debt contributions have the highest priority among the invested funds (e.g., senior debt must be serviced before most other payments are made). Repayment of debt is generally tied to a fixed or floating rate of interest and a program of periodic payments. The source of debt will have an important influence on the nature of the debt provided.[1] PPP generally involves the construction of high-value, long-life assets with stable revenues and therefore seeks long-term, fixed-interest debt. This debt profile fits perfectly with the asset profile of pension funds and other institutional investors.

Bond financing allows the borrower to access debt directly from individuals and institutions rather than using commercial lenders as intermediaries.[2] The issuer

[1] For further discussion of different lenders, see Section 3.3.1.

[2] For further discussion of documenting a bond issue, see Vinter and Price, *Project Finance: A Legal Guide* (3rd ed., 2006).

(the borrower) sells the bonds to the investors. The lead manager helps the issuer market the bonds. A trustee holds rights and acts on behalf of the investors, stopping any one investor from independently declaring a default. Bond financing generally provides lower borrowing costs and longer tenors (duration) if the credit position of the bond is sufficiently strong. Rating agencies may be consulted when structuring the project to maximize the credit rating for the project. Rating agencies will assess the riskiness of the project and assign a credit rating to the bonds that will signal to bond purchasers the attractiveness of the investment and the price they should pay.

Different types of credit enhancement can be used to increase availability and reduce the cost of debt. For example, a monoline insurer (or an MLA like the World Bank) may provide credit enhancement to bond investors, also known as an "insurance wrap."[3] The monoline insurer has a superior credit rating (usually Standard & Poor's AAA) and provides some undertaking to investors using this superior credit rating to reduce risk for investors, thereby improving the rating for the bond and reducing the yield required, justifying the cost of the insurance wrap.

[3] The Collateralized Debt Obligations (CDOs) and the subprime mortgage crash of 2008 have seriously reduced the availability of such instruments.

3.1.3 Mezzanine/Subordinated Contributions

Located somewhere between equity and debt, mezzanine contributions are accorded lower priority than senior debt but higher priority than equity. Examples of mezzanine contributions are subordinated loans and preference shares. Subordinated loans involve a lender agreeing not to be paid until more "senior" lenders to the same borrower have been paid, whether in relation to specific project revenues or in the event of insolvency. Preference shares are equity shares but with priority over other "common" shares when it comes to distributions. Mezzanine contributors will be compensated for the added risk they take either by receiving higher interest rates on loans than the senior debt contributors and/or by participating in the project profits or the capital gains achieved by project equity. Use of mezzanine contributions (which can also be characterised as quasi-equity) will allow the project company to maintain greater levels of debt-to-equity ratio in the project, although at a higher cost than senior debt. Shareholders may prefer to provide subordinated debt instead of equity to:

- benefit from tax deductible interest payments;
- avoid withholding tax;
- avoid restrictions on some institutions not permitted to invest in equity;

- allow the project company to service its subordinated debt when it would not be permitted to make distributions;
- permit shareholders to obtain some security – for example, to rank senior against trade creditors.

Unlike equity holders, however, subordinated lenders:

- do not share in profits;
- do not normally have voting and control rights;
- may be subject to usury laws on the amount of interest they are allowed to charge, whereas equity distributions are not.

3.2 Project Finance

One of the most common, and often most efficient, financing arrangements for PPP projects is "project financing," also known as "limited recourse" or "non-recourse" financing. Project financing normally takes the form of limited recourse lending to a specially created project vehicle that has the right to carry out the construction and operation for the project. One of the primary advantages of project financing is that it can provide off-balance sheet financing, which will not affect the credit of the shareholders or the grantor and shifts some of the

project risk to the lenders, in exchange for which the lenders obtain a higher margin than for normal corporate lending. Project financing achieves a better weighted average cost of capital than pure equity financing. It also promotes a transparent risk-sharing regime and creates incentives across different project parties to encourage good performance and efficient risk management.

Key Messages for Policy Makers

- ✓ *Project finance is complex*. Get the right advice, be ready to pay for it; if properly managed, it can save you time and money.
- ✓ *While protecting the grantor's interests, listen to lender concerns*. Focus on the lenders' key needs and perceived risks but don't let them drive the agenda. Take the time and effort to make life a little easier for the lenders. It is likely to make your life easier in the long run.

3.2.1 Off-Balance Sheet and Limited Recourse Financing

Project finance debt is held by the project company, which is a sufficiently minority subsidiary so as not to be consolidated onto the balance sheet of the respective shareholders. This reduces the impact of the project on the cost of the shareholder's existing debt and on the

shareholder's debt capacity, releasing such debt capacity for additional investments. To a certain extent, the grantor can also use project finance to keep project debt and liabilities "off-balance sheet," taking up less fiscal space.[4] Fiscal space indicates the debt capacity of a sovereign entity and is a function of requirements placed on the host country by its own laws or by the rules applied by supra- or international bodies or market constraints, such as the International Monetary Fund (IMF) and the rating agencies.

Another advantage to the shareholders of project financing is the absence, or limitation, of recourse by the lenders to the shareholders. The project company is generally a limited liability, special purpose project vehicle, therefore the lenders' recourse will be limited primarily or entirely to the project assets. The extent to which some recourse is provided to shareholder assets is commonly called "sponsor support," which may include contingent equity or subordinated debt commitments to cover construction or other price overruns. These key

[4] It should be noted that keeping debt off-balance sheet does not necessarily reduce actual liabilities for the government and may merely disguise government liabilities, reducing the effectiveness of government debt-monitoring mechanisms. As a policy issue, the use of off-balance sheet debt should be considered carefully, and protective mechanisms should be implemented accordingly.

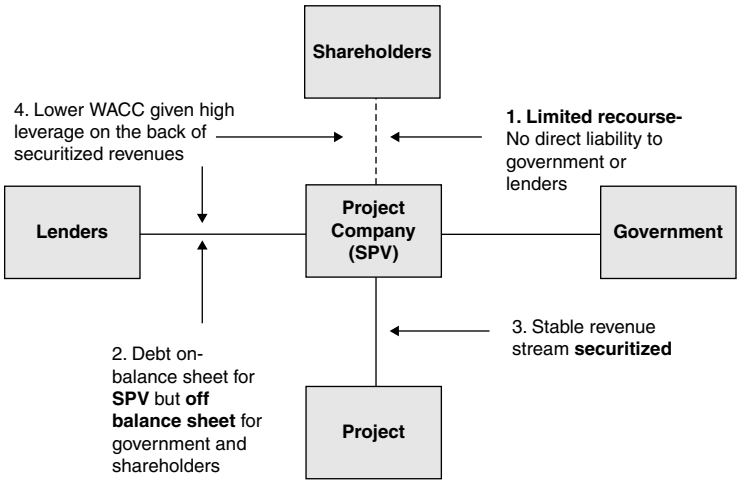

Figure 3.2. ***Key characteristics of project finance.***

characteristics of project financing for PPP are set out in Figure 3.2.

3.2.2 Bankability

The lenders' recourse for repayment of debt will be limited primarily to the revenue flow from the project. Due to the limited recourse and highly leveraged nature of project financing, any interruption of the project revenue stream, or additional costs not contemplated in the project financial plan, will directly threaten the ability to make debt-service payments. Thus, the majority of project risks borne by the project company will be borne by

the lenders. This makes lenders extremely risk averse. The lenders will want to ensure that the risks borne by the project company are limited and properly managed, and that the project involves a solid financial, economic, and technical plan. Therefore, before committing themselves to a project, the lenders will perform an in-depth review of the viability of the project (their "due diligence"). This is known commonly as verifying the project's "bankability."

Bankability requirements will vary based on the identity of the lenders, who will have different interests and concerns and perceptions of risk. The lenders' vigilance is a key benefit of project finance, helping the grantor and shareholders alike assess project viability. Clearly, an overly anxious lender can delay, complicate, or even undermine a project. Equally, a lender that is not sensitive to risk – for example, where the government provides a comprehensive guarantee of the debt – will not be as concerned about due diligence, and therefore the benefits of lender project assessment are lost. A lender's due diligence consists of the elements described further in this chapter.

3.2.2.1 Economic and Political Stability. The lenders will wish to review the effect the local economy and the project will have on each other. Although it is the grantor and not the lenders who should be verifying

that the project will have an overall beneficial impact on the site country and the local economy, the lenders will need to assess the net political and socioeconomic benefit the project can have on the site country generally.[5] A commonly used measurement is the economic internal rate of return (EIRR)[6], which means the project's rate of return after taking into account economic costs and benefits, including monetary costs and benefits. EIRR captures the externalities (such as social and environmental benefits) not included in financial IRR[7] calculations.

The lenders will also use this macro-level assessment to ask certain fundamental questions about the project, such as:[8]

- historical and likely future trends in prices, costs, production, availability, quality, competition, demand, and the nature of the demand;

[5] For further discussion of this issue, see Haley, *A-Z of BOOT* (1996: 34).

[6] EIRR is the project's internal rate of return after taking into account externalities (such as economic, social, and environmental costs and benefits) not included in normal financial IRR calculations.

[7] FIRR is the discount rate that equates the present value of a future stream of payments to the initial investment. See also economic IRR.

[8] As modified from United Nations Industrial Development Organisation, *Guidelines for Infrastructure Development through Build-Operate-Transfer* (1996: 130).

- identification and location of the input supplier and other service providers;
- flexibility, sophistication, skill, and depth of the labor market;
- historical and likely future trends in inflation rates, interest rates, foreign exchange, cost and availability of labor, materials, and services (such as water, power, and telecoms);
- condition of local infrastructure;
- administrative burden placed on imports, in particular specialized labor and equipment.

3.2.2.2 Legal/Regulatory. The lenders will want to consider the legal system (including regulation and taxation) applicable to the project in view of:

- a long-term commercial arrangement based on undertakings by the public sector, property rights, taking of security, asset management, likely tax exposure and corporate structures, and the likelihood of changes in law and taxation during the project;
- whether and to what extent the legal system is accessible to the project company and the lenders, including the time and resources required to access judicial review and whether such decisions can be enforced (courts or arbitration);

- availability of security rights and priority given to creditors.

3.2.2.3 Financial. In asset financing, it is the value and rate of depreciation of the underlying assets that defines the lenders' security and willingness to finance a project. In project financing, it is the viability of the project structure, the business plan, and the forecast revenue stream that will convince the lenders to provide financing. The revenue stream is only as secure as the credit position of the offtaker (e.g., the power utility that plans to buy the electricity generated), so lenders will assess carefully the credit risk of different project counterparties, including, of course, the project shareholders. Financial due diligence will include issues associated with financing risk, such as historical information on exchange rate movements, inflation, interest rates, availability of hedging and swaps, availability of insurance and reinsurance, and remedies available against different counterparties if certain risks arise.

The lenders will develop their financial model from the information available. This model will identify the various financial inputs and outflows of the project. By calculating project risk into the financial model, the lenders will be able to test project sensitivities and how far the project can absorb the occurrence of a given risk.

When assessing financial viability, the lenders will use the financial model to test a number of financial ratios, in particular debt-to-equity, debt-service cover, loan life cover, and rates of return (some of these concepts are defined in Box 3.1 and in the Glossary).

Box 3.1. Financial Terms

A number of financial ratios are used to test financial viability, including:

- ✓ *Debt-to-equity ratio* – compares the amount of debt in the project against the amount of equity invested.
- ✓ *Debt-service cover ratio (or "DSCR")* – measures the income of the project available to meet debt service (after deducting operating expenses) against the amount of debt service due in the same period. This ratio can be either backward or forward looking.
- ✓ *The loan life cover ratio (or "LLCR")* – is the net present value of future project income, available to meet debt service, over the maturity of the loan against the amount of debt.

3.2.2.4 Technical. The review of the project carried out by the lenders will also focus on the technical merits of the design, or intended design, and the technology to be used in the project. The lenders will prefer not

to finance projects using cutting edge or untested technology. They will want to have relatively accurate performance forecasts, including operation, maintenance, and lifecycle costs, the capacity of the technology to be used, its appropriateness for the site, and the type of performance required from the project, and will therefore prefer tried and tested technology used in similar projects with well-documented performance. Technical due diligence will also consider administrative issues, such as the likelihood of obtaining permits and approvals using the technology in question, as well as the reasonableness of the construction schedule and price.

3.2.3 Refinancing

After completion of construction, once construction risk in the project has been significantly reduced, the project company will look to refinance project debt at a lower cost and on better terms, given the lower risk premium. In developed economies, the capital markets are often used as a refinancing tool after completion of the project, because the bondholders prefer not to bear project completion risk but are often able to provide fixed rates at a longer tenor and lower margin than commercial banks. Refinancing can be very challenging, in particular for lesser developed financial markets, but can significantly increase equity return, with the excess debt

margin released and the resultant leverage effect, where the project performs well and where credit markets are sufficiently buoyant. Whereas wanting to incentivize the project company to pursue improved financial engineering, in particular through refinancing, the grantor will want to share in the project company's refinancing gains, often in the form of a 50–50 split.

3.3 What the Government Can Do to Improve the Financial Climate

Governments can and should provide a number of financial mechanisms to support and enable PPP.[9] Few PPP projects are viable without some form of government technical or financial support. Efficient financing of PPP projects can involve the use of government support to ensure that the government bears risks it can manage better than private investors and to supplement projects that are economically but not financially viable. Where infrastructure projects have large public externalities, some level of direct financial support from the government may be appropriate. Also, local financial markets may not be able to provide the financial products (in

[9] Delmon, *Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risk* (2nd ed., Kluwer and World Bank, 2009).

particular long-term, fixed-interest debt) needed for PPP, even though such products would benefit the entire financial market. The government can do much to resolve these issues by providing funded or contingent products, or by creating entities that provide some form of financial support necessary for PPP to flourish (see Figure 3.3).

Each project is likely to require tailor-made support, but the individual instruments to be used should be carefully designed to provide the perceived predictability that the private investor needs and flexibility the government needs.

When considering government support, the government will need to consider carefully:

- which projects to support;
- how much support to provide;
- the terms of such support;
- how to ensure that support is properly managed – in other words, transparency and proper governance.

In particular, government support can create conflicts of interest or misaligned incentives, because the government will be playing different roles on different sides of the transaction; for example, it may be grantor and shareholder at the same time. Government support therefore needs to be designed, implemented, and regulated carefully.

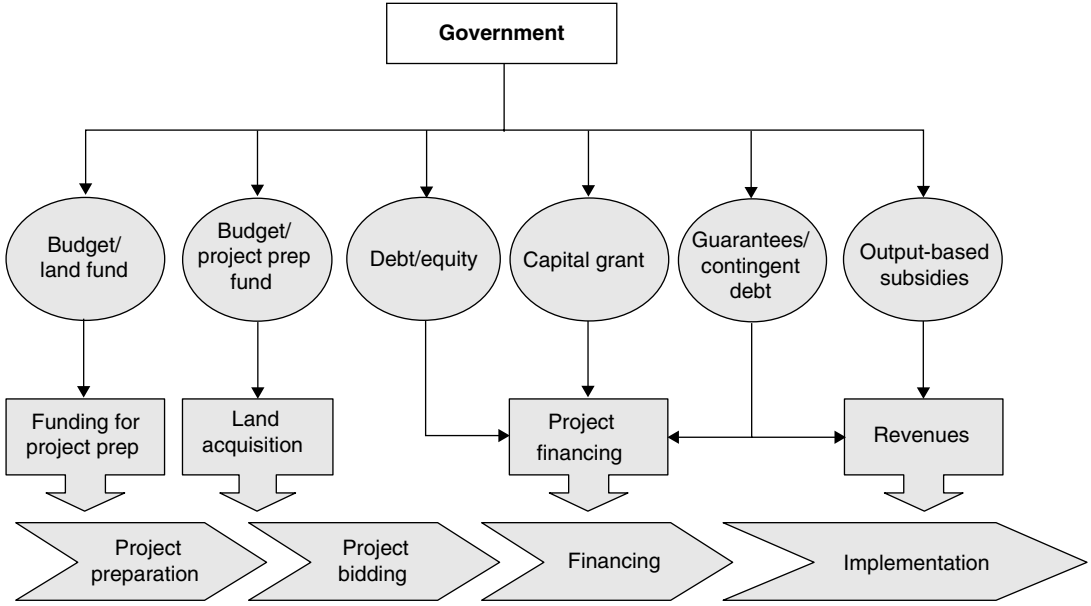

Figure 3.3. ***Mechanisms to encourage PPP.***

Key Messages for Policy Makers

✓ *Government money can be used effectively to improve PPP projects*. Government is a key partner in PPP and government support a key element in successful PPP:
- Government support can improve financial viability and make a project more attractive for investors, but it will not turn a bad project into a good one.
- Use government support efficiently, in a targeted manner, to ensure government goals are achieved.
- Ensure funding mechanisms are properly resourced and incentivized to avoid political capture or inertia.

The decision on providing government support should be finalized and announced well before the project bid date, to improve the private investor's appetite, increase the number of bids, and reduce project costs for the grantor. This works well only if the support is announced in advance of the competition and if it is well designed. Allocation of government support after the bid date will deprive the grantor of most of these benefits.

3.3.1 Funded Products

The government may decide to provide direct support for the project – for example, through subsidies/grants,

equity investment, and/or debt. These mechanisms are particularly useful where the project does not on its own merit achieve bankability, financial viability, or is otherwise subject to specific risks that the private investors or lenders are not well placed to manage. In developing countries where private finance is most needed, these constraints may necessitate more government support than would be required in more developed countries. Funded support involves the government committing financial support to a project, such as:

- direct support – in cash or in kind (e.g., to defray construction costs, procure land, provide assets, compensate for bid costs, or support major maintenance);
- waiving fees, costs, and other payments that would otherwise have to be paid by the project company to a public sector entity (e.g., authorizing tax holidays or a waiver of tax liability);
- providing financing for the project in the form of loans (including mezzanine debt) or equity investment;
- funding shadow tariffs and topping up tariffs to be paid by some or all consumers (in particular, those least able to pay) to reduce the demand risk borne by the project company.

These mechanisms can be used in combination and can be more or less targeted (see Box 3.2).

Box 3.2. Targeted Support

Output- or performance-based subsidies or aid make a clear link between the intended results and payment.[10] Although requiring evidence of the ultimate output (e.g., healthier children or improved industrial output) is impractical for a number of reasons, governments can require the project company to perform a task or provide a service that achieves a stated objective before aid or subsidies are paid out – for example, a specified number of additional poor households connected to the electricity grid and using the service. These outputs need to be targeted to ensure they achieve the desired impact (e.g., connections alone will not create an output unless the service delivery is sustainable).[11]

3.3.2 Contingent Products

The government may choose to provide contingent mechanisms, that is, where the government is not providing funding but is instead taking on certain contingent liabilities – for example, providing:

- guarantees, including guarantees of debt, exchange rates, convertibility of local currency, offtake purchaser obligations, tariff collection, the level of tariffs

[10] Brook and Petrie, Output-based Aid: Precedents, Promises and Challenges, http://www.gpoba.org/docs/05intro.pdf

[11] See, generally, www.gpoba.org

permitted, the level of demand for services, termination compensation, and so on;
- ➢ indemnities, for example, against nonpayment by state entities, for revenue shortfall, or cost overruns;
- ➢ insurance;
- ➢ hedging of project risk – for example, adverse weather, currency exchange rates, interest rates, or commodity pricing;
- ➢ contingent debt, such as take-out financing (where the project can only obtain short tenor debt, the government promises to make debt available at a given interest rate at a certain date in the future) or revenue support (where the government promises to lend money to the project company to make up for revenue shortfalls, enough to satisfy debt-service obligations).

For example, on the Zagreb-Macelj toll road, the government provided in-kind support in the form of land and contingent debt drawn down whenever revenues were insufficient to cover debt service. Thus, lenders were protected, but the risk remained with the equity holders.

The government will want to manage the provision of government support, in particular any contingent liabilities created through such support mechanisms. Governments seek a balance between (1) supporting private infrastructure investment and (2) fiscal

prudence.[12] Striking the right balance will help the government make careful decisions about when to provide public money support and manage the government liabilities that arise from such support, while still being aggressive in encouraging infrastructure investment. Government assessment of projects receiving such support is doubly important given the tendency of lenders to be less vigilant in their due diligence when government support is available, since this reduces lender risk and exposure.

Governments actively managing fiscal risk exposure face challenges associated with gathering information, creating opportunities for dialogue, analyzing the available information, setting government policy, and creating and enforcing appropriate incentives for those involved.[13] Given the complexity of these tasks, it is becoming more popular for governments, and in particular ministries of finance, to create specialist teams to manage fiscal risk arising from contingent liabilities, in particular those associated with PPP. This is often achieved through debt

[12] For further discussion of this issue, see Irwin, *Government Guarantees: Allocating and Valuing Risk in Privately Financed Infrastructure Projects* (World Bank, 2007).

[13] Brixi, Budina, and Irwin, *Managing Fiscal Risk in Public Private Partnerships* (World Bank, 2006).

management departments, which are already responsible for risk analysis and management.[14] The government may also consider creating a separate fund to provide guarantees, allowing the government to regulate better this function and ring fence the associated government liabilities.

3.3.3 Financial Intermediation

The government may wish to use its support to mobilize private financing (in particular from local financial markets) where this financing would not otherwise be available for infrastructure projects. The government may want to mobilize local financial capacity for infrastructure investment, to mitigate foreign exchange risk (where debt is denominated in a currency different than revenues), to replace retreating or expensive foreign investment (for example, in the event of a financial crisis), and/or to provide new opportunities in local financial markets. But local financial markets may not have the experience or risk management functions needed to lend to some subsovereign entities or to private companies on a limited recourse basis.

[14] Different structures may be needed to track and manage risks created by central and local governments.

To overcome these constraints, the government may want to consider the intermediation of debt from commercial financial markets, creating an intermediary sufficiently skilled and resourced to mitigate the risks that the financial markets associate with lending to infrastructure projects. To achieve this, the government may want to use a separate mechanism (the "intermediary") to support such activities without creating undue risk for the local financial market – for example, by:

- using the intermediary's good credit rating to borrow from the private debt market (e.g., providing a vehicle for institutional investors who could not invest directly in projects) and then lend these funds to individual entities or projects as local currency private financing of the right tenor, terms, and price for the development of creditworthy, strategic infrastructure projects;
- providing financial products and services to enhance the credit of the project and thereby mobilize additional private financing – for example, by providing the riskiest tranche of debt, providing specialist expertise needed to act as lead financier on complex or structured lending, syndication, credit enhancement, and specialist advisory functions;

- providing support to finance or reduce the cost or improve the terms of private finance for key utilities. These entities may need first to learn gradually the ways of the private financial markets, and the financial markets may need to get comfortable with lending to infrastructure operators. This mechanism can help slowly graduate such subnational entities or state-owned enterprises from reliance on public finance to interaction with the private financial markets.

Current best practice indicates that such intermediaries should be private financial institutions with commercially oriented private sector governance. Intermediaries meant to create space in an existing financial market must have commercial incentives aligned to this goal, with appropriately skilled and experienced staff, and a credit position sufficiently strong to mobilize financing from the market. Existing private financial institutions with appropriate skills and capacity can help perform this function. However, private entities often suffer from conflicts of interest (e.g., holding positions in the market such that their interests are not aligned with the role of intermediary) or are constrained from taking positions in the market due to their role as an intermediary (crowding out vital market capacity). The government may thus want to create a new private entity to play this role.

Box 3.4. Infrastructure Development Finance Company ("IDFC") of India

IDFC was set up in 1997 by the Government of India along with various Indian banks and financial institutions and IFIs. IDFC's task was to connect projects and financial institutions to financial markets and by so doing develop and nurture the creation of a long-term debt market. It offered loans, equity and quasi-equity, advisory, asset management, and syndication services and earned fee-based income from advisory services, loan syndication, and asset management, capitalizing on its established knowledge base and credibility in the market. IDFC also developed a project development arm, taking early positions in some project vehicles. By bringing projects through feasibility, structuring, and presentation to bidders, it generated success and development fees from the winning bidders.

The agency invested significant efforts in its early years in policy and regulatory framework changes to facilitate private investment in infrastructure. More bankable infrastructure projects subsequently emerged. IDFC has successfully leveraged the fact that the government holds an equity stake – without compromising on its commercial orientation.

IDFC began operations with a strong capital base of approximately US$400 million. Growth was initially slower than expected. After six years of operations, IDFC had a loan portfolio of approximately US$550 million, and

Box 3.4. Continued

growth accelerated. After eight years, an IPO in July 2005 introduced new equity and allowed early investors to realize their gains. An additional US$525 million equity was raised through an institutional placement in 2007, by which time the Indian government's stake had fallen to 22 percent. Other major shareholders now include Khazanah, Barclays, and various Indian institutions.

3.3.4 Project Development Funds

In the United Kingdom, arguably one of the most efficient PPP market in the world, advisory costs during project development average 2.6 percent of project capital costs.[15] Advisory costs in less-developed PPP markets run even higher. The large amount of up-front costs for procuring PPP projects, in particular the cost of specialist transaction advisers, often meets with strong resistance from government budgeting and expenditure control. However, quality advisory services are key to successful PPP development and can save millions in the long run.[16]

[15] National Audit Office (UK), "Value for Money Drivers in the Private Finance Initiative" (2007).

[16] Department of the Treasury (UK), "Strengthening Long-term Partnerships" (March 2006).

Therefore, funding, budgeting, and expenditure mechanisms for project development are important to a successful PPP program, enabling and encouraging government agencies to spend the amounts needed for high-quality project development.

The government may wish to develop a more or less independent project development fund (PDF), designed to provide funding to grantors for the cost of advisers and other project development requirements (see Box 3.5). The PDF may be involved in the standardization of methodology or documentation, its dissemination, and monitoring of the implementation of good practices. It should provide support for the early phases of project selection, feasibility studies, and design of the financial and commercial structure for the project, through to financial close and possibly thereafter, to ensure a properly implemented project. The PDF might focus on specific sectors or projects in a region or nationally but needs to have a broad scope to address the different forms of PPP to respond to sector needs. The PDF may provide grant funding, require reimbursement (for example, through a fee charged to the successful bidder at financial close) with or without interest, or obtain some other form of compensation (for example, an equity interest in the project), or some combination thereof, to create a revolving fund. The compensation mechanisms can be

used to incentivize the PDF to support certain types of projects.

Box 3.5. South Africa's PDF

South Africa's Project Development Fund (PDF) is a single-function trading entity created within the National Treasury in accordance with the Public Finance Management Act. Its primary function is to support governmental entities with the transaction costs of PPP procurement. The PDF:

- collaborates with the Department of Provincial and Local Government's Municipal Service Partnerships Unit;
- provides funding for the preparation of feasibility studies and procurement of service providers;
- may consider funding the costs of procuring the project officer.

Support from the PDF can only be acquired if the project receives support from the National Treasury's PPP Unit.

The PDF recovers its disbursed funds either in part or in full as a success fee payable by the successful bidder at the financial close of the project. The risk of the project not reaching financial close is taken by the PDF in all cases other than an institutional default.

— ✤ CHAPTER FOUR ✤ —

Allocation of Risk

A successful project must benefit from workable, commercially viable, and cost-effective risk sharing. Given the differing interests and objectives of the parties involved, effective risk allocation will be an essential part of the drafting of the project documents and an integral part of the project's success. As discussed in Chapter 3, project finance lenders in particular are extremely sensitive to risk allocation and will look to see a contractual documentation that creates a "bankable" risk allocation.

Key Messages for Policy Makers

- ✓ *Don't cram risk on the private sector*. It usually is inefficient, expensive, and makes the project overly vulnerable to change and crises.
- ✓ *Prepare for change during the project*. It is not possible to anticipate or make every risk decision in advance; mechanisms will be needed to address change and other challenges.

Risk management based on efficiency[1] is, of course, an ideal, a goal. In practice, risk tends to be allocated on the basis of commercial and negotiating strengths. The stronger party will allocate risk that it does not want to bear to the weaker party. This scenario does not necessarily provide the most effective and efficient risk management.[2] Figure 4.1 shows this phenomenon from the government's perspective: allocating too much risk to the project company results in an expensive and unstable project; allocating too little risk results in a loss of value for money. Getting this balance right is notoriously difficult.

In most conventionally financed projects, it is accepted that certain risks (such as market risk, certain political

[1] An oft-quoted approach to "efficient" risk allocation places each risk on the party best able to manage that risk. Although a useful rule of thumb, this is a gross simplification. See Chapters 1–3 of Delmon, *Project Finance, BOT Projects and Risk* (2005); for example, risk also needs to be borne by the party that has an interest in managing it proactively, has or will obtain the resources needed to address risk issues as and when they arise (the sooner the better) in a manner intended to reduce their impact on the project, has access to the right technology and resources to manage the risk when it crystallizes, can manage the risk at the least cost, and delivers value for money.

[2] *Business Roundtable in "Contractual Arrangements": A Construction Industry Cost Effectiveness Project Report*. The Business Roundtable, New York (October 1982).

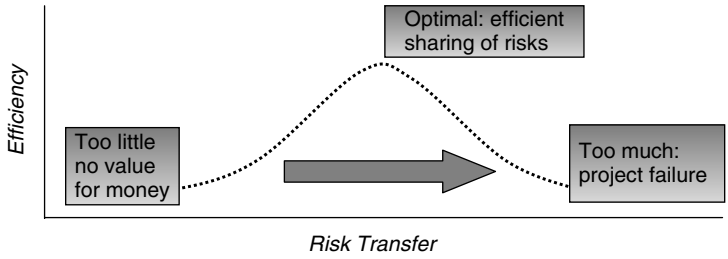

Figure 4.1. ***Efficient risk allocation.***

risks, and completion risk) will be allocated by the grantor to the project company in relation to the role the project company plays in the project. For bearing such risks, the project company is compensated by higher returns on its investment. However, project financing is obtained primarily through the lenders rather than the investment or liability of the shareholders. The lenders will attempt to limit their assumption of project risk; they will require the project company to allocate as much of its risk as possible to the different project counterparties (e.g., the offtake purchaser, the construction contractor, and the O&M contractor). The effort to transfer all project risk to these subcontractors is known as "back-to-back" risk allocation. Complete back-to-back risk allocation will result in the transfer of all project risk assumed by the project company to the other project participants. Rarely, if ever, will a PPP project achieve complete back-to-back

allocation, although the most developed PPP markets like the United Kingdom achieve something close to it.

The following risks are of concern to parties, in particular in relation to the potential for increase in costs, reduction in revenues, or delay in payment.

4.1 Political Risk

The grantor may accept to bear a certain amount of political risk (such as events of war, rebellion, default or failure of public sector entities, change in law, and delays by authorities) as the sole party who may be able to influence its advent and mitigate its effects. However, host governments may not be willing to bear all political risk and may require the project company to bear certain aspects or the majority of this risk as would other companies investing in that country.

Political risk includes:

- changes in law or regulations, in particular the risk of discriminatory changes in law (those changes that are specific to the sector involved, private financing of public projects generally, or the project itself) and changes in technical parameters through permits, consents, or import licenses;

- expropriation – it is a basic principle of international law that a sovereign government has the right to expropriate property within its territory for public purposes, but must compensate the owner;[3]
- regulatory decisions that differ from the commercial arrangements underlying the PPP;
- ability of the project company to access justice, in particular enforcing the government's obligations;
- whether the grantor (or other key public parties) has the right or the power (*vires*) to enter into the obligations involved in the project and what administrative or legal requirements must be satisfied before those obligations can become binding.

The project company may look to methods of mitigating this risk, for example:

- the consideration of the host government's (and other political actors') interests and their implementation in the project;
- the involvement of local lenders and local shareholders or subcontractors;

[3] A sovereign state holds the power of disposition over its territory as a consequence of title. Brownlie, *Principles of Public International Law* (4th ed., 1990: 123).

- political risk insurance, or MLA involvement, or specialized risk mitigation products (see Sections 5.9 and 5.10).

4.2 Legal and Regulatory Risk

Certain critical legal issues need to be addressed as a prerequisite to implementing PPP. These issues include:[4]

- authority of the grantor to undertake the project;
- procurement rules that permit PPP arrangements;
- security rights over assets and/or shares sufficient to provide the lenders with enough protection;
- access to justice (ideally international arbitration) and a reasonable mechanism for and history of enforcement of judgments/arbitral awards against the government.

A host of other legal issues will be important to ensure the proper functioning of PPP, for example land acquisition, labor relations, tax and accounting (e.g., transfer

[4] Legal and regulatory risk represents the application of political risks and decisions, discussed further in section 4.2. The close relationship between these sections results in some overlap in the discussions here.

costs, depreciation, VAT offsetting), and regulatory mechanisms.[5]

4.3 Completion Risk

The construction phase involves potentially the most costly project risk. The nature of PPP is such that an incomplete project will be of limited value. PPP allows the grantor to package completion risks in a more efficient manner, often known as single point risk allocation. This means that design, construction, installation, commissioning, operation, maintenance, and refurbishment risk are all allocated to and managed by one entity. Single point responsibility reduces the interfaces between different project functions that can result in errors, delays, and a "claims culture" (where different contractors blame each other for any defects discovered – the number of interfaces facilitates such blame games). Under single point responsibility, these interfaces are managed by the project company (who is likely more capable of performing this function than the grantor) and allocated to the construction contractor.

[5] A full discussion of these issues can be found in Chapter 8 of Delmon (2nd ed., 2009), supra note 9 of Chapter 3.

The implications of completion risk can be divided into three key categories:

- Cost of construction – a PPP project, in particular using project finance, is a delicate balance of financial covenants, ratios, and commitments that will be extremely sensitive to changes in cost. An increase in cost would require adjustment to these, as well as the need for one of the parties to provide additional funding (unlikely to be provided by the lenders), possibly through standby facilities arranged before commencement;
- Time for completion – The project company will want to commence operation of the project as soon as possible to earn maximum revenue and improve return on investment. Similarly, the grantor and the offtake purchaser will have put the project out to tender owing to a pressing need for the service to be rendered and will therefore want the construction completed in the least possible time. Therefore, timely completion of construction will be a key concern of the principal project parties and will be monitored and sanctioned accordingly;
- Quality of finished works – The finished works must satisfy certain tests and inspections in order to demonstrate compliance with the project specifications,

successful connections with any external network (such as a power grid or a water system), and proper management of interfaces between different equipment and technologies used in the project. The finished product must be capable of delivering output in accordance with the project expectations; any shortfall would require financial restructuring to enable project revenues to meet project costs and service debt.

Completion risk includes:

- the adequacy of the design of the works;
- the nature of the technology to be used and the availability of equipment and materials, including transportation, import restrictions, pricing, services necessary for construction, financing costs, and administrative costs;
- unforeseen events or conditions, such as weather or subsurface conditions;
- the availability of labor and materials, whether skilled labor can be procured locally, to what extent both labor and materials will need to be imported, visas and licenses for such importation, and restrictions imposed by local labor laws (including working hours and holiday entitlement);

- ➢ the availability of associated infrastructure and services, such as access (road, rail, and air links), water, and electricity;
- ➢ the program for completion, whether the construction methodologies are appropriate given seasonal climate, the approvals process, coordination among subcontractors, and testing and commissioning programs.

Completion risk is generally allocated to the construction contractor by the project company.

4.4 Performance Risk

For the project to maintain sufficient revenues to satisfy debt servicing and to provide a return for the shareholders, the project must deliver infrastructure services to specified levels. Performance risk results in the inability of the facility to deliver the services in the manner and timing required and agreed, for example:

- ➢ errors in the design of the facility;
- ➢ environmental issues that impede the operation of the facility;
- ➢ the use of inappropriate technology;
- ➢ improper operation of the facility;
- ➢ insufficient quality of input used or inappropriate manner of offtake or use of project services.

Therefore, performance requirements are imposed on the project company by the grantor and/or the offtake purchaser whose requirements are then passed on to the project participants (in particular, the construction contractor and the operator). Whether these requirements are fulfilled by the completed works will be verified by performance tests, as part of the construction regime. During operation, the facility will be tested periodically to ensure service delivery. The importance of these performance requirements leads lenders to insist on the use of proven technology. The project company may also wish to obtain further guarantees from suppliers and designers where relevant. These other entities may be best able to cure certain defects or to update technology, as necessary.

4.5 Operation Risk

Clearly, the project must operate to given performance levels in order for the project company to earn the revenues needed to pay operating costs, repay debt, and achieve the levels of profit needed. The project company will be required to operate the project in a proper and careful manner so as to comply with applicable law, permits, and consents, as well as to avoid damage to the

project, the site, local or related infrastructure facilities, and neighboring properties. Operation risk will include:

- the risk of defects in design, equipment, or materials beyond the construction contractor's defects liability period;
- the availability of labor and materials, the cost thereof, whether skilled labor can be procured locally, to what extent both labor and materials will need to be imported, visas and licenses for such importation, and restrictions imposed by local labor laws;
- changes in operating requirements owing to changes in law, regulations, or other circumstances;
- proper maintenance of the project and the cost of asset replacement and major maintenance;
- the availability of experienced management committed to the project for the duration of the concession period;
- the program for operation and maintenance and whether that program follows a logical regime, correlated with the offtake purchaser's needs, and a realistic approach given the nature of the site country, government regulations on labor and operation, and the technical requirements of the project;
- where the project requires input for operation, and where the market for such inputs is not sufficiently flexible or there is some concern as to its future

viability, the lenders may require that the project company enters separate input supply arrangements to ensure, for example, availability of fuel, electricity, chemicals, or other inputs or services such as disposal of sludge or ash.

4.6 Financing Risk

Financing risk relates to the sources of financing to be accessed for the project, the nature of lenders and borrowers, and the constraints imposed by the financial markets at the time of financial close and during the life of the project. This risk can result in increases in the cost of financing and will have a fundamental influence on the financial viability of the project; for example, PPP projects are sensitive to:

- sufficient tenor of debt (projects with large up-front investment in long lifecycle assets usually look for twelve- to twenty-year debt) and the availability of takeover or refinancing for short tenor debt;
- the ability to roll up interest (i.e., pay it later) during a grace period, sufficient to address any lack of revenue during the construction period;
- interest rates – project finance looks for fixed-rate debt given the fixed nature of the revenue stream. If fixed-rate debt is not available, increases in interest rates

beyond debt manageable through the revenue stream will need to be hedged or otherwise managed;

- ➢ foreign exchange rates (where the currency of revenues and debt are different – the risk of movements between these);
- ➢ the cost of hedging (where interest rate, foreign exchange, or other risks are managed through hedging arrangements, the cost and availability of such hedging instruments);
- ➢ the availability of working capital financing to cover short-term financing needs;
- ➢ the credit risk of key project participants, including any available third-party warranties, bonds, and guarantees.

Much of financing risk is managed by the project company with the lenders. The cost of financing is likely to be uncertain, to some extent, until financial close, since the project company is unlikely to implement any of these financing mechanisms before then. Therefore, the grantor will generally share the risk of changes in the cost of financing between bid date and financial close.

To the extent that hedging is not a viable option to manage specific risks (interest rate and foreign exchange in particular), the grantor may wish to provide protection

against such financing risks. For example, grantors or off-take purchasers often help manage foreign exchange risk to give the project company the flexibility to use foreign currency debt (which can reduce the cost of debt). They may provide take-out guarantees, promising to provide financing at a specific tenor and interest rate at a future date. This protects the project company from the risk that refinancing might not be available at a reasonable price in the future, where long tenor debt is not otherwise available on reasonable terms.

4.7 Currency Risk

Monetary regulation and market conditions can limit the extent to which local currency (capital, interest, principal, profits, royalties, or other monetary benefits) can be converted to foreign currency, how much foreign currency is available, and the extent to which local and foreign currency can be transferred out of the country. These restrictions cause significant problems for foreign investors and lenders who will want to have access to distributions and debt service in foreign currencies and to service their debt abroad. As a principally regulatory risk, this risk is often managed by the grantor in developing countries.

4.8 Offtake Risk

Offtake risk involves any reduction in or failure of the use of the services provided by the facility, for example, with respect to the levels forecast, if fewer people are using the toll road, less electricity is taken from the generator, fewer passengers or aircraft are using the airport, and the like. It can be caused by, for example, reduced demand for the offtake, inability of the offtaker to pay for the offtake, technical or practical difficulties with delivering the offtake, and public reaction resulting in a boycott against the offtake.

Future forecasts of demand, cost, and regulation of the sector in any site country will be important to private sector investors considering the revenue prospects of the project. For example, they may wish to:

- review the demand profile for project offtake in the context of the extent to which the project company will bear project risk and will be able to influence demand;
- examine demand projections and information on the historical willingness of consumers to pay tariffs and to pay such tariffs on time;
- analyze prospects for growth, demographic movements, current tariffs, and projections of consumer attitudes toward paying increased tariffs;

- where tariffs are based on indices, assess projections of the future movement of such indices and their relation to actual costs, including operating costs, finance costs, capital expenditure requirements, and other such costs;
- review the extent to which consumer tariffs cover utility costs and depreciation.

Where these assessments result in specific risk concerns, the project company may need to obtain third-party protection (for the lenders and possibly for equity – see Sections 4.10 and 5.10), such as:

- undertaking(s) to purchase offtake in a quantity and at pricing designed to provide the revenue needed (see Section 5.2);
- revenue guarantees to ensure a minimum level of revenue;
- demand guarantees to protect the project company from the impact of occurrences like, for example, traffic being lower than forecast/assumed at bid;
- partial risk guarantee to protect the revenue stream from shortfalls associated with specific project risks.

The private sector is generally better at delivering retail infrastructure services to consumers, and therefore the grantor may want the project company to bear some

portion of offtake risk to ensure the project company is incentivized to innovate and improve service delivery.[6]

4.9 Environmental and Social Risks

Environmental and social laws and regulations will impose liabilities and constraints on a project. The cost of compliance can be significant and will need to be allocated between the project company and the grantor. Equally, in order to attract international lenders, in particular IFIs, the project must meet minimum environmental and social requirements that may exceed those set out in applicable laws and regulations (see Box 4.1). This process is made easier where local law supports similar levels of compliance.

Infrastructure projects generally have an important impact on local communities and quality of life, particularly in the delivery of essential services like water and electricity or land-intensive projects like toll roads. Project impact on society, consumers, and civil society generally

[6] For a discussion of private-sector performance in water and electricity distribution projects, see Andres, Foster, Guasch, and Haven, *The Impact of Private Sector Participation in Infrastructure: Lights, Shadows, and the Road Ahead* (World Bank 2008); Gassner, Popov, and Pushak (2007), supra note 11 of Chapter 1.

Box 4.1. Equator Principles

The Equator Principles[7] constitute a voluntary code of conduct originally developed by the International Finance Corporation (IFC) and a core group of commercial banks, but now recognized by most of the international commercial banks active in project finance. These banks have agreed not to lend to projects that do not comply with the Equator Principles, which follow the IFC system of categorizing projects, identifying those that are more sensitive to environmental or social impact, and requiring specialist assessment where appropriate. During project implementation, the borrower must prepare and comply with an environmental management plan (EMP).

can result in resistance from local interest groups that can delay project implementation, increase the cost of implementation, and undermine project viability.[8] This "social risk" should be high on a lender's due diligence agenda, though it often is not. The lenders and the project company often look to the grantor to manage this

[7] http://www.equator-principles.com

[8] Delmon, "Implementing Social Policy into Contracts for the Provision of Utility Services," in Dani, Kessler, and Sclar eds., *Making Connections: Putting Social Policy at the Heart of Infrastructure Development* (2007).

risk. The grantor in turn may underestimate its importance, because the social risk paradigm for public utilities is very different (it is usually easier for consumers to complain about, or sue, private companies than public utilities, therefore public utilities may not be as sensitive to social risk). The grantor may not have experience of the implications of social risk for private investors, and all parties may be caught unprepared for its implications.

4.10 Risk Allocation and Mitigation

The management of risk in PPP is a complex and intensive task, but a number of mechanisms have been developed to address these risks to make a project bankable and to benefit the different project parties by managing risks more efficiently. In particular:

- the project company will enter into contracts with specialist counterparties, or parties better placed to bear and manage certain risks. This is discussed in more detail in Chapter 5;
- insurance will be obtained for key insurable risks, in particular in relation to construction, equipment, buildings, staff and force majeure events (see Section 5.9);

- the government may provide guarantees or subsidies for specific risks (see Sections 3.3 and 5.10);
- MLAs, BLAs, and ECAs will provide debt, equity, insurance, and guarantees for specific risks (see Sections 5.9 and 5.10);
- other financial instruments may be used to manage risk, such as hedging, monoline insurance, catastrophe bonds, and the like (see Sections 5.8 and 5.10).

Clearly, an important part of risk mitigation is organizing the project and its assessment efficiently. When performing due diligence on a project, risks can be plotted on a risk matrix to help identify the gravity of specific risks, risk interfaces (e.g., where the whole of the risk profile is greater than the sum of its parts and were risks are intertwined so that when addressing a risk, one must address those related risks), and risk management priorities. Similarly, the tasks to be performed to prepare and implement the project can be plotted on a critical path, showing dependencies between them (e.g., which tasks need to be completed before other tasks can commence) and thereby helping identify the order in which these tasks should be performed to maximize efficiency.

— ✤ CHAPTER FIVE ✤ —

The Contractual Structure

As discussed in Chapter 1, PPP structures are ultimately flexible. Instead of endeavoring to dissect contractual structures and risk allocation for every possible PPP structure, this chapter will use the example of a project-financed BOT project to show how risk can be managed in the context of PPP. Project-financed BOTs are highly structured, risk-sensitive projects and therefore present a convenient opportunity for a discussion of key issues that arise in any PPP project.

The BOT project places the responsibility for financing, constructing, and operating the project on the private sector. The host country grants a concession to the private company to build and operate the facility over a period of time. The private company then uses the revenue from the operation of the facility to service debt and provide the investors with a return. Where the host

Key Messages for Policy Makers

- ✓ *Stability is the goal*. Prepare for every eventuality but realize it is impossible to anticipate every one of them.
- ✓ *Ensure a practical fallback position that protects consumers*. Make sure that if all else fails, the public is in the position to take the infrastructure and services back quickly to ensure continuity.
- ✓ *Keep the revenue stream as certain, foreseeable, and ring fenced as possible* – it is the lifeblood of the project.
- ✓ A failed project costs everyone time and money; *it is generally worth the extra money or effort to make the project a bit more robust*, obtaining information, improving planning, allocating and managing risk, and considering options.
- ✓ There will always be changes in circumstances and even full-blown crises, many of which will not be predictable, so *a proactive, collaborative framework must provide partners with the platform for resolution of conflict as and when it arises*.

country is also the offtake purchaser, the project is likely to be treated as payment for a service rather than financing of infrastructure. This can keep the project debt from being counted against the country's debt ratios or public sector borrowing requirements.

BOT projects are highly complex, commercially driven projects requiring extensive documentation and negotiation. A BOT project represents a serious investment of money and time by everyone involved. The project company, and in turn the lenders, will undertake technical, financial, and legal due diligence exercises to analyze risk allocation for a project. A robust contractual structure with commercially appropriate risk allocation will be a deciding factor in the bankability of the project (see Figure 5.1) and whether the lenders will wish to go forward with the project financing of infrastructure development.

5.1 Concession Agreement

Under the concession agreement (also known as the "implementation agreement"), the grantor grants a concession (a series of rights) to the project company to build and operate infrastructure (often what traditionally would otherwise be a public service) for a predetermined period – the concession period. The concession agreement may also set out the legal and tax regimes applicable to the project, including the environmental obligations of the project company. In practice, the concession agreement, the offtake purchase agreement, and/or the input

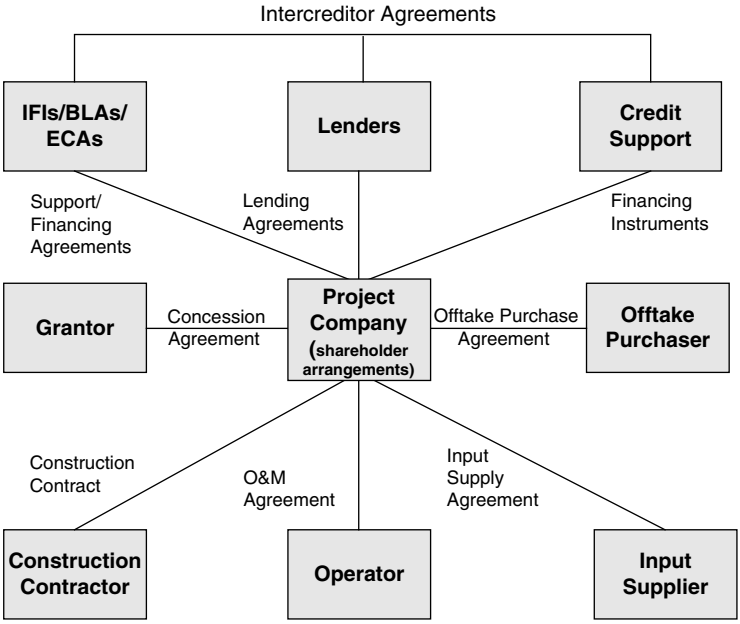

Figure 5.1. ***Typical BOT structure.***

supply agreement (to the extent each is needed) can be combined in one agreement.

The grantor needs to have the legal right to enter into the concession agreement – that is, the grantor's acts must be *intra vires*. Acts that are *ultra vires* (beyond the power of the party performing the act) may be unenforceable or subsequently rescinded or invalidated under

applicable law – in other words, if the grantor did not have the right to sign the contract, the project company may have trouble enforcing the contract (it might even be deemed never to have existed).

The primary issues addressed under the concession agreement will generally be as follows:

- *Completion date*. The grantor's need for the infrastructure in question is generally immediate (often as much for political as practical reasons);
- *Condition of assets*. Where existing assets are transferred to the project company, the condition of those assets should be described, with a mechanism to address the possibility that the assets are not actually in the condition anticipated;
- *Performance of the project*. The grantor's requirements will cover issues such as input consumption, efficiency of operation, maintenance needs and costs, lifecycle, health, safety, environmental, quality/quantity of the output/service generated, and cost of operation;
- *Maintenance regime*. To mitigate the detrimental effect of operation on the project during the concession period, the grantor will want to ensure that the maintenance regime (including replacement of parts and materials) implemented is sufficient, given the nature of the works involved. This is even more important late in the project; the incentive for the project company to

invest funds in maintenance during the final phase of the concession period may be diminished, owing to the imminent transfer of the project to the grantor;

- *Construction and operation*. The grantor will want to ensure that the project company's construction and operation activities meet certain minimum standards, both those imposed by law and those specified by the grantor to ensure the quality of the services provided and the protection of the public;
- *Government guarantees*. The government may provide guarantees for public sector bodies taking part in the project whose credit risk is otherwise insufficient, and these may be set separately or in the concession agreement where the government is a party;
- *Exclusivity*. The grantor may supply the project company with some form of exclusivity rights over the service to be provided to ensure a bankable revenue stream, with careful consideration of future requirements such as demographic changes and the needs of unserved communities;
- *Know-how transfer*. The grantor may want to maximize the interaction between the project company and local partners or the grantor's personnel in order to ensure the proper transfer of know-how;[1]

[1] For further discussion of the transfer of technology and know-how, see UNIDO (1996: 75–90) supra note 3 of Chapter 3.

- *Government interference*. The grantor may undertake that the host government will not act against the interests of the lenders, the shareholders, the project company, the performance of the project company's obligations, or the project itself to protect the project company from a specific subset of political risk;
- *Concession fees*. The project company may be required to pay concession fees for the privilege of obtaining a concession and to offset grantor costs, payable before commencement and possibly periodically during the concession period;
- *Restrictions on share transfers*. The grantor may want to place restrictions on the transfer or change of shareholding in the project company. The grantor may want to disallow any transfer (direct or indirect) until a certain point in time after completion of construction (a lock-up period), a right of approval over the identity of any transferee, and/or to maintain some guarantee from the original shareholders;
- *Grantor step-in/continuous operation*. The grantor may want the right to continue operation of the project where it terminates the concession agreement, sometimes referred to as the "right to continuous operation," to ensure continuous delivery of services;
- *Hand-back*. At the end of the concession period, the grantor will either put the project out for a retender

or will require the project company to transfer the project assets to the grantor or to a replacement project company.

5.2 Offtake Purchase Agreement

The offtake purchase agreement allocates the market risk of demand and the price for project output to an offtake purchaser. The offtake purchaser, although there may be more than one, is generally a local utility, public service provider, or operator that will purchase the output from the project company and then sell the output on the market, either directly to end users or to other offtake purchasers. The terms "offtake" and "output" may be misnomers, because the project may provide access to facilities (e.g., a hospital or school), treatment of waste (e.g., wastewater treatment or solid waste management), or access to networks (e.g., electricity transmission, gas pipelines, or telecommunications backbone). Regardless of terminology, these project generally require similar offtake purchase arrangements.

The offtake purchase agreement defines and delimits the revenue stream to be received by the project company, and therefore the lenders and shareholders, over the life of the project (usually fifteen to thirty years). It will define not only the amount of the revenue stream,

but also when it can be interrupted, modified, or terminated. It is often the offtake purchaser itself that has identified the need for the output and initiated or influenced the putting of the project out to tender.

The provisions of the offtake purchase agreement must reflect the nature of the output and the specific market of the project. They are common to power projects, the so-called power purchase agreement, water treatment projects, often called water purchase agreements, and other production projects, such as industrial plant (for example, aluminum smelters and oil refineries). This section assumes the output is an asset produced by the project and sold to the offtake purchaser. Where the project involves an output that is a facility or service, such as a road or bridge, or possibly a hospital or prison whose facilities will be made available to the offtake purchaser, the provisions of the offtake purchase agreement described later in the chapter will need to be modified accordingly.

Where the grantor benefits from the offtake of the project, a more common approach is to include the elements of the offtake purchase agreement (set out further in the chapter) in the concession agreement. In such cases, this section should be read together with Section 5.1.

PPP projects can also be structured without an offtake purchase agreement, such as tunnels, roadways, and bridges, where no physical offtake is produced and the

project company collects tariffs directly from consumers, for example where the grantor needs more assistance improving retail service delivery (such as water or electricity concessions, where output is delivered directly to consumers) and therefore looks to the project company to provide better services to consumers and bear more demand risk. Such projects often require the support of a sector regulator. However, no matter the approach taken, demand risk will still need to be managed as between the grantor and the project company, in particular the issues discussed later in the chapter.

The key terms addressed in an offtake purchase agreement will include the following:

- *Performance standards*. The offtake purchaser will want to define closely the technical parameters of operation in order to satisfy performance and other technical requirements, for example, levels of secure, clean, and safe operation within certain ranges of technical, climatic, and other operating parameters. The project company will then be penalized where the project does not satisfy these basic requirements.
- *Completion standards*. The transition from the construction period to the operation period, completion, and commencement of output production should be identified by the passing of defined tests or the issue

of a certificate. Completion under the offtake purchase agreement should correspond to completion under the construction contract.

- *Offtake price*. The offtake purchase agreement obliges the offtake purchaser to procure a certain amount of project output or pay for an amount of project service (under certain formulations such as "take-or-pay" or "payment for availability," whether or not it is used) over a given time. A dual payment system is often used, including a capacity (or availability) charge and a usage (or offtake) charge. The capacity charge is the amount paid for making the project available and will compensate the project company for its fixed costs. The usage charge is paid for the amount of project output actually taken, or used, and compensates the project company for the variable costs of operation, such as the cost of input (see Section 5.3), some or all of the equity return, and variable maintenance costs.
- *Payment risk*. The credit risk associated with the offtake purchaser will be of particular concern to the project company and the lenders. Where the offtake purchaser is not a good credit risk, it may be required to provide credit enhancement such as escrow accounts, revolving bank guarantees, or state/federal/MLA guarantees for its payment obligations (see Section 5.11).
- *Foreign exchange*. Some or all of the foreign exchange or other financial risk (see Section 4.6) may be

allocated to the offtake purchaser, for example, where part of the payment obligation is indexed to foreign exchange rates.

- *Offtake infrastructure*. The offtake purchaser may be required to provide certain infrastructure, for example, to connect the project to its facilities (e.g., to the power grid or the water system). The offtake purchaser may bear any risk in connection with the operation of the project related to the transportation/transmission system or the offtake purchaser's acts or omissions.
- *Regulation*. PPP projects tend to involve heavily regulated sectors. In many cases, the sector regulator may be a new creation or otherwise unaccustomed to interfacing with the private sector. Project arrangements will need to be coordinated with the relevant regulation and regulator, realizing that generally, regulators cannot be bound by contract to perform their mandate in a specific manner, and therefore the project company may look to the grantor or the offtake purchaser to protect it if a regulator imposes requirements (e.g., performance criteria or tariff levels) different from those originally envisaged in the project contracts.

5.3 Input Supply Agreement

The PPP project may need some form of input to operate, such as fuel for thermal power generation or electricity

for water treatment. The project company may not want to bear the risk that the required input will not be available when it is needed and at an appropriate price in view of the project's revenues. Therefore, the project company will often enter into a contract with an input supplier to provide the necessary input to the extent of the project's needs or to the minimum level necessary for the project's operation.

The input supply agreement involves an input supplier contracting to provide a certain amount of input of a given quality at a given price.[2] For example, coal suppliers for a coal-fired power plant will have long-term capacity using the promised income from an input supply agreement to finance the development of new coal fields. Input may be a misnomer for certain projects where the required service is effectively an offtake arrangement. For example, in waste water treatment, the project company will need to subcontract for the removal and disposal of sludge, or in hospital projects, for the removal of medical waste. This type of agreement will require many of the

[2] The necessary input may be provided by the grantor and/or the offtake purchaser. In such cases, the input supply provisions discussed below may be incorporated in the concession agreement or the offtake purchase agreement. This section may therefore need to be read in conjunction with Sections 5.1 and 5.2.

same conditions and raise similar issues to other input supply agreements.

The key terms addressed in an input supply agreement will include the following:

- *Price*. The cost of input will include the cost of export from the source country, import into the host country, and transport to the site. The input supplier will generally be responsible for obtaining the proper permits and licences for importing the input into the host country. Any failure on the part of the input supplier to provide the amount required will result in liquidated damages[3] or a decrease in the price paid for the input delivered.
- *Quality, quantity, and timing*. The input supplier will also be allocated some of the performance risk for the project inasmuch as it is required to provide a given quantity of input at a given quality and at a given time. The input supplier will be responsible where the input is provided late or is insufficient.
- *Duration*. The length of the input supply agreement will depend on the risks associated with the specific input and the ability to use other sources of input. There may be resetting or renegotiation of the agreement scheduled to adjust with the market over time.

[3] A fixed monetary penalty, defined in the contract.

- *Transport*. The project company may need to enter into a long-term contract for transportation of the input even where the project company and the lenders are willing to take market risk on procurement of the input itself.
- *Testing and inspection*. To ensure proper operation and requisite performance levels, the input must be inspected and tested accordingly.

5.4 Construction Contract

The project company will allocate the task of designing and building the project to a construction contractor. The construction contract will define the responsibilities of the construction contractor and the project company and their relationship during the period of construction.[4]

The construction phase of the BOT project is generally governed by a turnkey construction contract, sometimes also known as a "design and build" or an EPC (engineering procurement and construction) contract. The term "turnkey" suggests that after completion, one needs only to "turn the key" to commence operation of the constructed facility. This concept is, of course,

[4] For further discussion of construction contracts, see generally Scriven, Pritchard and Delmon (1999) supra note 15 of Chapter 1.

oversimplified. Where a single turnkey construction contract is not available, the lenders will want several contracts to work together as a turnkey contract, or will want a completion guarantee from the sponsors to cover any gaps in risk allocation.

The turnkey construction contract places single-point responsibility for the design and construction of the works on one party, the construction contractor. Single-point responsibility simply means that the construction contractor is bound to provide to the project company a completed project in accordance with the contract specifications, and will be held accountable to ensure that the performance and the quality of the works comply with all of the contractual requirements, so that where there is a problem, the project company has a single point of reference. Where tax liabilities or other considerations necessitate construction under several different contracts (e.g., where combining tasks in one contract will attract a higher rate of taxation for the whole of the contract), single-point responsibility can be achieved but with some additional challenges (see Box 5.1).

Single-point responsibility will require several important obligations to be placed on the construction contractor. The construction contractor will be required to design the whole of the works, coordinate design and construction interfaces, and complete the works to

Box 5.1. Splitting Contracts

In some jurisdictions, turnkey contracts performed in that country have the unfortunate habit of increasing the tax liabilities and consequently increasing the overall cost of construction.[5] In such circumstances, the parties may wish to consider splitting the single turnkey construction contract into a number of separate construction contracts, with work performed by separate companies in the various jurisdictions.[6] This split would be implemented so as to manage the risks related to tax exposure and other costs while maintaining the "turnkey" nature of the construction arrangements.

satisfy the completion and performance targets, all in accordance with a specified contractual standard of care. Thus, where the project company wishes to make a claim concerning a defect in the works, it does not need to specify whether the defect was caused by inadequate design or faulty workmanship, because responsibility for both of these elements of the work falls on the construction contractor.

[5] For more detailed discussion of splitting turnkey contracts, see an article published in the *International Construction Law Review* in 2003, Delmon, "Splitting Up Is Hard To Do: How to Manage Fiscally Challenged Turnkey Contracts."

[6] The performance of works by branches located in different jurisdictions or subcontracted to companies in those jurisdictions will not

Other key terms addressed in a construction contract will include the following:

- *Time for completion*. In PPP projects, timely completion is essential because penalties may apply under the input supply, offtake purchase, and concession agreements for late completion; revenues will generally not be sufficient to meet debt servicing obligations until construction is completed, and the lenders will only defer payment of debt service for a specified grace period. Turnkey construction contracts are conducive to a fixed time for completion because they combine all design and construction tasks under the responsibility of one construction contractor.
- *Construction price*. Turnkey construction contracts generally use a fixed-price lump-sum structure, wherein the contractor is paid one lump sum for the design and construction of the works, with limited opportunity for price increases, so providing greater price certainty for the project company and the lenders. The use of a lump-sum price combined with payments on the completion of stages of construction (for example,

achieve the desired effect. It is the use of a single contract for these different works that tends to attract the adverse tax treatment. See also chapter 9 of Scriven, Pritchard and Delmon (1999) supra note 15 of Chapter 1.

milestone payments) can result in an increased rate of progress, because the faster the contractor finishes the construction, the faster it gets paid.[7]

- *Performance risk*. The completed facility must perform to a certain standard to achieve the revenue stream required to satisfy the debt servicing, provide a return on investment, and cover any other costs. The construction contractor will be responsible for constructing works capable of attaining the performance levels required under standard operating conditions, taking into consideration the site conditions and any other project-specific limitations. Performance tests will verify, for example, input requirements, heat rate, waste output, climate variations, lighting, accessibility, ventilation, consumption of input, temperature, and environmental impact.
- *Site conditions*. The allocation of site risk will depend on the nature of the parties and their expertise. Site conditions, such as geographical, geological, and hydrological conditions, are difficult to define with great accuracy, even after extensive site investigations. Manmade obstructions or conditions may be dealt with separately when allocating this risk because

[7] Wallace, *Construction Contracts: Principles and Policies in Tort and Contract* (1986: 331).

they are even more difficult to assess accurately by site investigations.

- *Defects liability*. For a period after completion, the construction contractor will remain responsible for the remedy of defects in the works. The period during which the construction contractor is liable for defects is generally called the defects liability period, although it may also go under the name of maintenance period or warranty period. Certain jurisdictions establish minimum defects liability periods at law.

5.5 Operation and Maintenance (O&M) Agreement

After completion of construction of the works, the project company will need to operate and maintain the project during the concession period. This function is essential to protect the revenue stream of the project (see Figure 5.2). The O&M function will involve managing the operation of the project, providing maintenance for and replacing materials and equipment, receiving and managing inputs, and developing the relationship with the offtake purchaser. In order to allocate the risks involved in O&M, the project company may contract with an O&M contractor, also known as the operator. The operation of the project will require an understanding of the local market;

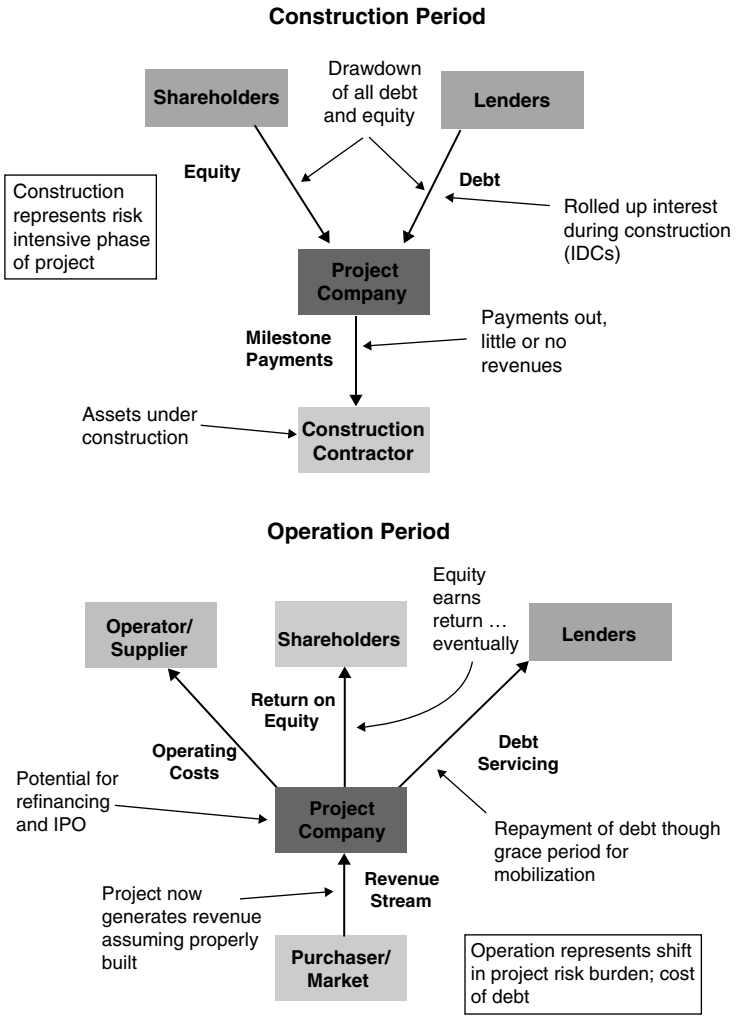

Figure 5.2. ***Financial flows in different project periods.***

the demands on operation in developing countries, such as availability of materials and labor for maintenance and repairs; and the importance of relationships with local authorities.

Risk allocation under an O&M agreement is generally not as clear-cut as under the construction contract or the input supply agreement, where a more substantial transfer of project company risk may be possible. This is often explained by the fact that the construction contractor and the input supplier provide products whereas the operator provides a service. Equally, the O&M agreement may not provide a pricing structure as fixed or certain as the construction contract, or the operator may not bear levels of liability (e.g., liquidated damages) sufficient to indemnify the project company completely. This is partly due to the long-term nature of the operator's obligations, but also to the lower profit margin earned by the operator.

The operator's obligations should mirror those set out in the concession agreement, the offtake purchase agreement, and those required to ensure continued and efficient operation of the project. The key terms addressed in an O&M agreement will include the following:

➢ *Performance risk*. The operator will be required to work to a standard of performance generally based on the

performance standard or operating requirements set out in the concession agreement, the offtake purchase agreement, the construction contractor's operation and maintenance manuals, and any other supplier instruction in order to maintain relevant warranties. The operator will deliver the proper operation and maintenance of the works to achieve the required levels of output or availability. Ideally, the level of penalties applied to the operator will match the liability of the project company for such performance failure; those levels of penalties are often too high relative to the fee paid to the operator.

- *Operating cost*. The operator may (1) provide a fixed price for operation, (2) provide variable costs but be subject to controls to ensure mitigation of cost, or (3) provide short periods (possibly three to seven years) during which the operator's fee is fixed, at which point market testing is carried out and the operator's fee is modified accordingly or a new operator is selected.
- *Public face of services*. The operator is in a very sensitive position as the operator of a public service in the host country. Therefore, the operator's methods of operation and its relationship with its employees and local communities will be critical to the project.

5.6 Lending Agreements

Financing arrangements for PPP projects follow a rough two-step progression. First, funding is provided by the lenders and the shareholders during the construction phase, which is generally considered the riskiest phase of the financing arrangements, because money is being utilized but no significant assets can be seized in the event of default. Funding during this first phase will include upfront fees, development costs, design, and construction. The lenders will advance funding progressively during the construction phase; payments are usually linked to milestones and verified by an independent expert acting for the lenders and possibly the grantor. During this first phase, the lenders will insist on a careful balance of equity and debt funding and may require recourse beyond project assets, to the shareholders or some other guarantor, to cover the risk of any delays or cost overruns, which have not otherwise been transferred to the construction contractor.

The second step is final completion of construction followed by operation. Completion of construction includes performance tests to ensure that the project is capable of earning the necessary revenue stream. Approval of final completion will release the construction contractor from certain liabilities and will therefore be carefully controlled

by the lenders. During operation, once the project has begun to produce output, the debt is serviced solely by the project revenue stream (see Figure 5.2).

The lending agreements will therefore set out protections for the lenders, such as:

- drawdown schedule and the conditions precedent that must be satisfied before each drawdown, in particular related to completion of construction milestones and aggregate paid-up equity;
- lender rights over warranties from contractors, delay-liquidated damages, performance-liquidated damages, contractor-supplied performance bonds, standby equity and debt undertakings, and other mechanisms to mitigate construction risk;
- funding and control of reserve accounts, where the project company must set aside money for contingencies, in particular to cover a number of months of debt service in the event of revenue shortfall, periodic major maintenance expenses, and annual costs like insurance and taxes;
- events of default, such as failure to satisfy ratios (DSCR, LLCR, debt:equity, etc.), late payment, defaults under project contracts, and making changes in management or project contracts without consent;
- the right for lenders to stop disbursements to the shareholders, control voting rights and other project

company discretions ("reserved discretions"), and the right to seize funds in the event things are not going as well as the lenders would like (e.g., where events of default arise or might arise).

Security rights (over different project assets and in favor of creditors) are both "offensive" and "defensive": offensive to the extent the lenders can enforce the security to dispose of assets and repay debt where the project fails; defensive to the extent that security can protect the lenders from actions of unsecured or junior creditors. If comprehensive security rights are not available, the lenders may seek to use ring-fencing covenants in an effort to restrict other liabilities, security over project company shares to allow the lenders to take over control of the company, or the creation of a special golden share that provides the lenders with control in the event of default. Security rights may also allow the lenders to take over the project rather than just sell the project assets, because the value of the project lies in its operation and not in the resale value of the assets.[8]

The lenders and the grantor may enter into direct agreements with the project participants setting out step-in

[8] Lender rights to run the project rather than just sell off the assets will require consideration of the applicable legal system and its treatment of security and insolvency. Rights over project company

rights,[9] notice requirements, cure periods,[10] and other issues intended to maintain the continuity of the project where the project company defaults and/or falls away. A project may not require direct agreements where appropriate provisions can be included in the relevant project document or where some other solution is available.

5.7 Hedging Arrangements

Some financial risks can be shared through financial instruments known as derivatives, swaps, futures contracts, or hedging. These complex arrangements, in effect, require one party to compensate the other party in the event of a specified risk, in exchange for a fee. In some cases, the parties may swap risks, each compensating the other in the event of specified risks. For example, exposure to foreign exchange risk can be mitigated by swapping currency requirements with another market

shares may achieve the desired security but may also involve the lenders taking on project risk.

[9] Where one party to a contract is in default, the right (usually of the lenders or the government) to take over that party's position in the contract, in an effort to keep the contract from termination.

[10] Where one party to a contract is in default, the right (usually of the lenders or the government) to be notified of the default and to be given the opportunity to cure that default.

participant, or by agreeing to buy one currency at a fixed price in another currency at a future date. Other risks such as interest rate and commodity risk can be managed through the use of derivatives. These arrangements are usually managed under the common terms set out in the ISDA master agreement.[11]

Hedging arrangements can have significant impacts on the project, including:

- Hedging arrangements will influence the cost of debt and the breakage costs to be included in termination compensation. Therefore, hedging counterparties (and the hedging bank) should be selected competitively to keep these costs down.
- Hedging arrangements may have significant breakage penalties, which may make prepayment of or modifying financing arrangements more expensive.
- Hedge counterparties, or possibly a hedging bank, will be a party to the intercreditor agreement to formalize the sharing of security and arrangements on default (see Section 5.8).
- To the extent hedge counterparties benefit from project security, in theory, their hedges should also be limited recourse.

[11] ISDA is the International Swaps and Derivatives Association; see http://www.isda.org

- If hedge counterparties get paid out if they suffer a loss when they close out their hedge, then lenders will argue that they should share any windfall profits.

5.8 Intercreditor Arrangements

Financing for the project is likely to come from several sources, such as commercial banks, multilateral organizations, international financial organizations, and possibly the capital markets, including different levels and classes of debt and equity. An intercreditor agreement will often be entered into by the lenders in order to address key issues,[12] such as:

- order of drawdown of funds;
- coordinating maturity of loans;
- order of allocation of debt service payments;
- subordination;
- holding and acting on security rights and exercise of discretions;
- voting on decisions such as variations of lending agreements, waiver of requirements, acceleration,

[12] For more detailed discussion of intercreditor agreements, see Wood, *Project Finance, Securitisations and Subordinated Debt* (2nd ed., 2007).

enforcement of security, and termination of hedging arrangements.

Security and other rights tend to be managed through trustee arrangements, with one of the lenders or a third party acting as agent for the lender group, holding and acting on security rights.

5.9 Insurance Arrangements

Although the project participants may each provide insurance for the project, it is generally more efficient for the project company to provide or ensure provision of comprehensive insurance coverage for the entire project. In this way, the interfaces between different insurance packages, the coverage provided by different insurance providers, and the overlapping of the tasks performed by the various project participants will not result in overlapping insurance or gaps in insurance coverage.

Generally, the following insurances will be required:[13]

- insurance of materials and equipment during transportation to the site, including equipment to be integrated into the works, temporary plant and the

[13] Delmon (2009) supra note 5 of Chapter 4, section 15.5.

construction contractor's equipment, from the place of manufacture to delivery at the site;

- ➢ construction all risk (CAR) or construction and erection all risk (CEAR) insurance will cover all operations and assets on the site during construction;
- ➢ professional indemnity (PI) insurance for design faults or other such professional services provided by the construction contractor or its designers;
- ➢ all risk operational damage insurance, including, in particular, insurance of property damage during operations;
- ➢ third-party liability insurance for any claim by third parties for the acts or omissions of the project company and any of the contractors, subcontractors, or other persons for whom it may be responsible;
- ➢ consequential loss insurance, including delayed start-up, advance loss of profit, and business interruption insurance;
- ➢ mechanical or electrical failure not otherwise covered under the operational policy;
- ➢ automobile liability insurance for all vehicles to be used on site, which will often be mandatory under local law;
- ➢ workers' compensation/employer's liability insurance;
- ➢ directors' and officers' liability insurance.

The grantor will indicate in the concession and/or offtake purchase agreement the insurances it expects the project company to maintain, and to ensure that:

- there is sufficient coverage obtained and maintained;
- the grantor is coinsured (not joint-insured), and that there is no risk of vitiation[14];
- the insurer waives its subrogation rights[15];
- where insurance payments relate to damage to assets that are part of the project, those monies are used to fix the damage or replace the assets, and are not otherwise captured by the lenders or other creditors.

Required insurance may become too costly or unavailable. The parties will need to agree how to manage risks that become "uninsurable" and how to define this term. For certain risks, and in certain markets, the grantor may agree to be the insurer of last resort, effectively

[14] Where the project insurance involves several insured parties (with varying interests in the insured risk) under the same insurance policy, and the insurance policy becomes unenforceable (with all of the insured parties losing their coverage) due to a breach by one of the insureds of its obligations under the policy (in particular the obligation to disclose relevant information to the insurer).

[15] The right of an insurer to take over the rights in action (i.e., right to sue) of its insured, to recover the amount it paid out to the insured.

stepping in to insure risk in exchange for the payment of the premium last paid when the insurance became "uninsurable," or some other agreed rate. However, the grantor will want to be sure that the increased cost is not due to project company failure or actions.

Applicable law may require insurance to be obtained locally, in which case the project company may seek to reinsure those risks internationally to obtain additional insurance protection. Local law may limit the extent to which reinsurance can be used. Lenders will likely seek cut-through arrangements with reinsurers to allow direct payment from reinsurers to the project company and or to the lenders.

5.10 Guarantee and Credit Enhancement Arrangements

A third party (e.g., the government, a BLA, or an MLA) may provide some form of credit enhancement to reduce the cost of debt or make investments available. This enhancement may be provided to lenders and/or equity investors, compensating them in certain circumstances or ensuring that a certain portion of their debt service or equity return will be protected. Rating agencies may be consulted when structuring the project to maximize the credit rating for the project (in particular when bond financing is

involved), and credit enhancement can result in much higher credit ratings and therefore lower cost of debt (in particular where the credit enhancement brings debt above investment grade – i.e., Standard & Poor's BBB-).

Credit enhancement can include:

- ➢ funding/supporting direct payments or grants;
- ➢ providing financing for the project in the form of loans or equity investment;
- ➢ providing guarantees, including guarantees of debt, exchange rates, convertibility of the local currency, offtake purchaser obligations, other supplier obligations, tariff collection, the level of tariffs permitted, the level of demand for services and/or termination compensation, and so on;
- ➢ providing an indemnity, for example, the one against failure to pay by state entities;
- ➢ providing tariff subsidies for consumers from whom the project company would have difficulty in collecting debts due,
- ➢ waiving fees, costs, and other payments that would otherwise have to be paid by the project company to a public sector entity (e.g., authorizing tax holidays or a waiver of tax liability);
- ➢ funding shadow tariffs and topping up tariffs to be paid by some or all consumers;

- ➢ providing capital assets or other direct, in-kind investment.

Credit enhancement providers will usually perform their own due diligence on the project, with associated time and cost implications. Providers of credit enhancement may also look for government or other counterguarantees or security rights, in particular to mitigate the moral hazard of credit enhancement protecting a defaulting party with the perverse incentive for that party to default. Credit enhancement may therefore involve a counterguarantee from the party whose obligation is being supported.

5.11 Sponsor Support

The lenders may want access to non-project assets to protect their interests in cases where the project does not provide sufficient protection to the lenders. So-called sponsor or shareholder support provides the lenders with a guarantee or undertaking from the shareholders (which may need to be supported by bank guarantee, parent company guarantee, or otherwise), giving the lenders further security or comfort that the shareholders are committed to the project. Sponsor support may include standby subordinated financing for construction cost

overruns, guarantees of borrower warranties (in particular those within the control of shareholders), indemnities against environmental hazards, guarantees of cost of materials, or demand for project offtake. The shareholders, however, have entered into a project financing to benefit from limited liability and limited recourse. They will not want to provide further support or increase their liability for the project.

5.12 Shareholding Arrangements

The shareholders' agreement governs the relationship between the shareholders within the project company. The shareholders' agreement may involve several documents – for example, a development agreement for the pre-financial close phase, and for post-financial close a joint venture agreement and articles of association or incorporation or whatever constitutional documents exist for the project company as well as shareholder loans, standby credit, standby equity, and other similar documentation. The shareholders' agreement will cover topics such as the allocation of development costs, the scope of business of the project company, conditions precedent to its creation, the issue of new shares, the transfer of shares, the allocation of project costs, and the

management of the project company including decision-making and voting. Such an agreement will often also include a noncompetition clause, providing that the shareholders may not enter into activities directly or indirectly in competition with the project company.

5.13 Other Key Contractual Issues

5.13.1 Dispute Resolution

Large infrastructure projects are ripe for complex and often debilitating disputes and often involve parties from a variety of legal, social, and cultural backgrounds. Failure to address such disputes early can have a devastating impact on a PPP project, and therefore sophisticated dispute resolution mechanisms are generally adopted.

Identifying a national court capable of meeting the needs of such a diverse collection of parties, and acceptable to each of these parties, may be difficult. It is for this reason that parties to a PPP project generally prefer to submit any disputes that may arise to arbitration, because of its flexibility and greater ease of award execution,[16]

[16] Execution of arbitral awards is supported by a number of international treaties and conventions, in particular The United Nations Convention on the Enforcement of Arbitral Awards (1958) (the "New York Convention").

rather than to state courts. The parties may choose to enter into joinder[17] arrangements under which one or a number of linked arbitration processes are resolved jointly to ensure that disputes that impact on multiple project parties will be resolved in a consistent and coordinated manner.

The parties may wish to refer disputes in the first instance to less formal dispute resolution mechanisms, such as an expert (a fact-finder) or a mediator (a negotiation facilitator).

Sovereign entities have certain immunities before their own and foreign courts. The immunities most commonly attributed to sovereigns by national courts are jurisdiction and execution,[18] which can generally be waived or limited at law.

[17] Arbitration is a private dispute resolution mechanism where the parties agree to an arbitrator and rules that reflect the complex, commercial nature of the dispute and generally results in a faster and more responsive resolution than what national courts provide. However, arbitrators are limited to the mandate given them, such that even if two disputes should be resolved jointly, the arbitrator may not do so unless the parties agree to joinder.

[18] *Maryan, "Negotiating with the Monarch; Special Problems When the Sovereign Is Your Partner," Project Financing in Emerging Markets* (1996); *Successful Development of Power, Mining, Oil and Gas, Telecommunications and Transportation Projects* (1996: 117, 122).

Independent engineers are often hired to oversee construction and operation, attend testing, and possibly issue certain certificates. These certificates are generally used as the basis for drawdowns or satisfying concession agreement milestones. The independent engineer can also play a dispute resolution role, in particular where issues arise requiring immediate resolution through technical assessment. The independent engineer may be appointed jointly by the grantor, project company, and lenders.

5.13.2 *Force Majeure*

Certain events beyond the control of the parties may inhibit the parties from fulfilling their duties and obligations under the project agreements – for example, extremely bad weather, earthquakes, or acts of war. Given the extreme and unforeseeable nature of these events, the parties will prefer to avoid immediate termination of the contract and instead provide some excuse of contractual obligations that have been so inhibited. Each legal system will define *force majeure* events differently. To avoid the potential vagaries and uncertainties as well as the delays involved under applicable law, contracts often provide for a specific regime for *force majeure*, along with a definition of events that qualify for special treatment. The parties will generally provide in the *force majeure* provision a list, which may or may not be exhaustive,

of examples of *force majeure* events. *Force majeure* events generally can be divided into two basic groups: natural events and political events. The party prevented from performing by a *force majeure* event is generally excused from the resultant breach for a certain period of time – for example, a maximum of six months – but is not compensated (insurance may be available for these costs), and after those six months, one or both parties may decide the contract needs to be terminated.

5.13.3 Choice of Law

The governing law of a contract will, to some extent, define the obligations of the parties and provide the basis for interpretation of the intent of the parties as expressed in the contract. The project documents may be subject to the influence of different legal systems. Each contract will normally include a choice of law clause, and parties will want to apply a legal system with which they are comfortable and whose laws and contractual implied terms support that party's intentions. Having the project documents subject to more than one legal system increases the likelihood that gaps will appear in back-to-back risk allocation. However, the commercial reality is that mismatches in a choice of law will often occur and need to be managed accordingly.

— ✤ CHAPTER SIX ✤ —

Project Implementation

Managing the PPP agreement starts at the inception phase of the PPP project cycle with designing appropriate solutions and managing input from different advisers. It continues through the selection of the investors and then during implementation of the project. After the exuberance of financial close, the real work begins. This is a critical point, one often ignored by policy makers, to their detriment.

After procurement, the government must manage the development phase, transitioning the project toward delivery of services. This involves:

- establishing the government management team;
- approving construction arrangements, design, and detailed design;
- establishing performance monitoring systems;
- arranging asset, property, and staff transfers;

Key Messages for Policy Makers

- ✓ *Put in place the right grantor team*. The project will not manage itself; failure to assign a sufficiently expert team to manage project implementation (i.e., after financial close), with necessary funding, can turn the best project into a failure.
- ✓ *Prepare for the future*. Decide up front what happens later in the project; deferred decisions only become more expensive and contentious. Decisions to make changes need to be made in advance; such decisions later in the process, during implementation, can be expensive and time-consuming.
- ✓ *Be flexible and prepare for conflict resolution*. No contract can contemplate every eventuality, so plan to resolve challenges collaboratively – in other words, a PPP should be managed like a partnership.

- ➢ monitoring and assisting with applications by the project company for approvals and permissions;
- ➢ monitoring and managing subsidy payments (including triggers for payments) and government liabilities;
- ➢ approving construction completion and commencement of operations;
- ➢ establishing the mechanism for periodic review of end-user requirements.

The development phase ends once key capital expenditure has been completed and approved. It is followed by the delivery phase (construction and operation), during which the government:

- establishes its internal protocols to manage the project, monitor project company compliance with its obligations, and ensure grantor compliance with its obligations;
- conducts regular project review meetings;
- audits and reports to relevant bodies on payments, performance, and achievements;
- monitors the financial viability of the project, including the financial management of payments made and to be made, liabilities incurred, potential future liabilities, and sufficiency of project funding;
- encourages early anticipation, identification, and resolution of disputes.

Figure 6.1 sets out a number of the key contract management functions.

Each of the issues discussed below needs to be considered by the government before starting procurement, to ensure they are in place, established by contract and/or by law, and properly resourced from the very beginning of project implementation.

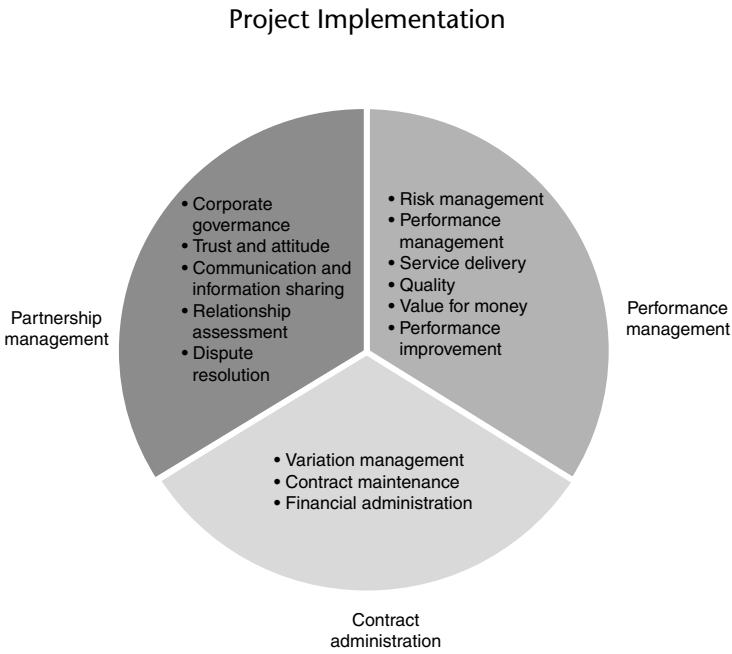

Figure 6.1. ***Management functions.***
Source: **www.ppp.rsa.gov**

6.1 Operation Manual

PPP implementation is a complex process and essential for project success. The operation manual will provide guidance on every aspect of this process, including standard form documentation, model process schedules, and other practical assistance for project implementation. The government can use the advisers it appoints

to help procure the project to help it prepare for the government role of managing the project – for example, the government may want the transaction advisers to provide:

- a project manual with summary of documents, time frame for when things must be done, and so on;
- a risk matrix and management plan addressing each risk and how it is to be allocated, monitored, mitigated, and managed. Ownership of each risk should be clearly identified on a risk matrix, setting out a clear mitigation strategy.

6.2 Management Team

The government will need to form a project team with appropriate skills, focused on the transaction (the key management tasks are unlikely to be part-time jobs), and familiar with the project contracts. The team will need to include financial, legal, and technical specialists with access to external advisers. Most importantly, the team leader must inspire confidence in relevant government officials and the private markets, in particular potential investors. The government needs to allocate sufficient budgeting and funding for the team and its functions. The

pursuit of funding should not be permitted to distract the team from its key functions or from its access to external resources, including expert advisers.

Management of a PPP project is not a classic public sector management function, and therefore those establishing the project team and managing relevant budgets and staffing functions need to appreciate the nature of a PPP project and the demands to be placed on the project team. To this extent, the team leader should be sufficiently senior to enable the team to implement its role and to access support and information from other government departments/agencies, with clear lines for decision making.

6.3 Regulatory

The government may be assisted in its monitoring/management function by third parties. For example, an independent specialist may be appointed under the contract to act as the monitor of compliance with contract obligations by the parties (sometimes confusingly referred to as a regulator).[1] Equally, the sector regulator (e.g., the water sector regulator) will be monitoring the

[1] Tremolet, Shukla, and Venton, *Contracting Out Utility Regulatory Functions* (World Bank 2004).

project company's performance in any event and may agree to monitor generally the parties' compliance with their obligations under law, which may well coincide with their obligations under the relevant contracts. The difficulty with this approach is the need for the regulator to operate in accordance with its mandate, with the usual discretion given to regulators. Often, this discretion cannot be limited (or "fettered"), and therefore the regulator must comply with his legal mandate first and the contractual role as a secondary function. The parties will need to manage the risk that the duties enforced by the sector regulator are not inconsistent with the parties' obligations under the contracts. The regulator's requirements are likely to change over time, and the grantor is likely to bear the risk of any such changes.

6.4 Refinancing

After completion of construction, once construction risk in the project has been significantly reduced, the project company will generally look to refinance project debt at a lower cost and on better terms, given the lower risk premium. In developed financial markets, the capital markets are often used as a refinancing tool after

completion of the project, since bondholders prefer not to bear project completion risk but are often able to provide fixed-rate debt at a longer tenor and lower margin than commercial banks.

This refinancing process can significantly increase equity return, with the excess debt margin released and the resultant leverage effect. Wishing to incentivize the project company to pursue improved financial engineering, in particular through refinancing, the grantor will want to share in the project company's refinancing gains (for example in the form of a 50–50 split), and may or may not want the right to insist on refinancing when desirable. The grantor's project management team will need to have the resources and skills to manage refinancing issues.

Refinancing may be essential – for example, when the project can only access short- to medium-term debt (say 5–7 years) and project revenues are insufficient to repay the debt during this period, the project company may arrange to repay much of the debt principal in a bullet payment at the end of the debt term. This bullet payment will need to be financed. The risk of the inability to finance the bullet payment will need to be managed, for example, with standby debt or equity from the shareholders, the government, or a third party like a bank, MLA, or BLA.

6.5 Renegotiations

PPP projects have the characteristics propitious to recurrent renegotiations; they represent long-term, complex commercial and financial arrangements, in heavily regulated sectors, subject to significant political sensitivities, vulnerable to changes in circumstances, and often grounded in uncertainty (e.g., the condition of existing assets, lack of information on business data, and ground conditions). Recent data suggests that some 75 percent of transport PPP contracts and 87 percent of water and sanitation PPP contracts are renegotiated at some point.[2]

Renegotiation is often perceived as failure, as a fundamental flaw in the project or in PPP generally. This perception arises in particular from poorly managed or implemented renegotiation processes that:

- can result in reductions in revenue flows and service standards (those most likely to be affected by such

[2] Straub, Laffont, and Guasch, *Infrastructure Concessions in Latin America: Government-led Renegotiations* (2005). PPP database (preliminary figures): as for 2003, 34 percent of contracts (by investment amounts) in the water sector were classified as distressed and 12 percent were cancelled; in transport, 15 percent were distressed and 9 percent cancelled, whereas in energy, 12 percent were distressed and 3 percent cancelled. See http://ppp.worldbank.org

reductions in services and increases in costs are the poorest households);
- ➢ often lack transparency and are particularly vulnerable to corrupt practices;
- ➢ can create a public and governmental backlash against private sector involvement in other projects or other sectors, reducing the scope of possible tools that the government will have available to it for improving and reforming its infrastructure services.

However, this generalized perception of failure is erroneous. There is no doubt that renegotiation is a difficult process, but it is typical for long-term arrangements (be they PPP contracts, commercial partnerships, or marriages) to face change or conflict and need adjustment to address new information and circumstances. Renegotiation is a natural part of most projects and can be a healthy opportunity to adjust the terms of a project to address the needs of the project (and the public) and actual circumstances encountered by the parties to the benefit of the parties and the intended beneficiaries of the project. It allows the parties to respond to unanticipated events and changes. To the extent it would be more beneficial for the PPP contract to be terminated, the renegotiation process can help facilitate the transition process and help reduce the cost of termination and the stress involved. PPP projects

must therefore be designed to address change and conflict quickly and effectively, and to facilitate renegotiation in a balanced manner in accordance with the spirit of the project.[3]

Key Messages for Policy Makers

- ✓ *Renegotiation is an opportunity* and can provide the parties and all stakeholders with the opportunity to improve the PPP arrangements and protect the most vulnerable.
- ✓ *Be proactive*. Establish mechanisms intended to catch disputes as early as possible. Early in the process, options are varied, relative cost is low, and the likelihood of immediate value-added resolution is higher.
- ✓ *Facilitation can help*. Softer processes are designed to use and develop relationships as the basis for finding mutually satisfactory solutions and can work better than more formal processes.

6.6 Expiry, Termination, and Handover

After delivery, whether the project is terminated early or expires in accordance with expectations, the government

[3] Delmon and Phillips, *Renegotiation of Private Participation in Infrastructure and the World Bank* (World Bank, 2007).

will need to manage the exit phase – for example, the government team will need to:

- ➢ evaluate exit options;
- ➢ manage termination/handover, including exit strategies updated from time to time to allow management of unexpected termination or to provide the government with a clear understanding of their position in the project;
- ➢ review PPP agreement termination/expiry conditions to advise the government how to proceed in the event of a default or toward the end of the project;
- ➢ identify relevant assets and other things that need to be transferred and assess their value;
- ➢ procure a replacement project company;
- ➢ monitor the transfer of assets, staff, and the business generally to the government or an appointed entity.

— ✤ CHAPTER SEVEN ✤ —

Specific Characteristics of PPP in Different Sectors

Chapters 3 through 6 describe how financing, risk allocation, and implementation under the project contracts usually work in a PPP project. This chapter sets out some of the specific requirements of four different sectors: transportation, telecommunications, power, and water and sanitation. It does not attempt to provide detail, nor will it discuss all issues in all subsectors, but is specifically focused on the characteristics for each sector that will influence the approach to PPP most appropriate to each.

Key Messages for Policy Makers

✓ *PPP is not one-size-fits-all*. Each sector needs specific consideration and possibly a bespoke PPP solution; adapt the structure to the context.

7.1 Transportation

Transportation projects, including airports, roads, railways, light rail, buses, tunnels, and bridges, have traditionally been financed by a combination of private and public funding. Governments are increasingly looking to the private sector for input in the development of new transportation schemes and the privatization of those already in existence. The transportation sector is characterized by its two critical constraints: demand forecasting and land. Demand for transportation infrastructure is influenced by competing modes of transportation, demographic shifts, economic conditions, the cost of the facilities to end users, convenience, individual preference, speed, and a number of other, often interrelated factors that make accurate demand forecasting difficult at best. The need for access to large amounts of land and space to build transportation facilities makes them expensive, long-term, and politically sensitive undertakings. Public reaction to new transport facilities can be challenging – witness the difficulty encountered in expanding London's Heathrow airport; no one wants a railway line or new road running through their backyard. For many projects, rail in particular, the high cost of land and construction cannot be met by a level of affordable,

politically acceptable tariffs. Many transport projects require specific and significant government support.

Transport projects raise the following specific issues:

- *Land acquisition*. The government will generally be involved in expropriation or procurement of land and its provision to the project company. The time required to complete the procurement of the necessary land will depend largely on the local legal system, the extent of consultation, and legal challenge available.
- *Traffic (ridership) risk*. Offtake purchasers in a transportation project are generally individuals, therefore demand risk in these projects is difficult to quantify and harder to allocate.
  - Where the project company takes traffic risk, the toll regime for a transportation project should be based on reliable economic, technical, and financial assumptions. Lenders will generally undertake their own traffic forecasting exercises to verify those provided by the grantor and the project company. The inherent vulnerability of traffic forecasts to optimism bias was demonstrated in a Standard & Poor's study[1] from 2002 of traffic

[1] Standard & Poor (2002).

forecasts in user fee-based toll road schemes. Of the thirty-two different projects, actual traffic was, on average, only 70 percent of that forecast, with a large majority of projects not reaching even 90 percent of the forecast traffic. Governments therefore often provide revenue or traffic guarantees to protect the project company and/or the lenders from a certain portion of traffic risk.

- In many countries, where charging tolls is deemed politically unacceptable, shadow tolls may be a viable option (whereby the project company is paid a fee for each vehicle or passenger that uses the system, but no tolls are collected) and can allow a certain part of traffic risk to be borne by the project company.
- The project company revenue stream may be provided through availability payments made by the grantor to compensate it for making the road available to users. A performance penalty regime will deduct amounts from such payments for defects in the road or the services provided by the project company, such as major maintenance, signage, safety, and aesthetics. The penalty regime and the key performance indicators (KPI) are even more important in an availability payment regime than under a user fee-based system

because the commercial incentives associated with increasing traffic to earn more profit may be lost and will need to be replicated through KPIs. Tolls might or might not be charged, and the project company might keep the toll revenues as a charge against the availability payment due, or it might pay over toll revenues to the grantor.

- *Capital subsidies*. Transportation projects often involve quite significant capital costs that may exceed the appetite of the private sector finance market or the revenue potential of the project while keeping tariffs affordable, and therefore government support may be essential to the financial viability of the project.
- *Regulation risk*. Given the various safety risks, transportation is a highly regulated industry. Any construction or improvements will need to comply with regulatory restrictions and may need regulatory approval. These regulatory matters will influence the timetable for project implementation and should be anticipated at the beginning of the process. Although often not as politically sensitive as the power or water and sanitation sectors, tariff levels in transport are generally regulated to ensure a balance between affordability and cash generation for capital investment.
- *Associated commercial opportunities*. The grantor and the shareholders may need to allow the project

company sufficient flexibility in the businesses it can undertake. In most other PPP projects, the grantor and the lenders limit the scope of the business that can be performed by the project company. In the case of transportation projects, the grantor may be best served by broadening the project company's scope of work in order to improve project revenues and reduce the need for government support. For example, airport projects involve a multiplicity of commercial arrangements – for example, terminal facilities, fueling facilities, cargo warehouses and handling, catering, parking, hotels, office space and commercial businesses, and of course property development may be a valuable associated commercial opportunity for roads, ports, airports, rail, and most transport projects.

7.2 Telecommunications and Fiber Optic Backbone

Another traditional public sector service increasingly offered by the private sector is telecommunications. Increased demand and rapidly changing technology have exceeded the funding and commercial acuity available from the public sector – the monopolistic public utilities that traditionally dominated the sector. Some

technologies, in particular mobile telephony, have created completely new markets. Together with power and transportation, telecommunications is one of the primary growth areas in PPP projects in developing countries.

Whereas growth and investment in mobile and fixed telephony has been impressive over the last ten years, in particular in private investment in mobile telephony, public involvement has been limited primarily to issuing of licenses. For this reason, these aspects of the sector will not be discussed here in any detail. Instead, this section will focus on PPP projects for fiber optic backbone.

One of the key requirements in the telecommunications sector is the capacity to transmit the maximum amount of data and/or voice traffic to market-quality standards as quickly and inexpensively as possible. Governments have sought to increase connectivity of their populations to access the associated commercial and educational opportunities and encourage economic growth. India is an excellent example of this, with major investments in fiber optic connectivity to certain key cities, like Chennai and Bangalore. The explosive growth in these cities of outsourcing and other commercial activities requiring access to large bandwidth seems to validate the investments arranged by the Indian government. One of the best ways of achieving significant increases in telecommunications connectivity is the installation of fiber optic cables.

A number of fiber optic backbone systems have been developed using PPP structures. The project company lays the fiber optic cables to link key demand centers and sells access to various telecommunications operators and internet service providers (ISPs). Fiber optic backbone projects raise the following specific issues:

- *Vendor finance*. This is an additional source of financing provided by suppliers of equipment as an incentive for the project company to procure from them. Vendor finance can create problems where the financiers and/or vendors face financial troubles. It can also be difficult to compare bids where each is supported by a different vendor financing package.
- *Technology upgrades*. Telecommunications involves rapid change, with new technology being produced and a need to interconnect, in certain cases, with other providers or with public infrastructure. The grantor will need to consider how it will manage upgrades of technology and to what extent it will allow the project company discretion in how it implements such upgrades.
- *Operation*. The project company will need to monitor the operation of the network and move information through the network in the manner most efficient for consumers. This is normally performed automatically

by specialist software. The project company will need to be in a position to remedy any defect or replace any faulty equipment as quickly as possible.

➢ *Access to land*. Where these fiber optic cables are laid on land, property rights must be obtained, trenches must be dug, and ducts installed in order to house the fiber optic cable. Access to land for installation and maintenance of cable and equipment can involve specific challenges, in particular in countries where telecommunications licenses do not provide specific rights to access land for such installation. Where the cable is to be laid under the sea, that cable must be armored and laid properly in order to protect it from ship anchors and other hazards. Landing sites may also be strictly regulated, in particular in relation to shipping movements, environmental risks, and tourism.

7.3 Power Generation

The power sector is characterized by unique constraints in the delivery of electricity to public, commercial, and residential consumers.[2] Electricity is relatively easy to transmit over long distances but very hard to store, so it

[2] For a good general review of the power sector, in particular its regulation, see Hunt, *Making Competition Work in Electricity* (2002).

must be generated constantly and responsively to meet demand in its daily and seasonal variations. Base load generating capacity will address the constant demand over time, with peaking capacity available where demand exceeds this level. Mid-range generation capacity will provide a combination of these two. Power generation is often fuel intensive and requires careful management of fuel supply and transport, with the associated environmental and commodity pricing risks.

The ease of transmission makes it possible to create competitive markets, at least around generation and distribution. Competition in transmission can be more difficult given the practical and price implications of duplicated transmission networks. However, common carriage arrangements are feasible and increasingly successfully implemented.

PPP for retail delivery of electricity to industrial and domestic consumers faces many of the same challenges as water and sanitation, with a similar need to improve efficiency and profitability in order to fund capital replacement and extension. Further, electricity tariffs are often used (officially or unofficially) to subsidize certain sectors of society – for example, agriculture. For consideration of issues associated with the PPP retail delivery of electricity, please refer to Section 7.4 on water and sanitation distribution.

Power generation has been one of the greatest beneficiaries of private investment through PPP and project financing structures. The offtake purchaser in a power generation project, and often other PPP power projects such as transmission, is called a power purchaser and will enter into a power purchase agreement (PPA). The power purchaser is generally the local power utility. The project company is also known as an independent power producer (IPP). The following are issues specific to IPPs:

➢ *Credit risk*. The project company will need to consider the commercial viability of the power purchaser, considering issues such as:
  - What entity currently has the rights to charge a fee (rate) for electricity services?
  - What entity owns the revenues collected?
  - Are the revenues currently deposited in accounts controlled by the power purchaser?
  - Are there any specific rules/laws with respect to the disposition of the revenues?
  - Who has the right to set tariffs for electricity services?
  - Are tariffs currently set at a cost-recovery level? If costs exceed revenues in any particular year, what entity is responsible for covering the shortfall? Will tariffs be adjusted accordingly?

- Is there a right to disconnect customers for non-payment, and who has this right?

➢ *Associated infrastructure*. The ability to test and operate power generation and transmission systems is generally dependant on the reliability of associated electricity infrastructure. For example, the power purchaser may be responsible for providing transmission facilities to connect the project to the electricity grid from the site substation. The project company will want to assess the condition of the grid, including load balance in the area (ensuring that generation in different parts of the electricity grid are appropriately balanced), likelihood of grid failure, and risk allocation to protect the revenue stream from any likely defect in the grid and in the power purchaser's ability to offtake electricity.

➢ *Merchant plants*. The project company may be able to manage offtake risk where it is able to sell the energy it generates into a competitive electricity distribution market, rather than against a long-term offtake purchase agreement that will guarantee a revenue stream – therefore a merchant power plant will have no PPA.

➢ *Tolling arrangements*. Under a tolling arrangement, the power purchaser delivers fuel to the project company and pays the project company for turning that fuel

into electricity. The tolling arrangement therefore treats the generation project as if it were a process plant: The sponsor of the generation project provides the fuel and buys the electricity generated – in effect, it pays for the processing of fuel into electricity, assuming a certain level of efficiency.

➢ *Other offtake*. Power projects may generate other offtake. The project company may therefore want to enter into a second offtake agreement to allocate the market risk for the sale of the secondary offtake. For example, a hydroelectric project may also provide a reservoir for raw water that can be used for irrigation or treated and used as potable water. Many water-poor coastal countries use desalination to make up for their water deficit. Desalination uses large amounts of electricity, so combined power generation and desalination plants, also known as independent water and power producers (IWPP), are popular mixed offtake plants. A combined heat and power (CHP) plant provides for the sale of the heat generated while producing power, and co-generation plants allow the purchase of steam bled from the steam turbine during certain hours of operation.[3]

[3] Vinter, "Legal Issues Involved in Co-Generation Projects," in Hornbrook (ed), *Project Finance Yearbook 1995/96* (1996: 15, 32).

➢ *Fuel supply*. IPPs can involve a number of different fuel sources. Classic thermal fuels such as coal and gas require specific arrangements for fuel transport and long-term access to fuel supplies. Power generators can use certain technology to reduce greenhouse gas emissions, such as pressurized, fluidized bed combustion, integrated gasification combined cycle generation, and carbon capture and storage for coal fired power plants.[4] Other fuels, such as nuclear, require specific management, whereas hydro, wind, geothermal, and solar require careful forecasts of resource availability and risk allocation. The government may also provide incentives to the project company or the grantor to encourage the use of renewable energy or lower emissions, for example:
  - tax or license fees set against clean energy targets;
  - higher feed-in tariffs for clean energy generators;
  - access to concessional financing;
  - tradable certificates associated with carbon neutrality of certain activities such as carbon credits.

The project company will need to be able to rely on any government incentives because these tend to change over time with political appetite.

[4] Enkrist, Naucler and Rosander, "A cost curve for greenhouse gas reduction," *The McKinsey Quarterly*, Number 1, 2007.

7.4 Retail Distribution of Water and Sanitation Services

Water distribution is characterized by the high cost of transporting water (with associated health and safety issues), relative ease of storage, and significant social and political sensitivity. The high cost of transportation makes the creation of a competitive market for water and sanitation services particularly challenging. This heavily regulated sector is also one of the oldest, with key water and sanitation assets often old and buried, making it difficult to know their condition and to forecast investment needed in such assets without time-consuming and costly investigations.

Water and sanitation are public services, with specific impact on the environment and quality of life, and therefore pricing has political, health, and environmental implications. Service distribution is therefore generally heavily regulated. This combined with government efforts to keep service prices down can have disastrous consequences for the sector. PPP has a long and complex relationship with water and sanitation.[5] Whereas the greatest benefits can be obtained from PPP in water distribution

[5] *Public Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries* (World Bank, December 2008).

and sanitation collection,[6] these are also the most difficult areas to achieve a satisfactory commercial and financial structure.[7] Unlike treatment, distribution is often a more challenging fit with the PPP model given the need to identify and allocate a more complex and extensive series of risks.[8] Whereas this section will address issues specific to the retail delivery of water and sanitation services, very similar issues will need to be addressed when considering the retail distribution of electricity. Similarly, for those interested in the issues specific to water and sanitation treatment through PPP, reference should be made to the discussion of power generation BOT in Section 6.3.

➢ *Service delivery models*. Current theories of managing distribution include three principal models of PPP.[9]
(i) The "Dutch model" – corporatization of a public company, creating a private business owned by

[6] Andres, Foster, Guasch, and Haven, *The Impact of Private Sector Participation in Infrastructure: Lights, Shadows, and the Road Ahead* (World Bank 2009); Gassner, Popov and Pushak (2007) supra note 11 of Chapter 1.

[7] Delmon, *Water Projects: A Commercial and Contractual Guide* (2000).

[8] Gassner, Popov and Pushak (2007) supra note 11 of Chapter 1.

[9] Eric Gutierrez, "Framework document for a survey for the theoretical issues on private sector participation in water and sanitation", Water Aid, July 2001.

the public sector. The profit-orientated public limited company creates a compromise between a purely private company that operates on a commercial basis (possibly under a contract) and the shareholding governmental entities that tend to operate on a more political basis.

(ii) The "French model" – delegated private management where the government is generally responsible for assets whereas the private sector provides more or less comprehensive management services that may include concession agreements, affermages, service contracts, and management contracts.

(iii) The "British model" – large-scale full divestiture, what is often referred to as privatization. It involves the private sector owning the companies as a going venture, including all assets and land – the public utilities themselves become private corporations, with an emphasis on regulation to maintain public sector oversight and support. In parallel, Scotland maintains the private finance initiative (PFI) model, where the water utility remains public, but specific ring-fenced services, such as water treatment or waste water treatment, are outsourced to the private sector through PPP arrangements.

It should be noted that approaches can be mixed and matched as is most appropriate to the needs of the sector, and no matter what approach to PPP is chosen, the service provision will need to be regulated in order to ensure proper quality of services delivered and fair pricing.

➢ *Regulation*. Water utilities tend to be natural monopolies. The transportation of water is generally too expensive and the infrastructure too difficult and costly to duplicate to permit much competition between suppliers. Whereas electricity is more easily divided between generation, transmission, and distribution, these sophisticated competitive markets are difficult to achieve and manage. To protect consumers and ensure that the project is operated to a standard consistent with modern industry practice, the grantor will want to establish a progressive and reasonable regulatory structure (including economic and technical regulation), giving the regulator sufficient latitude to supervise the activities of the project company without unreasonably restricting competitiveness or the ability of the project company to operate or finance its activities within the context of the market. Creating a regulatory structure can involve a substantial investment of resources by the grantor or the government.

- *Billing and collection*. In distribution projects where the revenue stream comes from tariffs charged by the project company directly to consumers, the risk of collection shortfalls must be allocated. Where the project company is to bear this risk, the project company will need to have the right to collect tariffs directly from consumers and to impose sanctions on consumers for failure to pay tariffs. For example, it will be difficult for a private sector project company to confront a government agency (for example, the Ministry of Defense or the Police Department) and demand payment for bills. It is generally easier to disconnect electricity than water, and therefore pooled water and electricity billing has proven effective to improve bill payment.
- *Exclusivity*. Where the project company's revenue source is to be generated from the tariffs collected from consumers in a given area, or where the rate of use of services consumed dictates a part of the payment stream, the project company may seek an exclusive mandate to provide the services within that area. This may be difficult for the grantor to accept where it wishes to cultivate competition and create as realistic a free market as possible.
- *Metering*. It may be important for the grantor to impose metering and measurement requirements on

the project company in order to monitor the services rendered. The grantor may therefore require a capital expenditure regime by which meters are provided. Metering and measurement will also help the grantor identify performance requirements which can be imposed on the project company – for example, standards for unaccounted-for water.

- *Asset condition*. The grantor will usually transfer ownership or use of existing assets to the project company for the purpose of performance of the project company's obligations. These assets may not be identified and categorized before the project company takes over control. Further, the condition of those assets and need for replacement or refurbishment may not be clear until well into the management arrangements. The condition of existing assets represents a serious risk for the project company and one which it will be difficult to pass on to any construction contractor or operator.
- *Existing business*. Unlike BOT projects, management arrangements generally involve an existing business, which may be taken over by the project company (another option is to transfer the assets of the company only, the liabilities of the company remaining with the government). Often, the personnel of the existing water company will be transferred to the

project company in order to provide training and continuity and to satisfy the requirements of public sector labor unions, which are generally hostile to any form of PPP that might threaten their members' employment or benefits.

➢ *Tariffs*. The level at which tariffs are set for water services can be an extremely political issue. Historically, such tariffs may have been used to subsidize certain elements of society, specific industries, or public sector entities. More often, public companies are subsidized and tariffs are not charged, charged at very low rates, or not collected. Private sector involvement may necessitate formal arrangements with the project company for government subsidies or financing, particularly where the government is not willing to put tariffs up to profitable levels or where substantial investment in capital works is needed or desired.

— ✤ CHAPTER EIGHT ✤ —

Financial and Economic Crises

Economic and financial crisis of 2008–2009 had a significant impact on PPP globally. Investment in PPP declined by 48 percent in the second half of 2008 compared to the first half of that year. The first half of 2009 saw a recovery to the levels of the first half of 2008, driven by large, high-priority projects in a handful of countries. Whereas volumes appear to have recovered, there is a clear "flight to quality," with projects more likely to reach closure characterized by strong economic and financial fundamentals, the backing of financially solid sponsors, and government support, with energy reporting higher investments, telecom seeing stable investments, and transport and water receiving lower investments. Current projects evidence lower debt/equity ratios, higher cost of financing, and more conservative structures. Financing

has become increasingly focused on local state-owned banks as well as multilateral and bilateral agencies.[1]

Whereas the crisis was massive and global, some consideration of past experiences in regional crises is also useful. The Mexican crisis of 1994–1995, the Asian crisis of 1996–1997, and the Argentinean crisis of 2001, to name but a few, have had critical implications for infrastructure, in particular:

- difficulty to access, and increased cost of, debt and equity;
- reduced demand for infrastructure services (in particular from industrial users);
- reduced ability to pay and therefore less political appetite to increase tariffs;
- re-allocation of government budget funding away from project preparation;
- reduced appetite of international sponsors to take developing market risks.

These challenges tend to result in:

- the delay or cancellation of PPP projects still in the preparation stage;

[1] "Assessment of the impact of the crisis on new PPI projects – Update 4 (09/28/09)", PPI database of the World Bank, http://ppi.worldbank.org/

- difficulty obtaining financing or even failure of those PPP projects that have been awarded but not yet reached financial close;
- inability of existing PPP projects to access refinancing or to restructure to the extent that challenges arise;
- increased financial vulnerability of offtakers due to the inability to set tariffs at a cost recovery level while financing costs increase;
- failure of governments to develop new projects, resulting in a significant lag in the PPP project pipeline – with parts of Latin America and East Asia experiencing a "lost decade" of slow growth due to such lags in their infrastructure project pipelines.

The associated reduction in infrastructure investment in turn slows economic growth and fulfillment of government development strategies, such as, for example, efforts to achieve the Millennium Development Goals.[2]

[2] The Millennium Development Goals are 8 goals that 192 United Nations member-states and at least 23 international organizations have agreed to achieve by the year 2015. They include eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowerment of women, reducing child mortality, improving maternal health, combating HIV/AIDS, malaria, and other diseases, ensuring environmental sustainability, and developing a global partnership for development.

Key Messages for Policy Makers

- ✓ *Crisis does not change the fundamentals of PPP*, and PPP is sufficiently flexible to be adjusted to market conditions. Be willing to reconsider each aspect of the PPP to find the best solution. For example, phase or scale down investment to fit accessible finance and reduced demand, and consider replacing some of the desired private financing with public funding (to the extent public funding is available) until such time as market conditions make private financing a better value.
- ✓ *Continue developing the PPP pipeline* during the period when private financing may not be available, to avoid a significant lag in the pipeline later. Similarly, sector reform to encourage PPP should continue, to the extent possible. Don't lose momentum.

This chapter discusses key lessons learned from previous financial and economic crises, as well as observations from the 2008–2009 crisis and their impact on PPP projects (Section 8.1) and what governments can do when faced with a financial or economic crisis to protect existing PPP projects and maintain the pipeline for the continued development of PPP (Section 8.2).

8.1 The Impact of Crises

Each crisis is different, and the implications of the 2008–2009 economic and financial crisis seem to change constantly as new systemic weaknesses are discovered. However, reviewing past crises and considering what we know about the 2008–2009 crisis, the following can be considered.

8.1.1 Demand Profile

Any major crisis will have a negative impact on consumer confidence and therefore on corporate investment programs and on budget allocations (both household and organizational) for infrastructure services. The demand forecast is a fundamental part of a project's viability, and therefore the reduction in demand below that forecast will threaten project fundamentals. Where the project bears demand risk, this may result in reduction of payments made to private lenders or investors. Where the government bears demand risk, the government may end up paying fees or additional tariffs to the project company well in excess of the perceived value of the offtake needed. This fundamental stress on the project may drive investors to reduce capital investments or otherwise reduce costs, or to exit the project. It may also drive

the grantor to seek to terminate the project or otherwise reduce its exposure. An imbalance in risk allocation, in particular in relation to demand risk, in the face of a crisis can render the project critically vulnerable.

Reduction in demand and increase in financing costs may result in increased tariffs. In a vicious circle, increased tariffs may simply result in further reduced demand, depending on its elasticity. It may also pose affordability problems, in particular among the poorest consumers. Where tariffs are not increased, the utility will be placed under greater financial pressure, which may hurt the utility's credit position, which may in turn further increase the cost of the utility's debt. Also, when revenues fall, maintenance is usually one of the first expenses to be cut. However, shortfalls in maintenance will have an exponential impact on future capital expenditure requirements (for asset replacement). The money saved on asset maintenance now will cost much more over time.

8.1.2 Availability and Cost of Capital (Debt and Equity)

For those projects that have not yet reached financial close, accessing new debt or equity undertakings (in local and/or foreign currencies) may be extremely difficult or merely more expensive. The complete inability to

access investment is generally short-lived; however, large increases in the cost of money (debt or equity) can threaten the financial viability of the project and its value for money for the government. This increased cost of money arises from (1) reduced liquidity, and the subsequent reduction in supply of money; and (2) increased perception of risk and therefore increased credit risk, resulting in lenders and equity investors demanding larger margins to cover that credit risk.

The increased cost of debt (due to reduced liquidity and increased credit risk) will be exacerbated by the increased time and cost to reach financial close. The syndication markets is likely to be disrupted, and therefore lending for project will need to rely on a single bank or a club of banks, leaving the project exposed to the demands of even the smallest club member, as well as the time and complexity needed to manage a club of banks. This will be more of a problem for large projects, where the size of the club increases. Debt tenors may also shrink in times of crisis, making it difficult for projects to be financially viable unless tariffs are increased accordingly or government grants take up the slack.

Other elements of the financial markets that formerly supported key lending functions may be lost or diminished, such as, for example, derivative instruments that mitigate foreign exchange or interest rate risk. The recent failure of

monoline insurers has seriously impeded the bond project finance market. The monoline insurers played three key roles for bondholders: (1) project assessment, driving the due diligence process; (2) credit enhancement, improving credit ratings so that certain institutional investors could participate and keeping the cost of debt at a more reasonable level; and (3) administrative agent, overseeing the consents and waivers needed at various points in the project that would be impractical for bondholders to provide individually. The loss of these functions has been critical for the project finance bond market.

Equally, sponsors who are relied upon to provide much of the energy to drive project development and coordination of lenders may experience a weakening of their balance sheets and in the level of funding they can make available for project development. Increased pressure on a sponsor's bottom line will also eliminate competition from new entrants or companies for whom PPP is purely a developmental opportunity. Only the serious companies are likely to survive.

Therefore, governments will see a reduction in the number of active bidders for projects, and where bids are received, their pricing will reflect the increased cost of debt and equity due to perceptions of higher financial risk. Bids are also less likely to have fully committed funding much before financial close, creating moral hazard that lenders

will use this reduced competitive pressure to argue for better terms or pricing for their financing. This may result in further flight to quality, because private investors are interested in pursuing only the most attractive projects, and competition among private investors is limited.

8.1.3 Availability of Hedging and Other Financial Mechanisms

To help manage various financial risks, in particular in relation to foreign exchange and interest rates, project companies will look to enter into a number of different hedging and other financial mechanisms (see Chapter 3 for a detailed discussion of these mechanisms). In times of crisis, project companies have more difficulty accessing these mechanisms, and those that are available have shorter tenor and higher prices. One of the key examples is monoline insurance. Once a fundamental part of the project bond market, in particular in Europe, monoline insurers have all but withdrawn from PPP. This has deprived PPP of a key source of long-term funding, in particular for refinancing.

8.1.4 Availability of Government Funds

For many PPP projects, government support, be it funded or contingent, is key to the viability of the project. In times of financial or economic crisis, the government may

find its tax receipts reduced and its budget reallocated to other priority expenses, reducing the amount of support it can provide to PPP projects. Equally important are the government resources used to fund project development and ensure the pipeline of PPP projects is maintained. Reduction in the amount of public funding for project development can result in weaker, more vulnerable projects and an increased likelihood of expensive failures.

8.1.5 Availability of Donor Funds

Reductions in fiscal receipts across the globe will also have a direct impact on the availability of donor funding for poor countries. Where governments are scrambling to rescue their own economies, focus on the problems of others is likely to diminish. Already, there is a clearly nationalistic bend to the stimulus packages being developed in wealthy countries. This reduction in access to concessional funding will have a direct impact on infrastructure generally, but more specifically on PPP projects, because the high cost of preparation of PPP projects is often subsidized by donor funding.

8.2 What Can Be Done?

The first piece of advice is: don't panic. Markets eventually normalize, and financial and economic crises do

not change the fundamentals of PPP. They merely alter the way PPP should be structured to address the government's needs and the realities of financial markets. The following is a discussion of what can be done to support PPP in difficult times. It will discuss mechanisms that may be used for existing projects and/or new projects that have not completed the bid process. This menu will clearly need to be adjusted to the context of the country, the project, and the appetite of the government in question.

8.2.1 Revenue Support and Cost Reductions

To respond to the risk of demand reductions and increases in the cost of financing, the government may want to support portions of the project revenue streams, in particular where tariff increases are no longer feasible from a political or affordability perspective. For example, subsidies can be used to reduce the consumer tariff burden on certain parts of society or soften the speed at which tariffs need to increase (see Section 3.3). The government may want to increase tariffs to support cost recovery and therefore the long-term sustainability of the utility. Government funding can be used to mitigate the impact of higher tariffs on those unable to afford them, for example, through subsidies to the utility to offset lower tariffs for low-income consumers or subsidies directly to consumers to

offset cost increases. Tariff support needs to be specifically targeted, with proper incentives to improve efficiency and achieve performance requirements. Badly targeted tariff support can merely encourage inefficiency and divert incentives away from service delivery. Extensions of the project period can also add value and reduce tariffs, but the longer is currently left of the relevant project period, the less value is created by its extension due to the time value of money; added value far in the future is not worth as much today.

In parallel, efforts can be made to reduce costs, in particular by reducing the size of the facility or refurbishment being undertaken, or phasing project investments (in particular to respond to reducing demand). Cost reductions should not be permitted to create maintenance shortfalls or otherwise degrade key performance specifications or increase long-term capital deficits. Additional contingent support, such as government or IFI guarantees, can also reduce financing costs or mitigate offtaker payment risk.

8.2.2 Replace Private Debt/Equity with Public Resources

Where access to private investment is difficult or too costly, and the government has access to debt or other funding, the government should consider replacing private investment with public funding (subsidies, debt,

equity, or otherwise). Such a publicly funded project can later be refinanced using private money once the financial markets improve, and the PPP project should be structured accordingly from the outset. For example, the United Kingdom has created the Infrastructure Finance Unit in the Treasury to act as a direct lender to projects. France, on the other hand, has chosen to provide guarantees to encourage private lenders.

It should be noted, however, that in privately financed PPP projects, the grantor will rely on the presence of the lenders to monitor financial flows and the shareholders' equity investment to ensure their medium- to long-term commitment to the project. To the extent the government provides debt or guarantees, the lender's incentive to perform careful project assessment may be diminished. The grantor will therefore need to take on an even more proactive role in project development where the lenders are not involved at the outset to establish mechanisms to protect financial flows. The UK Treasury has assembled a specialist team, the Infrastructure Finance Unit, to provide some of this project assessment function. This team also endeavors to co-finance projects with commercial banks whenever possible to benefit from the assessment functions of those banks. To ensure project company incentives are aligned with delivering services, the PPP project will need to be structured accordingly – for example, paying out

profit over time or obtaining shareholder guarantees for long-term service delivery. The structure of a PPP can be maintained by using performance/output-based contracting and by requiring the shareholders to invest a level of equity sufficient to ensure the project company incentives are properly focused.

When providing such support, the government will need to set clear policies, in particular on:

- how much support to provide, for example, the proportion of the total project cost;
- what creditor or other rights the government will require;
- the terms on which the government will settle down its position at a later date;
- how to avoid political capture of the support mechanism, including the projects to which the government provides support, the amount of support provided, and the terms on which this support is provided;
- where the support is to be provided by a public entity and how to establish an efficient capitalization, selection, and credit function in an otherwise public entity.

8.2.3 Locally Sourced Debt/Equity

International private investment has diminished significantly, but some local financial markets have not been as severely impacted. Liquidity in these markets can be

used to support PPP projects, with the added benefit of increasing long-term opportunities in those local markets. Where local financial markets have the depth and liquidity needed to help finance PPP projects, but merely lack the asset/liability mix needed for long tenor debt, or the expertise in PPP project financing debt, another effective mechanism available to the government is the use of a financial intermediary. This intermediary would assemble the expertise and attract the right asset/liability mix needed to issue project finance debt in local currency and mobilize additional local currency funding from local banks or capital markets by taking risk out of the project to the extent needed to permit these local entities to participate (see Section 3.3).

8.2.4 Alternative Sources of Debt/Equity

Where private sources of financing are no longer sufficient to meet the requirements of PPP projects, MLAs and BLAs may be able to provide additional support or help mobilize other sources of financing (for example, funding from local financial markets where the local financiers do not have experience in PPP, but MLAs and BLAs can effectively mobilize this available liquidity). As noted earlier in the chapter, there is the likelihood that concessional financing from donors will reduce during the period of crisis, however, a certain number of the MLAs

may be able to mobilize additional capacity in the face of the crisis. Sovereign wealth funds may also provide an additional source of financing for PPP, in particular on a co-financing basis to leverage the PPP experience of other lenders like the MLAs.

8.2.5 Tenor Extension

Where private lenders are not able to provide long tenor debt as is commonly preferred for PPP projects, some combination of government and sponsor support can be used to remove the refinancing risk that the lenders are not willing to bear. For example, the lender may be willing to provide a "soft mini-perm" facility with a short tenor (five- to seven-year debt), after which the margin increases significantly, creating a strong incentive for the project company to refinance. A similar structure can be used, where the refinancing is compulsory, referred to as a hard mini-perm. In either case, it will be important to allocate risk of the increased cost of debt clearly, including any mechanisms to manage that risk (e.g., standby equity). The parties will also want a clear allocation of refinancing gain sharing.

8.2.6 Adjust the Terms of the Competition

There is a perception that the terms commonly applied to PPP projects had reached unreasonable levels in the

run-up to the crisis. Whatever the truth of the matter, mobilizing private financing for PPP projects will clearly be easier if the terms of the competition are softened to the benefit of the private sector. For example, the grantor may wish to reduce the levels of financial commitment required at bid. This places a greater risk on the grantor that additional issues will be raised by lenders after the bid stage. However, it gives the project company more time to arrange debt. Where this is the case, the grantor can insist that project company does not place any exclusivity or other restrictive constraints on their lenders, leaving their lenders free to fund the winning consortium, no matter who it is. Equally, the grantor may want to organize a funding competition, where once the preferred bidder is chosen, a competitive process is implemented to select the lenders offering the best terms. Alternatively, the grantor may wish to retain rights over the project company's book-building process, endeavoring to add more competitive pressure, or at least oversee the project company's process of mobilizing financing. Defining the influence the grantor will have on this book-building process can be very difficult.

The grantor may wish to consider placing less risk on the project company in order to increase appetite for the project, as well as in response to the increased perception of project risk that will influence the market in times

of crisis. By including better conditions, the grantor can help increase the credit rating of the project. The shareholders have a lot to do with this, for example, applying a lower debt/equity ratio and providing more sponsor support. With a sufficiently high credit rating, the project may be able to attract financing from unwrapped bond issues.

8.2.7 Increased Contingent Support

In times of crisis, when perceptions of risk are at their highest, the government may wish to provide additional contingent support to reduce the credit risk of the project or other isolated project risks. This approach has been adopted by the French and Portuguese governments, for example. The nature of guarantees other contingent liabilities support is very flexible, allowing the government to isolate specific concerns of potential investors and lenders and to adjust the nature of its support as the impact of the crisis changes over time. However, contingent liabilities support is also very complex, and the potential for significant government liabilities arising – often unknowingly – out of such support is high. Government debt management departments may not be properly staffed to assess, monitor, and manage these liabilities.

8.2.8 Project Development Funding

Grantor access to project development funding can have a dramatic impact on projects in the process of procurement and on the pipeline of PPP projects in the short to medium term. The government will want to ensure that this funding is maintained (in particular in the face of reducing donor subsidies), either directly through budget allocations or possibly through project development facilities or other mechanisms meant to create revolving facilities that can reduce some of the impact on government budget resources. This support for broader preparation will be even more important given the likelihood of a flight to quality by private investors once the markets start to recover. Private investment will flow first to those projects that have been best prepared. Failure by the government to invest in preparation now will mean reduced competitiveness and less investor interest when markets revive.

8.2.9 Dispute Resolution

Finally, for projects that have reached financial close, the government will need to increase its monitoring of projects and thereby increase its vigilance to identify problems with revenue streams, the need to access additional debt, and other warning signs of trouble. By identifying PPP

project stress early, many problems can be avoided or mitigated, and the relevant impact of the crisis reduced. The government will need to allocate sufficient funding and experienced staff to monitor projects and ensure timely responses. As discussed in Chapter 6, renegotiation can be an opportunity to improve the project, and times of economic and financial crisis may provide many such opportunities.

Aggregate Key Messages for Policy Makers

The following summarizes the key messages for policy makers provided in this book, for reference. Because these messages are often context-specific, they have been organized roughly under the different phases of a project: selection, preparation, bidding, and implementation.

Conducive Investment Climate

Find the right champions. A good investment climate means working together with different ministries and agencies; the team of champions needs to be up to this task. A figurehead is not enough: Political leadership and buy-in is key.

Seek balance – "the perfect is the enemy of the good" (Voltaire):

➢ There is no such thing as the perfect investment climate – stability, consistency and certainty are

more important to investors than the pursuit of perfection.

➢ don't wait for a completed reform process before preparing projects; a good investment climate will save a lot of headaches.

PPP is not one-size-fits-all. Each sector needs specific consideration and possibly a bespoke PPP solution; adapt the structure used to the needs of the sector.

Selection

Select projects purposefully. Work out exactly what you want from the project (more access, investment, lower prices?) and select accordingly.

Invest in development. Effort spent selecting the right project will earn benefits later. Get the project design right; changes made later cost more.

Select good projects. Garbage in–garbage out; just say "no" to bad projects:

➢ Select robust, viable projects for PPP – these are more likely to be financed on a competitive basis and are therefore more likely to provide value for money.

➢ Projects suffering from bad design, dubious demand, or weak fundamentals are more likely to fail and may weaken the entire PPP program in the process.

➢ A good, transparent selection process can reassure investors and increase competition. Projects selected for political reasons or priorities will create a perception of increased political risk among investors.

Confirm project viability periodically to avoid losing focus. First decide you want PPP on a rational, fundamentally sound basis, then keep reminding yourself why you chose PPP – because its implementation can be challenging – and periodically verify that the project is meeting those objectives.

Preparation

Be patient. PPP is not a quick fix; it takes time to develop and implement properly. Generally, more time spent in advance of procurement to prepare the project properly will save much more time and frustration later. Think through contingencies in advance and make sure you are happy with the project structure and specification before going to the market.

Prepare well. PPP requires up-front investment of staff and money to develop projects properly, in particular to pay for expensive external advisers. Project development costs the government on average 3 percent or more of project construction cost. The benefit of this up-front

investment is obtained over time, because PPP provides for management and funding for the whole life of the assets and therefore addresses project risks early.

Be ready for challenges. In any long-term relationship, change happens. PPP is, above all, a partnership; it needs to be designed with challenges, changes, and resolution in mind. Problems need to be elevated to appropriate levels of management before they become disputes or worse.

PPP is by nature flexible. Look first at what you need, then design your approach based on those needs. Do not look first at what others have done, because your context may be very different. That said, learn from the experiences of others.

Consider all stakeholders. PPP will have a direct influence on some (in particular employees and management) and may raise political or philosophical concerns among many more. Even though absolute consensus will never be reached, the government needs to understand fundamental concerns and address them.

Be flexible when considering sources of financing. Be ready to mix public and private money to improve value for money, especially in the early days of PPP or when private markets are weak. Public money also helps worthwhile projects that are not necessarily financially viable become more robust projects, increasing the opportunities for PPP.

Efficiency of financing is key. There is no free ride; someone will have to pay (consumers and/or taxpayers), so make sure you get the best value for money.

Beware of creating significant risks when using highly structured financing. Overly complex, highly leveraged financing, although cheaper, may create an overly vulnerable project – a robust project is often worth the higher cost in times of trouble – and trouble happens.

Project finance is complex. Get the right advice and be ready to pay for it; if properly managed, it can save you time and money.

Government money can be used effectively to improve PPP projects. Government is a key partner in PPP and government support a key element in successful PPP.

- ➢ Government support can improve financial viability and make a project more attractive for investors, but it will not turn a bad project into a good one.
- ➢ Use government support efficiently, in a targeted manner, to ensure government goals are achieved.
- ➢ Ensure funding mechanisms are properly resourced and incentivized to avoid political capture or inertia.

Don't cram risk on the private sector. It usually is inefficient, expensive, and makes the project overly vulnerable to change and crises.

Bidding

Do not cut corners on procurement. It may seem easier to enter into direct negotiations instead of using competitive procurement, but it isn't. It takes longer and costs more money. Maximizing competition through good, transparent, public procurement is one of the most important benefits of PPP.

Be clear to bidders about what you want. Indicate clearly what results, milestones, and indicators you want the investor to achieve. Help bidders give you what you want – don't make them guess.

Be open to discuss your expectations – bidders might have some useful suggestions. Take the time to discuss with bidders and use the competitive dialogue to improve the project.

Be cautious when selecting the winning bid. If a bid seems too good to be true (financially, technically, or otherwise), then it probably is. Look carefully at the detail, whether or not it is a fixed and complete bid; if anything looks unconvincing, it may be wise to reject it.

While protecting the grantor's interests, listen to lender concerns. Focus on the lenders' key needs and perceived risks, but don't let them drive the agenda. Take the time and effort to make life a little easier for the lenders. It is likely to make your life easier in the long run.

Implementation

Government must regulate and monitor PPP. This must be an integral part of project design. PPP or not, the public sector is always the final authority and will be ultimately responsible for the provision of public services.

Prepare for change during the project. It is not possible to anticipate or make every risk decision in advance; mechanisms will be needed to address change and other challenges.

Stability is the goal. Prepare for every eventuality but realize it is impossible to anticipate every one of them.

Ensure a practical fallback position that protects consumers. Make sure that if all else fails, the public is in the position to take the infrastructure and services back quickly to ensure continuity.

Keep the revenue stream as certain, foreseeable, and ring fenced as possible; it is the lifeblood of the project.

A failed project costs everyone time and money; *it is generally worth the extra money or effort to make the project a bit more robust*, obtaining information, improving planning, managing risk, and considering options. A proactive, collaborative framework must provide partners with the platform for resolution.

Put in place the right grantor team. The project will not manage itself; failure to assign a sufficiently expert team

to manage project implementation (i.e., after financial close), with necessary funding, can turn the best project into a failure.

Prepare for the future. Decide up front what happens later in the project; deferred decisions only become more expensive and contentious. Decisions to make changes need to be made in advance; such decisions later in the process, during implementation, can be expensive and time-consuming.

Be flexible and prepare for conflict resolution. No contract can contemplate every eventuality, so expect to need to resolve challenges collaboratively – that is, it should be managed like a partnership.

Renegotiation can be an opportunity and can provide the parties and all stakeholders with the opportunity to improve the PPP arrangements and protect the most vulnerable.

Be proactive. Establish mechanisms intended to catch disputes as early as possible. Early in the process, options are varied, relative cost is low, and the likelihood of immediate value-added resolution is higher. *Facilitation can help*. Softer processes are designed to use and develop relationships as the basis for finding mutually satisfactory solutions and can work better than more formal processes.

Responding to the Economic Crisis

Crisis does not change the fundamentals of PPP, and PPP is sufficiently flexible to be adjusted to market conditions. Be willing to reconsider each aspect of the PPP, to find the best solution. For example, phase or scale down investment to fit accessible finance and reduced demand, and consider replacing some of the desired private financing with public funding (to the extent public funding is available) until such time as market conditions make private financing a better value.

Make sure to continue developing the PPP pipeline during the period when private financing may not be available, to avoid a significant lag in the pipeline later. Similarly, sector reform to encourage PPP should continue, to the extent possible. Don't lose momentum.

Glossary

This glossary of terms, abbreviations, and acronyms is included exclusively for use as a reference aid and therefore should not be considered an exhaustive or complete discussion of any of the terms set out below, or indeed of all the terms relevant to PPP or project finance. Definitions are generally given under their spelled-out form, and the abbreviation refers to the spelled-out form.

affermage A PPP structure originally created under French law, under which the private operator is responsible for operating and maintaining the utility/business but not for financing investment. The project company does not receive a fixed fee for his services but retains part of the receipts collected from consumers, with a portion of the receipts going to the grantor as owner of the assets. The payment to the grantor will be a percentage

of the receipts or a percentage of the total units of service provided.

arranger The senior tier of a syndication. Implies the entity that agreed and negotiated the project finance structure. Also refers to the bank/underwriter responsible for originating and entitled to syndicate the loan/bond issue. The arranger may not necessarily also be the agent and may not even participate in the transaction.

availability charge See capacity charge.

basis point (BP) One hundred basis points equal one percentage point.

BBO Buy-Build-Operate (similar to BOO).

BLA Bilateral agency, see Section 1.1.

BOO Build-Own-Operate. The private entity will build, own, and operate the project just as in a BOT project, but there is no transfer back to the government. This method is often used where there will be no residual value in the project after the concession period or accounting standards do not permit the assets to revert to the grantor if the grantor wishes to benefit from off-balance sheet treatment.

BOOS Build-Own-Operate-Sell. Same as a BOT except that the grantor pays the project company for the residual value of the project at transfer.

BOOST Build-Own-Operate-Subsidize-Transfer (similar to BOT).

BOOT Build-Own-Operate-Transfer (similar to BOT).
BOR Build-Operate-Renewal of concession (similar to BOO).
BOT Build-Operate-Transfer.
bridge financing Interim financing, before a long-term financing is put in place.
BRT Build-Rent-Transfer (similar to BOT).
BT Build-Transfer. The project company builds the facilities and transfers them to the grantor.
BTO Build-Transfer-Operate (similar to BOT). This often involves the grantor paying for construction of the facility, separate from operations, at or before transfer.
capacity charge Payment by the purchaser to the project company for the available capacity of the project. This charge will cover fixed costs including debt service, operating costs, and service fees. Also known as availability charge.
capitalized interest Accrued interest (and margin) that is not paid but added ("rolled up") to the principal amount lent at the end of an interest period. See, for example, interest during construction.
concession agreement The agreement with a government body that entitles a private entity to undertake an otherwise public service.
conditions precedent (CPs) Conditions that must be satisfied before a right or obligation accrues. The matters

that have to be dealt with before a borrower will be allowed to borrow under a facility agreement. These will be listed in the agreement.

construction contract The contract between the project company and the construction contractor for the design, construction, and commissioning of the works.

credit risk The risk that a counterparty to a financial transaction will fail to perform according to the terms and conditions of the contract (default), either because of bankruptcy or any other reason, thus causing the asset holder to suffer a financial loss. Sometimes known as default risk.

cushion The extra amount, such as of net cash flow remaining after expected debt service.

DBFO Design-Build-Finance-Operate. The grantor retains title to the site and leases the project back to the project company for the period of the concession. Similar to BOO.

DCMF Design-Construct-Manage-Finance, similar to BOO.

debt/equity (D:E) ratio The proportion of debt to equity, often expressed as a percentage. The higher this ratio, the greater the financial leverage of the firm. Also known as gearing.

debt service Payments of principal and interest on a loan.

debt service cover ratio (DSCR) The ratio of income-to-debt service requirements for a period. Also known as the cover ratio.

debt service reserve An amount set aside either before completion or during the early operation period for debt servicing where insufficient revenue is achieved.

defects liability period The period during which the construction contractor is liable for defects after completion.

direct agreement An agreement made in parallel with one of the main project documents, often with the lenders or the grantor. Step-in rights and other lender rights are often reinforced or established through direct agreements between the lenders and the project participants.

discount rate The rate used to discount future cash flows to their present values, often based on a firm's weighted average cost of capital (after tax) or the rate the capital needed for the project could return if invested in an alternative venture. A higher discount rate may be used to adjust for risk or other factors.

ECA Export credit agency, see Section 1.1.

economic rate of return also economic internal rate of return (EIRR) The project's internal rate of return after taking into account externalities (such as economic, social, and environmental costs and benefits) not included in financial IRR calculations.

environmental impact assessment (EIA) An assessment of the potential impact of a project on the environment that results in an environmental impact statement.

environmental impact statement (EIS) A statement of the potential impact of a project on the environment. The result of an environmental impact assessment that may have been subject to public comment.

EPC contract Engineering, procurement, and construction contract (i.e., turnkey construction contract).

equity The cash or assets contributed by the sponsors in a project financing. A company's paid-up share capital and other shareholders' funds. For accounting purposes, it is the net worth or total assets minus liabilities.

financial close In a financing, the point at which the documentation has been executed and conditions precedent have been satisfied or waived. Drawdowns become permissible after this point.

financial internal rate of return (FIRR) See internal rate of return.

fiscal space Capacity in a government's budget (including borrowing capacity) that allows it to provide or access resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy or otherwise breaching restrictions created by its own national laws or by supranational

bodies or by lenders (in particular large lenders such as the IMF or World Bank).

fixed rate loan A loan for which the rate paid by the borrower is fixed for the life of the loan.

floating interest rate An interest rate that fluctuates during the term of a loan in accordance with some external index or a set formula, usually as a margin or spread over a specified rate. See also variable-rate loan.

force majeure Events outside the control of the parties, which prevent one or both of the parties from performing their contractual obligations.

grantor The party that grants a concession, a license, or some other right.

greenfield Often used to refer to a planned facility that must be built from scratch, without existing infrastructure.

IFI International Financial Institution, see Section 1.1.

input supply agreement The agreement entered into by the project company and the input supplier, which defines the rights and obligations in relation to the supply of input for the project. It will be used to allocate the market risk of input cost and provision. This agreement will often be on either a take-or-pay or a take-and-pay basis.

intercreditor agreement An agreement between lenders as to the rights of different creditors in the event

of default, covering such topics as collateral, waiver, security, and set-offs.

interest during construction (IDC) This interest accumulated during construction, before the project has a revenue stream to pay debt service, is usually rolled up and treated as capitalized interest.

internal rate of return (IRR) The discount rate that equates the present value of a future stream of payments to the initial investment. See also economic IRR.

liquidated damages (LDs) A fixed periodic amount payable as a sanction for delays or substandard performance under a contract. Also known as a penalty clause.

limited recourse debt See non-recourse debt.

margin The amount expressed as a percentage per annum above the interest rate basis or cost of funds. For hedging and futures contracts, the cash collateral that is deposited with a trader or exchange as insurance against default.

mezzanine financing A mixture of financing instruments, with characteristics of both debt and equity, providing further debt contributions through higher-risk, higher-return instruments, sometimes treated as equity.

MLA Multilateral agency, see Section 1.1.

monoline Specialist insurers, whose business is the provision of financial guarantee insurance.

net present value (NPV) The discounted value of an investment's cash inflows minus the discounted value of its cash outflows. To be adequately profitable, an investment should have a net present value greater than zero.

non-recourse (limited recourse) The lenders rely on the project's cash flows and collateral security over the project as the only means to repay debt service, and therefore the lenders do not have recourse to other sources, such as shareholder assets. More often, non-recourse debt is actually limited recourse debt.

off-balance sheet liabilities Corporate obligations that do not need to appear as liabilities on a balance sheet, for example, lease obligations, project finance and take-or-pay contracts.

offtake purchase agreement The agreement whereby the offtake purchaser undertakes to purchase an amount of some or all of the project output, for example, the power purchase agreement in the context of a power project and a water purchase agreement in the context of a water treatment project.

operation and maintenance agreement The agreement allocating to the operator the obligation to operate and maintain the project in accordance with its requirements.

option A contract under which the writer of the option grants the buyer of the option the right, but not the

obligation, to purchase from or sell to the writer something at a specified price within a specified period (or at a specified date). Also purchase option, put option, hedge, futures contract, swap.

pari passu Of instruments, ranking equally in right of payment with each other and with other instruments of the same issuer. From Latin: with equal step.

performance bond A bond payable if a service is not performed as specified. Some performance bonds require satisfactory completion of the contract whereas other performance bonds provide for payment of a sum of money for failure of the contractor to perform under a contract.

power purchase agreement (PPA) An offtake purchase agreement in relation to a power project, for the purchase of electricity generated.

pre-qualification The process whereby the number of qualified bidders is limited by reviewing each bidder's qualifications against a set of criteria, generally involving experience in the relevant field, capitalization, site country experience, identity of local partners, and international reputation.

project The asset constructed with, or owned via, a project financing, which is expected to produce cash flow at a debt service cover ratio sufficient to repay the project financing.

project documents or **project agreements** The commercial agreements that are the subject of this book, including the concession agreement, the construction contract, the input supply agreement, the offtake purchase agreement, and the operation and maintenance agreement.

project financing A loan structure that relies for its repayment primarily on the project's cash flow, with the project's assets, rights, and interests held as secondary security or collateral. See also limited recourse and non-recourse financing.

rating agency or **credit rating agency** A private agency that assesses credit risk of sovereign entities, companies or investments, such as Standard & Poor, Moody's, and Fitch. The agency applies a letter grade to indicate credit risk. Lenders and investors use the rating as an indication of the relative riskiness of a loan or investment.

recourse In the event that the project (and its associated escrows, sinking funds, or cash reserves/standby facilities) cannot service the financing or the project completion cannot be achieved, then the lenders have recourse either to cash from other sponsors and/or corporate sources or other non-project security. See also limited recourse and non-recourse.

refinancing Repaying existing debt by obtaining a new loan, typically to meet some corporate objective

such as the lengthening of maturity or lowering the interest rate.

reinsurance The procedure used by insurance companies to reduce the risks associated with underwritten policies by spreading risks across alternative institutions, portioning out pieces of a larger potential obligation in exchange for some of the money the original insurer received to accept the obligation. The party that diversifies its insurance portfolio is known as the ceding party. The party that accepts a portion of the potential obligation in exchange for a share of the insurance premium is known as the reinsurer. Also known as insurance for insurers or stop-loss insurance.

reserve account A separate amount of cash or a letter of credit to service a payment requirement such as debt service or maintenance.

return on assets (ROA) Net profits after taxes divided by assets. This ratio helps a firm determine how effectively it generates profits from available assets.

return on equity (ROE) Net profits after taxes divided by equity investment.

return on investment (ROI) Net profits after taxes divided by investment.

RLT Refurbish-Lease-Transfer (similar to BOT).

ROO Rehabilitate-Own-Operate (similar to BOO).

ROT Rehabilitate-Operate-Transfer (similar to BOT).

security A legal right of access to value through mortgages, contracts, cash accounts, guarantees, insurances, pledges, or cash flow, including licenses, concessions, and other assets. A negotiable certificate evidencing a debt or equity obligation/shareholding.

shareholders' agreement The agreement entered into by the shareholders of the project company, which governs their relationship and their collective approach to the project.

special purpose vehicle An entity created to undertake a project in order to protect the shareholders with limited liability and limited or non-recourse financing.

sponsor A party wishing to develop/undertake a project. A developer. A party providing financial support.

step-in rights The right of a third party to "step in" to the place of one contractual party where that party fails in its obligations under the contract and the other party to the contract has the right to terminate the contract.

subordinated debt Debt that, by agreement or legal structure, is subordinated to other (senior) debt, allowing those (senior) lenders to have priority in access to amounts paid to the lenders by the borrower from time to time, and to borrower assets or revenues in the event of default. This priority may be binding on liquidators or administrators of the borrower. It does not include reserve accounts or deferred credits.

subrogation rights The right of an insurer to take over the rights in action (i.e., right to sue) of its insured, to recover the amount it paid out to the insured.

super-turnkey contract Based on a turnkey construction contract, the contractor is required to contribute to the financing of the construction, often by agreeing to the deferral of the payment due to it until after completion or during operation.

swap The exchanging of one security, debt, currency, or interest rate for another. Also known as a switch, hedge, futures contract, or option.

syndicated credit facility A credit facility in which a number of banks undertake to provide a loan or other support facility to a customer on a pro rata basis under identical terms and conditions evidenced by a single credit agreement.

take-or-pay In the event the project's output is not taken, payment must be made whether or not the output is deliverable. Also known as throughput contract or use-or-pay contract.

tender process See discussion of bid process in Section 2.2.

tranche A separate portion of a credit facility, perhaps with different lenders, margins, currencies, and/or term.

turnkey construction The design and construction of works to completion, so that they are ready to produce cash flow.

ultra vires An act outside the scope of one's authority.

variable-rate loan A loan made at an interest rate that fluctuates with the prime rate, LIBOR, or some other index.

variant bid The grantor may wish to allow variant bids (in addition to compliant bids) that the bidder believes satisfy the grantor's needs but do not comply specifically with the requirements set out in the tender documentation. A variant bid may involve a technical innovation or some other change in approach that will reduce costs or improve efficiency such as, for example, a different technology or tariff structure.

variation or change A technical term in construction contracts referring to a variation of the client's requirements ordered by the client, generally entitling the contractor to a change in the contract price, the time for completion, and any other obligation affected by the variation ordered.

vitiation Where the project insurance involves several insured parties (with varying interests in the insured risk) under the same insurance policy, and the insurance policy becomes unenforceable (with all of the insured

parties losing their coverage) due to a breach by one of the insureds of its obligations under the policy (in particular the obligation to disclose relevant information to the insurer).

weighted average cost of capital (WACC) The total return required by both debt and equity investors expressed as a real post-tax percentage on fund usage.

works A technical term in construction identifying the entirety of the facilities and services to be provided by the construction contractor.

Selected Readings

While not an exhaustive bibliography, the following are key texts that will be of interest to those wanting an in-depth understanding of PPP.

Asian Development Bank, *Public-Private Partnership (PPP) Handbook* (Manila, 2008).

Delmon, *Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risk* (Kluwer Law International and World Bank 2009).

Water Projects: A Commercial and Contractual Guide (Kluwer Law International 2000).

Delmon and Rigby Delmon, *Law Applicable to PPP and Project Finance Transactions in Key Frontier Jurisdictions* (to be published by Kluwer International in late 2010).

Department of Treasury & Finance, *Partnerships Victoria* (Melbourne, 2002).

Partnerships for Growth: Policies and Guidelines for Public Private Partnerships in Western Australia (Perth, 2002).

Dutz, Harris, Dhingra, and Shugart, *Public-Private Partnership Units: What Are They, and What Do They Do?* (Public Policy for the Private Sector Note No. 311, World Bank, Washington DC, 2006).

Esty, *Modern Project Finance: A Casebook* (2003).
European Commission, *Guidelines for Successful Public-Private Partnerships* (2003).
Farlam, *Working Together: Assessing Public–Private Partnerships in Africa* (Nepad Policy Focus Report No. 2) (2005).
Finnerty, *Project Financing: Asset-Based Financial Engineering* (2007).
"Government Guarantees and Fiscal Risk" (International Monetary Fund 2005).
Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions (COM/2004/327, Brussels 2004).
Guasch, *Granting and Renegotiating Infrastructure Concessions: Doing It Right* (Washington DC, World Bank, 2004).
HM Treasury, *Public Private Partnerships: The Government's Approach* (2000).
Industry Canada, *Public-Private Partnerships: A Canadian Guide* (2001).
Infrastructure Consortium for Africa, *Attracting Investors to African Public-Private Partnerships – A Project Preparation Guide* (Washington DC, World Bank, 2008).
International Monetary Fund (Fiscal Affairs Department), *Public-Private Partnerships* (Washington DC, 2004).
Irwin, *Government Guarantees: Allocation and Valuing Risk in Privately Financed Infrastructure Projects* (Washington DC, World Bank 2007).
Kerf, *Concessions for Infrastructure: A Guide to Their Design and Award* (Technical Paper 399, World Bank, Washington DC, 1998).
National Treasury, *South Africa PPP Manual* (Pretoria, 2004).
Nevitt and Fabozzi, *Project Financing* (7th edition, London: Euromoney Bank, 2000).

New South Wales Government, *Working with Government: Guidelines for Privately Financed Projects* (Sydney, 2006).
OECD. "Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money." 2008.
Price Waterhouse Coopers/PPIAF. "Hybrid PPPs: Leveraging EU Funds and Private Capital." Washington DC, 2006
Posner, Shin, and Tkachenko, *Public-Private Partnerships: The Relevance of Budgeting* (Organization for Economic Co-operation and Development, Vienna, 2008).
Razavi, *Financing Energy Projects in Developing Countries* (2007).
Scriven, Pritchard and Delmon (eds), *A Contractual Guide to Major Construction Projects* (1999).
The Public Sector Comparator, *A Canadian Best Practices Guide* (Ottawa, 2003).
Tinsley and Tinsley, *Advanced Project Financing* (2000).
UNCITRAL, Model Legislative Provisions on Privately Financed Infrastructure Projects (United Nations, 2004).
UNCITRAL, Legislative Guide on Privately Financed Infrastructure Projects (United Nations, 2001).
UNIDO, Guidelines for Infrastructure Development through Build-Operate-Transfer (United Nations, 1996).
Vinter and Price, *Project Finance: A Legal Guide* (3rd edition, 2006).
Wood, Project Finance, *Securitisations and Subordinated Debt* (2nd Edition, 2007).
Yescombe, *Public-Private Partnerships: Principles of Policy and Finance* (2007).

Representative Web Sites

Australia – Victoria – www.partnerships.vic.gov.au
Canada – British Columbia – www.pss.gov.bc.ca/psb/

Partnerships UK – www.partnershipsuk.org.uk
South African Ministry of Finance PPP – www.ppp.gov.za
UK National Audit Office – www.nao.org.uk has a number of excellent reviews of specific projects and the PFI/PPP program
UK Treasury – www.hm-treasury.gov.uk/documents/public_private_partnerships
USA National Council for PPP – www.ncppp.org
World Bank – www.worldbank.org

- PPPI Resource Center website – www.worldbank.org/pppiresource – legal, contractual, and regulatory guidance, documents, and agreements for PPP
- Global program for Output Based Aid – www.gpoba.org
- PPP database – www.ppi.worldbank.org
- Public-Private Infrastructure Advisory Facility (PPIAF) – www.ppiaf.org – in particular the toolkits for different sectors and functions.
- Rapid response unit – www.rru.worldbank.org
- World Bank Institute – list of links to PPP Units – www.info.worldbank.org/etools/PPPP-Portal/links.htm

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