

Nile Basin Initiative (NBI) - Water Resources Planning and Management Project (WRPMP)

PROJECT PLANNING AND MANAGEMENT

TRAINING TOPIC 3

PROJECT FINANCE



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Table of Contents

PREFACE	V
1 INTRODUCTION	1
2 OVERVIEW OF BASIC FINANCE PRINCIPLES AND CONCEPT	3
2.1 Corporate Finance versus Project Finance.....	3
2.2 Tools Used for Making Investment Decision	4
2.3 Optimum Capital Structure?.....	8
3 PROJECT FINANCE STRUCTURE AND ARRANGEMENTS: CASE OF PPP.....	11
3.1 Introduction	11
3.2 Enabling Factors To Project Finance and PPP	12
3.3 Important Role of The Government.....	15
3.4 Public-Private Partnership Models.....	17
3.5 Special Purpose Vehicle Project	29
3.6 Project Finance and PPP Benefits versus Risk Sharing	31
3.7 Challenges in Implementing Projects with Private Sector Participation	35
4 OVERVIEW OF FINANCING INSTRUMENTS IN PROJECT FINANCE	37
4.1 Internal Financing.....	37
4.2 Debt Financing.....	38
4.3 Lease.....	45
4.4 Export-import Credit Agencies (ECAs).....	46
4.5 Sovereign Wealth Funds.....	47
4.6 Equity	47
4.7 Financing for smaller projects	47



5	CASE STUDY	49
5.1	Project Description	49
5.2	Project Cost and Allocation	49
5.3	Models of financing options to be analyzed.....	49
5.4	Financing Sources and Instruments	50
5.5	Detailed Financing Option analysis	50
5.6	Questions	51
5.7	Inputs and Assumptions	52

List of Figures

Figure 1: Hierarchy of Models in Project Finance and PPP	18
Figure 2: Management Contract.....	19
Figure 3: Typical Turnkey Structure.....	20
Figure 4: Lease/Affermage Structure	22
Figure 5: Concession Structure	23
Figure 6: Private Ownership Structure	25
Figure 7: Comparison of Basic Models for Project Finance and PPPs	28
Figure 8: Typical PPP Structure	29



Abbreviations & Acronyms

AfDB	African Development Bank
BOO	Build-Own-Operate
BOT	Build-Own-Transfer
EAC	Equivalent Annual Cost
EIRR	IRR on Equity
IDB	Islamic Development Bank
ICD	Islamic Corporation for the Development of the Private Sector
IFC	International Finance Corporation
IRR	Internal Rate of Return
MIGA	Multilateral Investment Guarantee Agency
NPV	Net Present Value
PFI	Private Finance Initiative
PPP	Private-Public Partnership
PRG	Partial Risk Guarantee
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
SME	Small and medium sized enterprises (SME's)
TFI	Trade Finance Initiative
WACC	Weighted Average Cost of Capital

Preface

In order to illustrate the relationships between different Training Topics, we need to go beyond the Project Planning Management framework. The following diagram schematically depicts the Strategic Planning and Management Process where each Training Topic is highlighted by its order number.

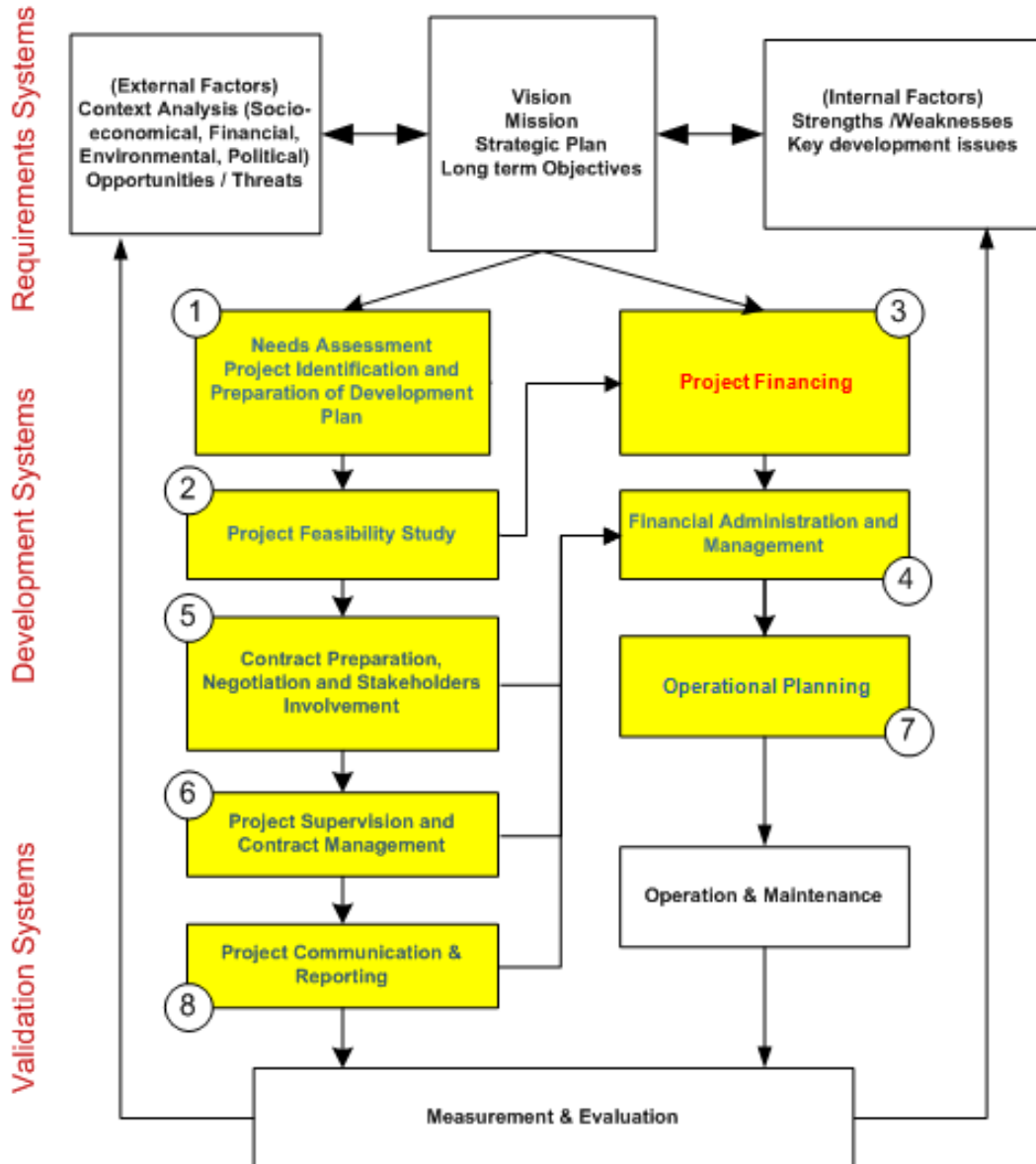


FIGURE A
GENERAL LAYOUT OF THE TRAINING TOPICS WITHIN THE FLOW-CHART MODEL OF THE STRATEGIC PLANNING AND MANAGEMENT SYSTEM

1 INTRODUCTION

In any firm, the management aim should be to prepare a realistic and coherent operational plan, based on agreed strategy, which makes best use of available resources towards the fulfillment of the organization's *mission*¹ and to ensure that this is cost-effectively realized. To do so, managers are often faced by important and/or conflicting choices regarding the financing of their operations as well as their investments to ensure a sustainable growth of their business. These choices are made even more difficult given the context of the financial crisis, such as the one that has begun in 2008 and led to the credit tightening around the world. In this context, firms have to turn to new financing instruments and sources, and increasingly, project financing is emerging as the preferred alternative to conventional methods of financing infrastructure and other worldwide large-scale projects.

This training manual covers the topic on Project Financing which is wide. The Request for Proposal calls for training on Financial Engineering in general, and on structure and processes of Project Financing, in comparison with alternative modes of finance, in particular. The training will also deal with identification and sharing of risks and benefits among the various stakeholders in Project Finance. The training will also cover the methodology for identifying the various sources of financing including their mode and conditions of financing, and provision of risk guarantee and hedging. The training will also provide the techniques for screening the various financing options in Project Finance and selecting the best source/mode of finance. Furthermore, the topic will deal with the preparation of financial contracts including business plan, contracts for cost/risk and benefit sharing, and contracts related to Public Private Partner Ship (PPP).

In an attempt to cover all the above mentioned topics, the manual will focus in providing decision-makers and managers with (i) an overall overview of Project Financing characteristics and basic features, (ii) the criteria on how to best structure limited or non recourse project financing, and (iii) an understanding of Project Finance key determinants that will guide the decision-makers and managers in making sound decisions. We expect also that the participants will gain some hands-on experience in analyzing the financing options based on a case study prepared for the purpose of this training only.

Training Objectives

Upon completion of this course, the participant will be able to perform the following:

1. Explain the difference between recourse financing and non recourse financing.
2. Use commonly accepted techniques to make investment decision.
3. Describe the principal model and arrangement of Project Finance, including PPP.
4. Describe the main features of SPV.
5. Understand the differences among the main financing sources and instruments.
6. Understand the relations in the benefits and risks allocation that must be agreed

¹ Properly crafted mission statements (1) serve as filters to separate what is important from what is not, (2) clearly state which markets will be served and how, and (3) communicate a sense of intended direction to the entire organization. A mission is different from a vision in that the former is the cause and the latter is the effect; a mission is something to be accomplished whereas a vision is something to be pursued for that accomplishment.



upon in PPP or with private investors.

Chapter 1 is the present introduction.

Chapter 2 provides an overview of the key notions in finance and provides the difference between finance as it is usually understood and Project Financing. The section provides also the tools (i.e. techniques) for carrying investment decisions, which are valid both in finance and Project Financing. The section deals also with an important concept that is the capital structure. Does the capital structure matter? If so, how and what are the financing conditions that would affect an investment decision?

Chapter 3 provides an overview, with an emphasis on PPP, of the different arrangements under which Project Finance is structured.

Chapter 4 provides an overview of the common financing sources and the conditions that usually apply to them. There is a wide range of financing instruments available in Project Financing and the conditions and terms usually differ from one project to another. There is no standard or one size fit all solution in contrast to corporate financing sources which are, to a significant extent, linked to the company creditworthiness or rating.

Chapter 5 provides a case study, which will consider the case of a major interconnection to be developed on a Project Finance by two project sponsors, one in country A and the other in country B. Should the project be developed under a publicly or a privately owned structure? Should the project be developed in country A or country B? Are there any financing differences between country A and country B that could impact the Project Financing? How changes in the capital structure or project financing conditions may affect the project bankability? The case study will also help understanding the importance of a Business Plan in presenting a bankable report and the series of decisions to be made when one is contemplating the development of a project under a Project Financing or PPP approach.

2 OVERVIEW OF BASIC FINANCE PRINCIPLES AND CONCEPT

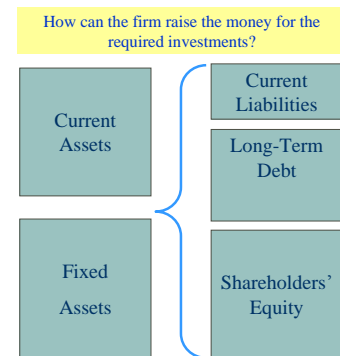
Before embarking on the analysis of the characteristics and features associated with project financial engineering, an overview of the definitions and basic concepts applied in finance are required.

2.1 CORPORATE FINANCE VERSUS PROJECT FINANCE

In corporate finance, financial decisions are broadly concerned with firm's acquisition and use of funds, and the financial managers have to make decisions with regard to the structure and composition of both the assets and liabilities. Thus, the financing decisions refer to capital structure (debt/equity), cost of debt and equity, terms and conditions associated to debt service obligations (interests and principal payment), debt restructuring or refinancing, and how to finance new investments.

The definition of an optimum capital structure, considering the different external sources of financing, is of importance to and at the heart of the managers' financial decisions which are made on a constant basis. In the long run, the firm must have a cash positive position to be isolated from ongoing concerns and generate value for its owners.

Financial decisions require a good understanding of firm's cash flow from the operations, investment and financing activities, and the firm's financial position. As illustrated on the side, the current and fixed assets (e.g. investments) are financed by the internal cash flow from operations, debts and capital injection by shareholders. Further to maximize the value to the firm, the fixed assets will be financed with debts with matching maturity or long term tenure while current assets will be financed with current liabilities.



Financial decisions have to be also made on how the firm could enhance its creditworthiness and profitability through revenue enhancement measures, operational cost reduction, and proper capital expenditure planning. These actions are accompanied or part of a series of management and operational decisions, which objectives are an improved use of existing assets, an increased productivity of the resources, and the efficient selection, financing, procurement and implementation of investment.

Box 1 below illustrates how Manitoba Hydro electric utility's financial decisions are integrated within its strategic plan to maximize the firm value. The above aspects are further discussed in a different training module.

In contrast, Project Finance is primarily concerned with stand alone investment decisions where innovative and carefully engineered financing mix are designed to fund large-scale projects such as airport, pipelines, refineries, thermal or hydro power plant, etc. The financial decisions pertaining to Project Finance calls upon a solid understanding of the project financing rationale, the preparation of sound business plan, the assessment of the risks and how they could be mitigated, the design of an adequate financing mix, and the ability to raise the funds on the sole merits of the project.



BOX 1: EXAMPLE OF CORPORATE STRATEGIC PLAN THAT REFLECTS FINANCIAL DECISION

Improve Corporate Financial Strength		A solid financial footing provides the foundation upon which Manitoba Hydro will continue to prosper. Achieving its financial targets will allow the Corporation to maintain its enviable record of low rates and high reliability.
Measure	Target	Strategies
Interest Coverage	> 1.20	<ul style="list-style-type: none"> ▪ Expand revenue from existing sources. ▪ Reduce debt and enhance equity. ▪ Develop debt management strategy. ▪ Complete achievement of synergies associated with Centra Gas integration. ▪ Review, confirm and optimize planning and operating criteria for bulk transmission and generation system. ▪ Optimize operating, maintenance & administration costs. ▪ Implement corporate E-business opportunities. ▪ Develop a definitive agreement to complete the Winnipeg Hydro purchase and integrate utility operations.
Debt/Equity Ratio	75/25 by the within 2 years	
Capital financing ratio	>1.0	
Cost per customer (OM&A) - Electric	\$600 per customer	
Cost per customer (OM&A) – Gas	\$175 per customer	

Source: Manitoba Hydro.

Project Finance decisions refer to large-size projects which are repaid from the cash-flow of that project, and most importantly, the project assets and revenues allow securing and servicing the debt obligations on its own. In contrast, the traditional way of project financing, often referred to as recourse financing or on balance sheet financing, corresponds to the projects funded from the firm’s balance sheet. In this case, the project financing is subjected to firm’s credit risk.

The development of a project under a Project Finance basis requires a knowledge-base in the design of contractual arrangements, in addition to a good understanding of the financing options that would be appropriate according to the different project structures, the financing instruments, and the accounting and tax consideration issues.

As will be explained in Section 3.3, the legislative framework of host government has to provide enabling conditions for the development of large infrastructures by the private sector. Alternately, it has to adopt amendments, or pass new legislation to enable, for instance, the creation of real property rights on assets built by private investors on public lands, the transfer of assets within the public domain to a private sector investor or operator, providing special tax incentive for attracting the private sector financing, etc.

2.2 TOOLS USED FOR MAKING INVESTMENT DECISION

The tools or techniques used for assessing the financial viability of a project are the same as those used for making investment decision. The following main tools will be described in the subsequent sections:

- Accounting rate of return;
- Net Present Value;
- Internal Rate of Return; and

- Equivalent Annuity.

Note that the Case Study N° 1 will provide a practical synthesis regarding the application of the above techniques.

Accounting rate of return

The accounting rate of return is based on accounting earnings and accounting rules. The main accounting ratios include: the rate of return on equity (ROE) which is the ratio of the net profits by the total equity; the return on investment (ROI), which is the ratio of the net profit by the total investment; and the return on assets (ROA), which is the net profits by the total assets. Economists consider that these ratios do not reflect the true return as they are based on accounting data that are not actualized (the rationale being a \$1 today is not worth \$1 in the future).

Hybrid methods, such as payback period and the benefit/cost ratio, are used as well. The payback period corresponds to the number of year of net profits to be earned in order to pay back for the total investment. The payback period is a useful measure when the revenues and operating expenses are not expected to vary significantly from year to year over the project's life. In other cases, the application of this method can be misleading and is not sufficiently generalized to be useful.

The Benefit/Cost ratio is given by the benefits (i.e. revenues from sales plus other revenues) divided by the total costs. If the ratio is equal or greater than one, the project is viable; otherwise it means that the benefits cannot cover the expenses.

Net Present Value

The Net Present Value (NPV) is the sum of all project cash flows (negative and positive) discounted over the considered study horizon.

The NPV decision rule is to accept all positive NPV projects in an unconstrained environment or, in the case of projects that are mutually exclusive, to accept the project with the highest NPV.

The NPV is greatly affected by the discount rate. The selection of the proper rate, sometimes called the hurdle rate, is of essence to the making of right investment decisions. The hurdle rate is the minimum acceptable return on an investment, and should reflect the risk-return relation associated with any investment.

The discount rate can be derived using models such as the Capital Asset Pricing Model (CAPM) or the Arbitrage Pricing Theory (APT), and it will be applied to each particular project. The Weighted Average Cost of Capital (WACC) is also a good proxy as it reflects the cost of financing mix (equity and debt). When using the firm's WACC to test an investment decision, it must be verified that project does not entail risk that are higher than those usually carried by the firm as a whole; otherwise a higher discount is recommended.



The discounted payback period is similar to the above definition, except that the number of year of discounted net profits to be earned in order to pay back for the net present value of the total investment. The same limitation as mentioned above applies.

Internal Rate of Return

The Internal Rate of return (IRR) is defined as the discount rate that gives a NPV of zero. The IRR measures the rate by which the future net revenues (i.e. revenues minus expenses) must be compounded to equate the initial negative cash flow investment associated with investment.

It is a commonly used measure of investment efficiency. The IRR method usually leads to the same decision as the NPV method in the case of non-mutually exclusive projects and provided that there is no constraint. It is usually the case for project with negative cash flows at the start and then followed by all positive cash flows. In some cases, several zero NPV discount rates may exist, so there is no unique IRR. The IRR exists and is unique if one or more years of net investment (negative cash flow) are followed by years of net revenues. But if the signs of the cash flows change more than once, there may be several IRRs. The IRR equation is generally solved via iterations.

The IRR method is often confused with the actual annual profitability of an investment. This is only possible when intermediate cash flows are almost reinvested at the project's IRR; this is usually not the case and thus the actual rate of return is almost certainly going to be lower.

For an independent project (i.e. when the decision of one project is not subjected to the decision on different project), if its IRR is higher than the hurdle rate, it should be accepted.

Example: IRR:

t	0	1	2	3	4	5	6
A	-9	+6	+5	+4	0	
B	-9	1.8	1.8	1.8	1.8	

IRR_A = 33%; IRR_B = 20%

Which project to choose, A or B ?

For: 0 < r < 15,6%, A < B
For: r > 15.6, A > B

Accept project when cost of capital is less than IRR

$$-I_0 + \frac{C_1}{(1+IRR)} + \dots + \frac{C_n}{(1+IRR)^n} = 0$$

For mutually exclusive projects, the decision rule of selecting the project with the highest IRR does not necessarily lead to the optimum solution. In the figure below, two mutually exclusive projects, A and B, are compared. Depending on the hurdle rate, the Project B may have a higher NPV

compared to Project A, which has the highest IRR. Thus, in the case of mutually exclusive project it is important to look at both the NPV and IRR.

In general, the IRR is compared with a pre-determined hurdle rate to determine whether or not the project is financially acceptable for the firm or its sponsors.

There is a difference between the IRR of a firm/project and the IRR on equity (EIRR) even though they are somewhat similar. The firm IRR is derived from the free cash flow, i.e. the cash flow available before serving the debt. The IRR on equity is based on firm/project's return calculated only on the equity portion of the investment. The principal and interest payments on the loans are treated like the other expenses from the equity shareholders point of view. This is a very important measure for firm/project where the equity is 100 % private. In firm/project where the host government participates to equity, the criteria of EIRR may be considered as irrelevant.

Where the Weighted Average Cost of Capital (WACC) can be derived easily, it will be used as the hurdle rate. For instance if the firm/project's IRR is higher than the WACC, then the project makes sense financially.

A firm could consider many investments/projects potentially rewarding in financial terms. If a particular project has exceeded the hurdle rate, it should be then ranked against peer projects (e.g. – from highest profitability index to lowest profitability index). The highest ranking projects should be implemented until the firm's capital budget is expended.

Despite an academic preference for NPV, surveys indicate that executives prefer IRR over NPV, although they should be used in concert. In a budget-constrained environment, revenue enhancement measures, operational cost reduction and proper capital expenditure planning as mentioned above should be implemented to maximize the firm's overall NPV. Some managers find it intuitively more appealing to evaluate investments/projects in terms of percentage rates of return than dollars of NPV.

Equivalent Annuity method

The equivalent annuity method expresses the NPV as an annualized cash flow by dividing it by the present value of the annuity factor. It is known as the equivalent annual cost (EAC) which is the cost per year for owning and operating an asset over its entire lifespan. This method is often used to assess projects with the same revenue cash flow stream but different cost cash flow stream.

This is also a method used for the comparison of the projects with different lifetimes. For example, if project A has an expected lifetime of 3 years and project B an expected lifetime of 4 years, it would be improper to simply compare the net present values (NPVs) of the two projects. The use of the EAC method implies that the project will be replaced by an identical project.

To compare the above projects with unequal lifespan years, the projects could be simply repeated, i.e. four repetitions of the 3 years project and three for 4 years project. This method and the EAC method give mathematically equivalent answers. This is true provided an assumption of zero inflation.



Project economic versus Project financial appraisal

While techniques used to analyze investment decision apply invariably to either economic or financial project appraisal, a distinction has to be made between the two types of project appraisal.

Investment/project economical appraisal is often a prerequisite of the host government for approving the project implementation or in some cases as a condition precedent to delivery of authorizations or environmental clearance certificate. Further, where the host government may be required to provide a letter of comfort, sovereign or specific guarantee, subsidy or equity for the development of project or in the cases of project which activities remain within the public domain (ex. airport, hospital, etc.), the project must be justified from the societal point of view.

A project economic NPV is derived from the discounted project net revenues (i.e. revenues and other benefits minus the investment and O&M). However, the cash flows must be adjusted by deducting customs and import duty taxes, VAT and other taxes as well as government subsidies that distort the economic value of the project.

2.3 OPTIMUM CAPITAL STRUCTURE?

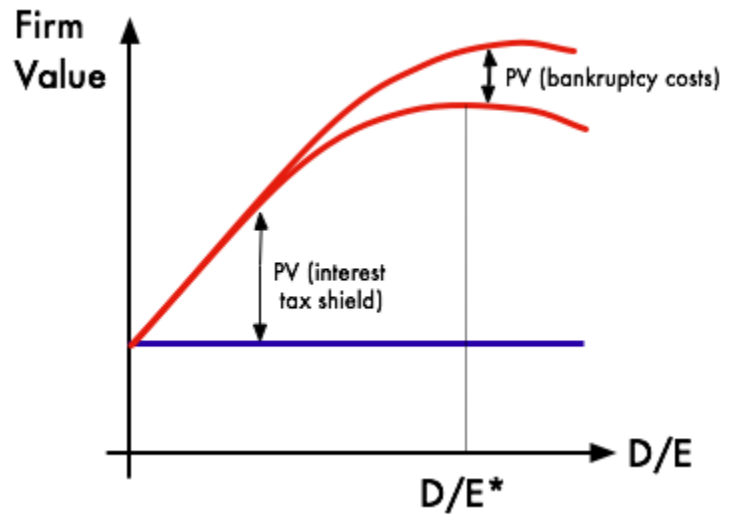
As mentioned above, the financial managers have to make decision on the optimum allocation of debt and equity. How such decision is made and is there a rule that can be applied for deriving the optimum allocation of the debt and capital?

The Modigliani-Miller theorem forms the basis for modern thinking on capital structure. As provided in Box 2, the theorem states that, in absence of taxes, bankruptcy costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed. It does not matter if the firm's capital is raised by issuing stock or selling debt.

However, in practice, the firms try to take maximum advantage of the tax 'benefits' of debt. In fact from a tax perspective, it is cheaper for firms to finance their investments with debt rather than with equity. Under most of the taxation systems around the world, firms are subjected to taxes on their earnings and individuals on their personal income. For example, a firm that earns \$1000 dollars in profits would have to pay around \$300 dollars in taxes in the US. If the firm then distributes these profits to its shareholders as dividends, then these shareholders in turn pay taxes on this income, say \$200 on the \$700 dollars of dividends. The \$1000 dollars of profits turned into \$500 dollars of investor income. If, instead the firm's investment is financed with debt, then, assuming the firm owes \$1000 dollars of interest to investors, its profits are now 0. Investors now pay taxes on their interest income, say \$300 dollars. This implies for \$1000 dollars of profits before taxes, investors got \$700 dollars. Hence, intuitively the debt has to be maximized.

The empirical relevance of the Trade-Off Theory has often been questioned by other economists. While taxes are large and known, bankruptcy is rare and it has low dead-weight costs. Miller suggested that if the Trade-Off Theory was true, then firms ought to have much higher debt levels than we observe in reality.

However, as the debt to equity ratio (D/E) increases, there is a trade-off between the interest tax shield and bankruptcy, causing an optimum capital structure. The trade-off theory of capital structure states that firms choose how much debt and equity (D/E*) to have by balancing the costs and benefits, i.e. the dead-weight costs of bankruptcy (plus the agency cost) versus the tax saving benefits of debt.



The tax benefit to financing with debt comes at the costs of financial distress including bankruptcy costs of debt plus the agency costs associated (e.g. staff turnover, suppliers demanding disadvantageous payment terms, etc). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing.

BOX 2: MODIGLIANI-MILLER THEOREM, adapted from Wikipedia, the free encyclopedia

The Modigliani-Miller theorem forms the basis for modern thinking on capital structure. The theorem states that, under a certain market price process (the classical random walk), in the absence of taxes, bankruptcy costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed. It does not matter if the firm's capital is raised by issuing stock or selling debt. It does not matter what the firm's dividend policy is. Therefore, the Modigliani-Miller theorem is also often called the capital structure irrelevance principle. The theorem proven under the assumption of no taxes can also be extended to a situation *with* taxes. Consider two firms which are identical except for their financial structures. The first (Firm U) is unlevered: that is, it is financed by equity only. The other (Firm L) is levered (or geared): it is financed partly by equity, and partly by debt. The Modigliani-Miller theorem states that the value of the two firms is the same.

Without taxes

Proposition I: $V_U = V_L$ where V_U is the value of an unlevered firm; i.e. price of buying a firm composed only of equity, and V_L is the value of a levered firm, i.e. price of buying a firm that is composed of mix of debt and equity.

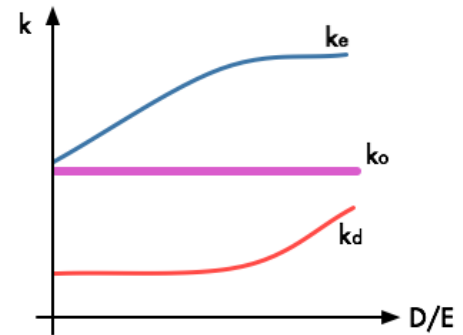
Suppose an investor is considering buying one of the two firms U or L. Instead of purchasing the shares of the levered firm L, he could purchase the shares of firm U and borrow the same amount of money B that firm L does. The eventual returns to either of these investments would be the same. Therefore the price of L must be the same as the price of U minus the money borrowed B, which is the value of L's debt. It is implicitly assumed that the investor's cost of borrowing money is the same as that of the firm, which need not be true in the presence of asymmetric information or in the absence of efficient markets.

$$k_e = k_0 + \frac{D}{E} (k_0 - k_d)$$

Proposition II:

- k_e is the required rate of return on equity, or cost of equity.
- k_0 is the cost of capital for an all equity firm.
- k_d is the required rate of return on borrowings, or cost of debt.
- D / E is the debt-to-equity ratio.

As the leverage (D/E) increases, the weighted average cost of capital (WACC), k_0 , stays constant. The formula is derived from the theory of WACC and assuming the following assumptions: no taxes and transaction costs exist.



These results might seem irrelevant since none of the conditions is met in the real world), but it tells something very important: capital structure matters precisely because one or more of these assumptions is violated. It tells where to look for determinants of optimal capital structure and how those factors might affect optimal capital structure.

With taxes

$$\text{Proposition I: } V_L = V_U + T_C D$$

- V_L is the value of a levered firm.
- V_U is the value of an unlevered firm.
- $T_C D$ is the tax rate (T_C) x the value of debt (D) (assuming the debt is perpetual)

The advantage for firm to be levered is that it can deduct interest payments.

$$\text{Proposition II: } r_E = r_0 + \frac{D}{E} (r_0 - r_D) (1 - T_C)$$

- r_E is the required rate of return on equity, or cost of equity.
- r_0 is the cost of capital for an all equity firm.
- r_D is the required rate of return on borrowings, or cost of debt.
- D / E is the debt-to-equity ratio.
- T_c is the tax rate.

The cost of equity rises with leverage, but there is a difference with the above WACC method. As the level of gearing increases by replacing equity with cheap debt the level of the WACC drops and an optimal capital structure does indeed exist at a point where debt is 100%! Hence, the theorem can be used to justify near limitless financial leverage while not properly accounting for the increased risk, especially bankruptcy risk that excessive leverage ratios bring.

Since the value of the theorem primarily lies in understanding the violation of the assumptions in practice, rather than the result itself, its application should be focused on understanding the implications that the relaxation of those assumptions bring.

3 PROJECT FINANCE STRUCTURE AND ARRANGEMENTS: CASE OF PPP²

3.1 INTRODUCTION

Project Finance has gained popularity in energy, power, communication, transport and water sectors. Reasons for this growing interest include:

- Availability of additional resources to meet the increasing needs of investment in infrastructure services;
- Increased efficiency in project delivery and operation;
- Access to advanced technology;
- In line with sustainable development.

Project Finance is attractive as an off-budget mechanism for infrastructure development as this arrangement may not require any immediate cash spending. Other advantages include the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation.

In the case of PPP arrangement, each partner, usually through legally binding contract(s) or some other mechanism, agrees to share responsibilities related to implementation and/or operation and management of a project. This collaboration or partnership is built on the expertise of each partner that meets clearly defined public needs through appropriate allocation of resources, risks, rewards, and responsibilities. The allocations of these elements and other aspects of PPP projects such as, details of implementation, termination, obligations, dispute resolution and payment arrangements are negotiated between the parties involved and are documented in written contract agreement(s) signed by them.

Although Project Finance or PPPs look very appealing to government, they may give rise to underlying fiscal costs and contingent liabilities to government in the medium and long term. Besides, there are many important economic, social, political, legal, and administrative aspects which need to be carefully assessed before approval of Project Finance or PPPs are given by the government. Other limitations should be taken into account also:

- Not all projects are possible (for various reasons: political, legal, financial etc);
- The private sector may not take interest or may lack the capacity to undertake a project;
- A PPP project may be more costly unless additional costs (due to higher transaction and financing costs) are off-set by efficiency gains;
- Change of ownership to the private sector per se may not be sufficient to improve economic performance unless other necessary conditions are met, which include appropriate sector and market reform, and change in operational and management practices of infrastructure operation;

² The present section provides a summary of the paper prepared for the High-Level Expert Group meeting jointly organized by UNESCAP and the Ministry of Planning, Budget, Republic of Korea, 2-4 October 2007, Seoul, on "Public-Private Partnerships in Infrastructure Development: An Introduction to issues from different perspectives".



- The success often depends on regulatory efficiency.

Nevertheless, considering the advantages of PPPs, governments in most countries are now seeing them as an attractive off-budget mechanism for delivering infrastructure services and have promoted PPPs as a part of their overall strategy.

3.2 ENABLING FACTORS TO PROJECT FINANCE AND PPP

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

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

Legislation may also play an important role in facilitating the issuance of various licenses and permits that may be required for project implementation. The special legal instruments may specify the types of permitted PPP models, general conditions for these models, guidelines on risk sharing arrangements, provision of financial and other incentives, and may provide details of project identification, approval, procurement (including contract negotiation and making contract agreement), and implementation arrangements. The legal instruments may also define division of responsibility between different levels of government. In some countries, special units in governments have been established under the provisions of such special legal instruments (see <http://www.ucp-gabon.org/>; <http://www.investinsenegal.com/comment.html>).

Further, depending on the administrative system in a country, the implementation of PPP projects may require the involvement of several public authorities at various levels of government. Sometimes, different administration functions are combined in one authority. This arrangement is usually common in the early years of private participation in a sector. The authority to award PPP contracts and approve contract agreements is generally centralized in a separate public authority. This may be a special body for this purpose and is usually at the ministerial or council of ministers level.

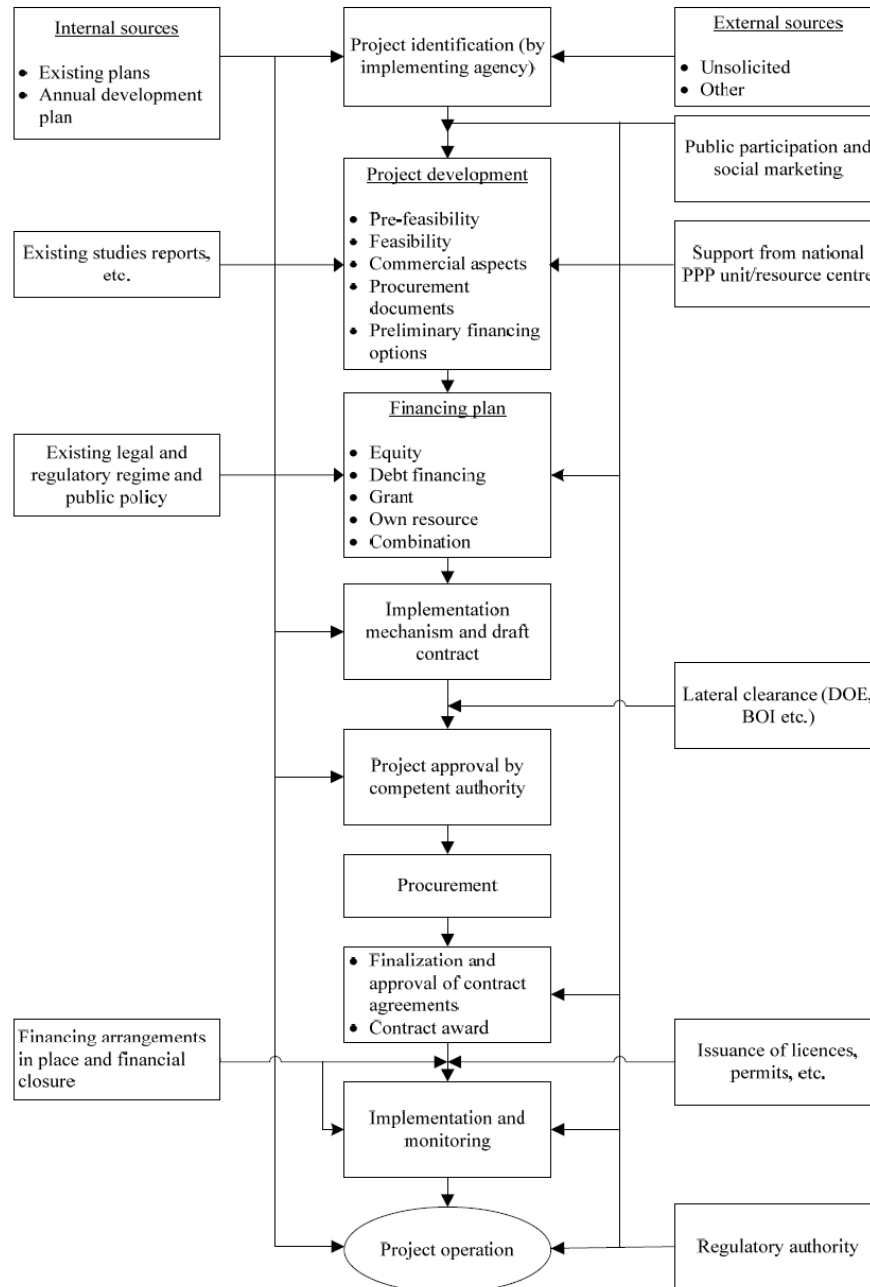
The legal instruments and/or government rules and guidelines define how the sectoral agencies and local governments may initiate, develop, submit for approval of the national/provincial government, procure, negotiate and make deal with the private sector, and finally implement a



project. These legal instruments may also define the authority and responsibilities concerning PPPs at different levels or tiers of government.

The follow diagram shows the steps that are generally considered in Project Finance and PPP projects implementation process.

Figure 1: Project Finance and PPP Projects Implementation Process



Notes: DOE = Department of Environment; BOI = Board of Investment

Clear definitions and procedures of various tasks and administrative approval from competent authorities at different stages of project implementation process are necessary in running a

successful PPP programme. Streamlined administrative procedures reduce uncertainties at different stages of project development and approval and help to reduce the transaction cost⁵ of a PPP project.

The success of PPP projects also depends on a strong public sector which has the ability to identify, negotiate, procure, and manage suitable projects through a transparent process. However, the knowledge and the necessary skills that are required in development, financing and management of PPP projects are often lacking in the public sector. One means of developing the knowledge and skills has been the creation within governments of dedicated Public-Private Partnership Units or launching of special PPP programmes with similar objectives.

Another important issue in project implementation is administrative coordination. Generally, multiple agencies are involved in project implementation. Issuance of licenses and permits may also need action of many government agencies, often at different levels of government. An institutional mechanism may be required to be established for the coordination of actions by the concerned agencies involved in project implementation as well as for issuing of necessary approvals, licenses, permits or authorizations in accordance with the legal and regulatory provisions.

3.3 IMPORTANT ROLE OF THE GOVERNMENT

A successful PPP program requires the involvement of the government to address legal, social, economic, political and administrative issues. Economic, financial and legal reforms may be needed to foster private participation. Thus, the government has a key role in initiating reform, planning, policy formulation and regulatory matters. In this regard, the major responsibilities of the government are discussed in the following sections.

Formulation of a PPP policy framework

Formulation of a clear policy framework removes ambiguities and uncertainties about government's intention to PPP development. Such a framework may cover the following:

- Common matters to all PPPs such as objectives, principles and general policy issues;
- Issues specific to each sector;
- Social objectives, which can be incorporated in the policy framework as well as in legal and regulatory regimes.

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



Creation of an enabling environment

The creation of a PPP-enabling environment is one of the main responsibilities of the government. The latter must take into consideration the following issues:

- Deficiencies of regulatory and legislative frameworks. Sometimes, the existing regulatory environment may be conservative and too restrictive and may not be favorable for undertaking PPPs;
- Imperfections in market and sector structure, including lacking of market regulations, leading to monopoly and sector inefficiencies. The latter are major deterrent to PPPs;
- Prevailing unfavorable general perception and understanding about PPP;
- Lacking of clear policies on the role of private and public sectors.

In order to address these issues, governments may consider enacting new legislations or suitably amending the existing ones and liberalizing the market.

Establishment of an administrative mechanism

The establishment of an administrative mechanism is to overcome the administrative difficulties faced by the bureaucracy. It involves the formulation of rules and clear guidelines that define the administrative process of project implementation. Establishment of procedures for various tasks and administrative approval from competent authorities at different stages of project implementation process are also necessary in running a successful PPP program. Streamlined administrative procedures reduce uncertainties at different stages of project development and approval and enhance investors' confidence in a PPP program.

Promotion of good governance

Another major responsibility of the government is to promote good governance base on certain generally accepted core principles, including accountability, transparency, fairness, efficiency, participation, and decency. Thus good governance in PPPs would require the following:

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

Addressing the social and political concern

One of the major social and political concerns of a PPP project is to address the question of project benefits to all sections of society. To do so, the government may consider the following options:

- Policies and regulations guaranteeing equitable distribution of benefits
- Providing support to pro-poor PPP projects;
- Promotion of pro-poor PPP projects through incentives and technical assistance.

There is also a general belief that involvement of the private sector results in higher prices, fewer jobs, and that the profit motivation of the private sector may not be in line with the social objectives of a country. There may also be lack of political will and many governments may not be very supportive of the PPP concept. If PPP programs in a country are to succeed, these issues need to be addressed by the government.

Capacity-building of the public sector

Bureaucracy often misunderstands the concept of PPP due to lack of capacity and clearly defined rules and regulations. The government needs to consider suitable capacity-building programmes in developing necessary skills of its officials involved in PPP project development and implementation. Skills of a diverse nature, from project identification, economic and financial evaluation, to risk analysis to contract document preparation to procurement to contract negotiation.

The government may also wish to offer incentives for the use of certain fuels, the use of certain technology, to encourage development of projects of a certain size, or of projects located in certain geographic locations. This can be done, generally, by providing tax credits or exemptions for projects meeting the criteria specified in the regulations. Alternatively, the government may choose to negotiate incentives or concessions individually with each developer and include them in the implementation agreement. This latter approach may provide more flexibility in the early stages of policy formation. At the same time, this approach is more demanding on the government and is less conducive to the development of a healthy and competitive independent power industry.

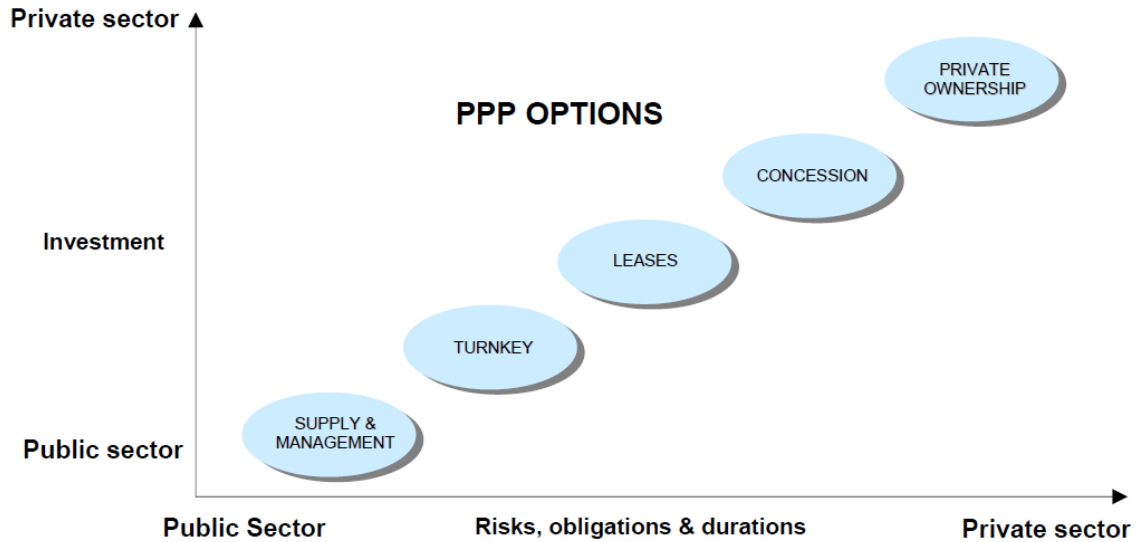
While successful private sector participation requires the involvement of the government, this comes at a cost to government as discussed in section 3.6 below.

3.4 PUBLIC-PRIVATE PARTNERSHIP MODELS

With the increasing interest in Project Finance and PPP, a wide range of models has emerged to support private sector participation in infrastructure development. The models vary from short-term simple management contracts (with or without investment requirements) to long-term and very complex BOT form, to divestiture. These models vary mainly by: ownership of capital assets; responsibility for investment; assumption of risks; and duration of contract.

Some basic models are illustrated in the following diagram. Each of these models has its own pros and cons and can be suitable to achieve some of the objectives of private participation. The diagram shows individual model, but hybrid models are also possible.

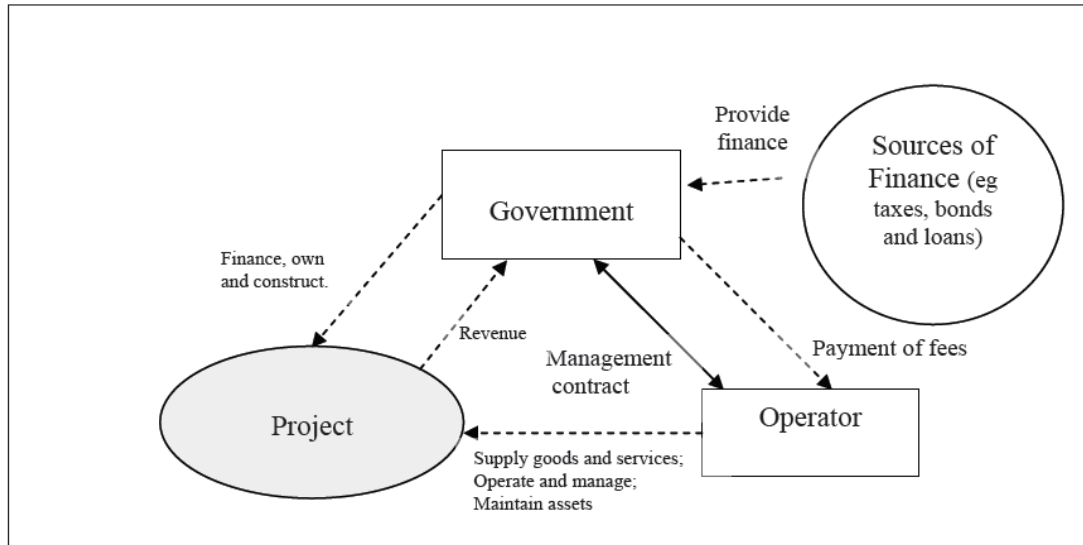
Figure 1: Hierarchy of Models in Project Finance and PPP



Supply/Management Contract

A management contract is a contractual arrangement for the management of a public enterprise by the private sector. Management contracts allow private sector to bring in their skills for infrastructure services, but the public sector retains the ownership of any facility and equipment. The private sector is provided specified responsibilities concerning a service and is generally not asked to assume commercial risk. The private contractor is paid a fee to manage and operate services. Normally, payment of such fees is performance-based and the contract period is short, typically two to five years. The diagram below shows a typical structure of a management contract.

Figure 2: Management Contract



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



Advantages

- Can be implemented in a short time;
- Least complex of all the broad categories of PPPs;
- In some countries, politically and socially more acceptable for certain projects.



Inconveniences

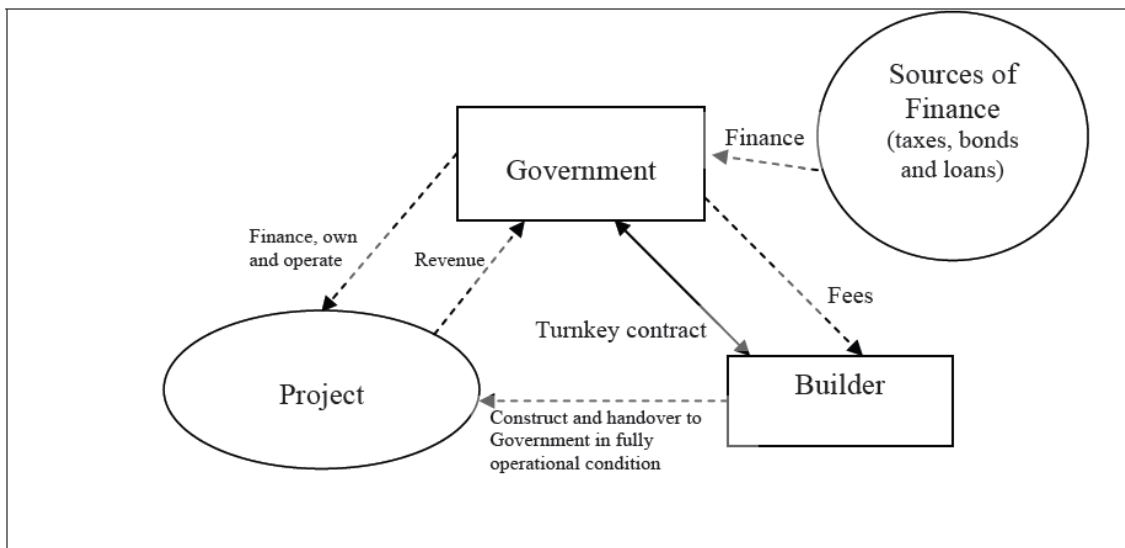
- Efficiency gains may be limited and little incentive for the private sector to invest;
- Almost all risks are borne by the public sector;
- Applicable mainly to existing infrastructure assets.

Variant of the management contract include: Supply or service contract; Maintenance management; Operational management.

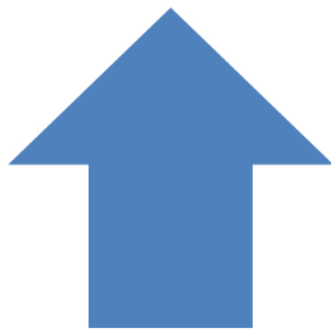
Turnkey

Turnkey is a traditional public sector procurement model for infrastructure facilities. Generally, a private contractor is selected through a bidding process. A private contractor is selected, through a bidding process, to designs and builds a facility for a lump sum. The contractor assumes risks involved in the design and construction phases. The scale of investment by the private sector is generally low and for a short-term. In this type of arrangement there is no strong incentive for early completion of a project. A typically turnkey structure is presented below:

Figure 3: Typical Turnkey Structure



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



Advantages

- Well understood traditional model;
- Contract agreement is not complex;
- Generally contract enforcement is not a major issue.



Inconveniences

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

Lease/Affermage

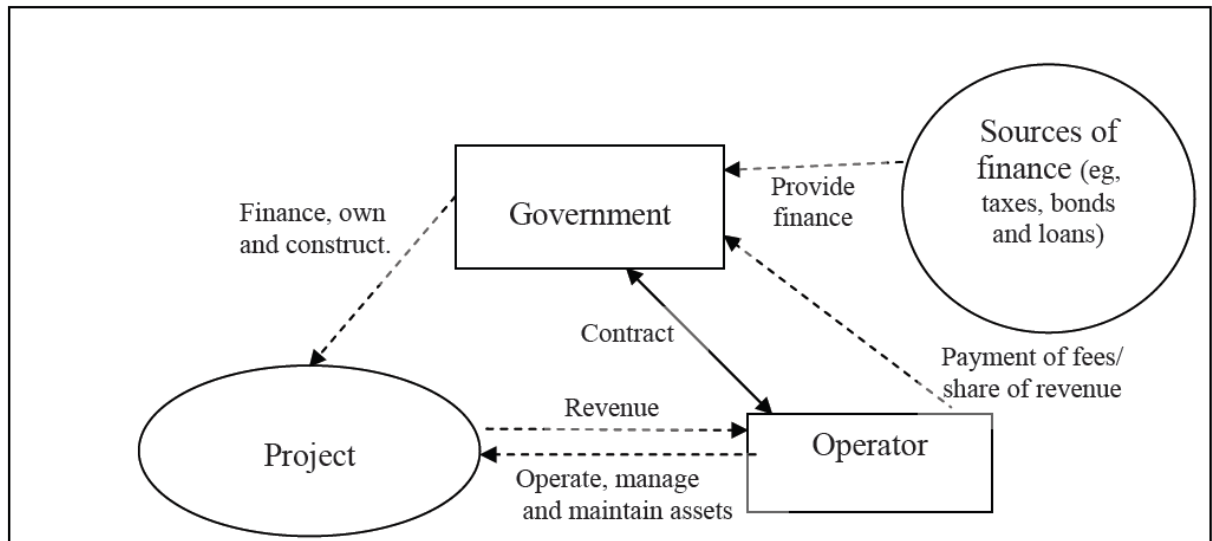
In the lease model, an operator (the leaseholder) is responsible for operating and maintaining the infrastructure facility and services, but generally the operator is not required to make any large investment. This model is often applied in combination with other models such as build-rehabilitate-operate-transfer. In such a case, the contract period is generally much longer and the private sector is required to make a significant level of investment.

The affermage model is very similar to the lease model. Under a lease, the operator pay a lease fee to the contracting authority, but he can retain revenue collected from customers/users; whereas under an affermage, the operator and the contracting authority share revenue from customers/users.

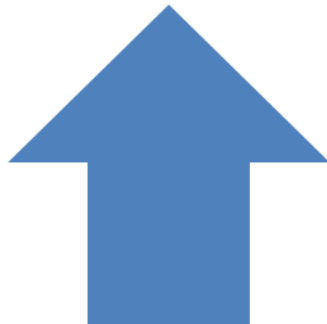
In the lease/affermage model, the operator takes lease of both infrastructure and equipment from the government for an agreed period of time. Generally, the governments are responsible for any investments and the derived risks. The operator is only responsible of risks from operations. A lease usually last for period of 8 to 30 years.

A typically lease/affermage structure is presented below:

Figure 4: Lease/Affermage Structure



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



Advantages

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



Inconveniences

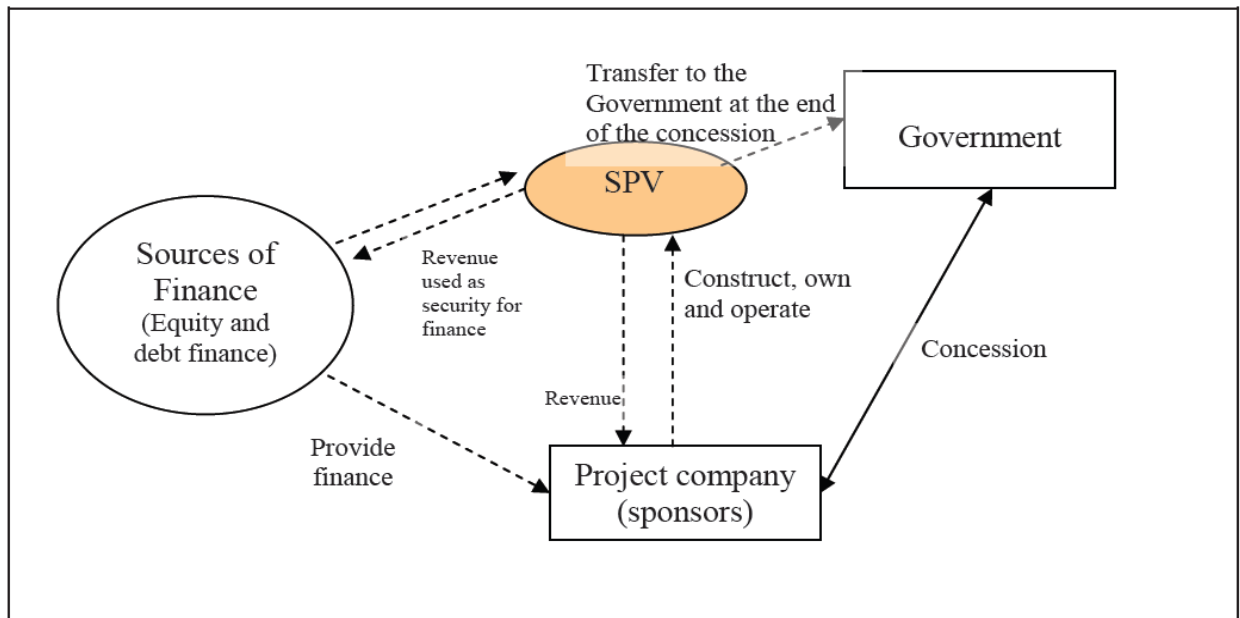
- Has little incentive for the private sector to invest;
- Almost all risks are borne by the public sector;
- Generally used for existing infrastructure assets;
- Considerable regulatory oversight may be required.

Concession

In the concession model, governments define and grant specific rights to an entity (usually a private company) to build and operate a facility for a fixed period of time. Governments may retain the ultimate ownership of the facility and/or the right to supply the services. In

concessions, payments can take place both ways: concessionaire pays to government for the concession rights and the government may also pay the concessionaire, which it provides under the agreement to meet certain specific conditions. Usually such payments by government may be necessary to make projects commercially viable and/or reduce the level of commercial risk taken by the private sector, particularly in the initial years of a PPP programme in a country when the private sector may not have enough confidence in undertaking such a commercial venture. Typical concession periods range between 5 to 50 years. A typically concession structure is presented below:

Figure 5: Concession Structure



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



Advantages

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



Inconveniences

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

Variances of the concession model include:

- Franchise;
- Build-Operate-Transfer (BOT).

Franchise

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

Build-Operate-Transfer

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

ownership, the government controls policy and can allocate risks to those parties best suited to bear them or remove them.

In a BOT concession, often the concessionaire may be required to establish a special purpose vehicle (SPV) as discussed in the next section for implementing and operating the project. The SPV may be formed as a joint venture company with equity participation from multiple private sector parties and the public sector. In addition to equity participation, the government may also provide capital grants or other financial incentives to a BOT project.

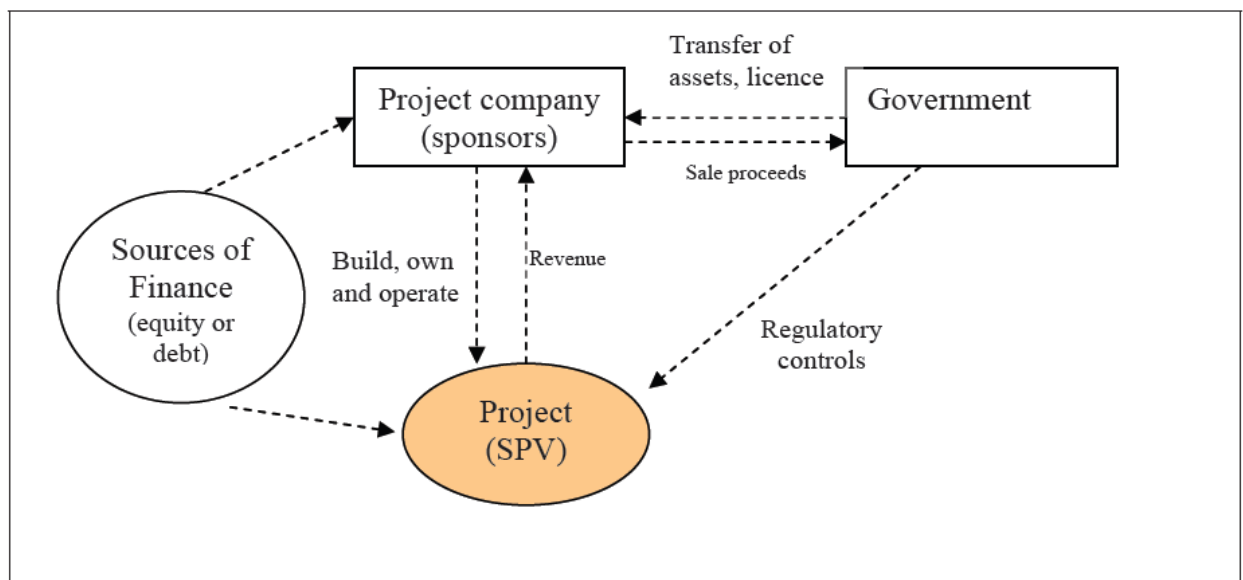
Private Ownership

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

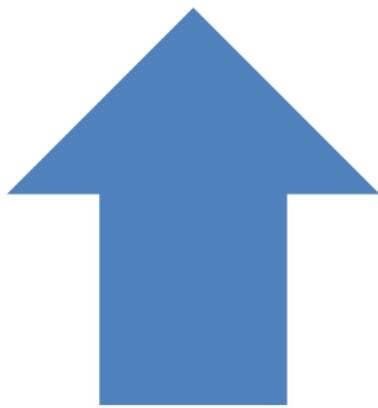
As the same entity is responsible of everything and is only paid for the completion of services at a pre-defined standard, it has no incentive to reduce the quality or quantity of services. Compared with the traditional public sector procurement model, where design, construction and operation aspects are usually separated, this form of contractual agreement reduces the risks of cost overruns during the design and construction phases or of choosing an inefficient technology, since the operator's future earnings depend on controlling costs. The public sector's main advantages lie in the relief from bearing the costs of design and construction, the transfer of certain risks to the private sector and the promise of better project design, construction and operation.

A typically private ownership structure is presented below:

Figure 6: Private Ownership Structure

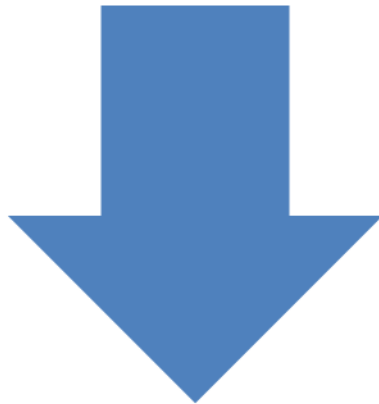


The main pros and cons of this model are summarized as follows:



Advantages

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



Inconveniences

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

In the subsequent sections, various variance of private ownership model are presented.

Build-Own-Operate

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

Private Finance Initiative

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



Divestiture

In this third type of private ownership, private entity buys an equity stake in a state-owned enterprise. However, the private stake may or may not imply private management of the enterprise. True privatization, however, involves a transfer of deed of title from the public sector to a private undertaking. This may be done either through outright sale or through public floatation of shares of a previously corporatized state enterprise.

Comparison of Models

In this section, PPP basic models are compared regarding the ownership of assets, responsibility of investment, assumption of risk and duration. Each model has its own pros and cons and can be suitable to achieve some of the objectives of private participation. When selecting a model, the special characteristics of some sectors and their technological development, legal and regulatory regimes, and public and political perception about the services in a sector need to be taken into consideration. Governments have multiple objectives from private sector participation; this is also summarized in the same table summarize. A fair rate of return is needed for private sector to recover its investments over a period. To reach this objective, some conditions are required as provided in the table.



Figure 7: Comparison of Basic Models for Project Finance and PPPs

Model	Responsibilities				Government Objectives					Conditions for fair Rate of Return for PPP			
	Asset Ownership	Responsibility of Investment	Assumption of Risk	Duration	Technical Expertise	Management Expertise	Operating Efficiency	Investment in Bulk	Investment in Distribution	Political Commitment	Cost-Covering Tariffs	Regulatory Framework	Good Information
Supply/Management Contract	Public	Public	Public	3-5 years	Yes	No/Yes	No/Some	No	No	Low/Moderate	Low/Moderate	Low/Moderate	Low
Lease; Turnkey	Public	Public	Shared	8-15 years	Yes	Yes	Yes	No	No	Moderate	High	High	High
Concession	Shared	Shared	Shared	25-30 years	No	No	No	No	No	High	High	High	High
Private Ownership (BOO)	Private	Private	Private	Indefinite	Yes	Some	Some	Yes	No	Moderate	High	High	High

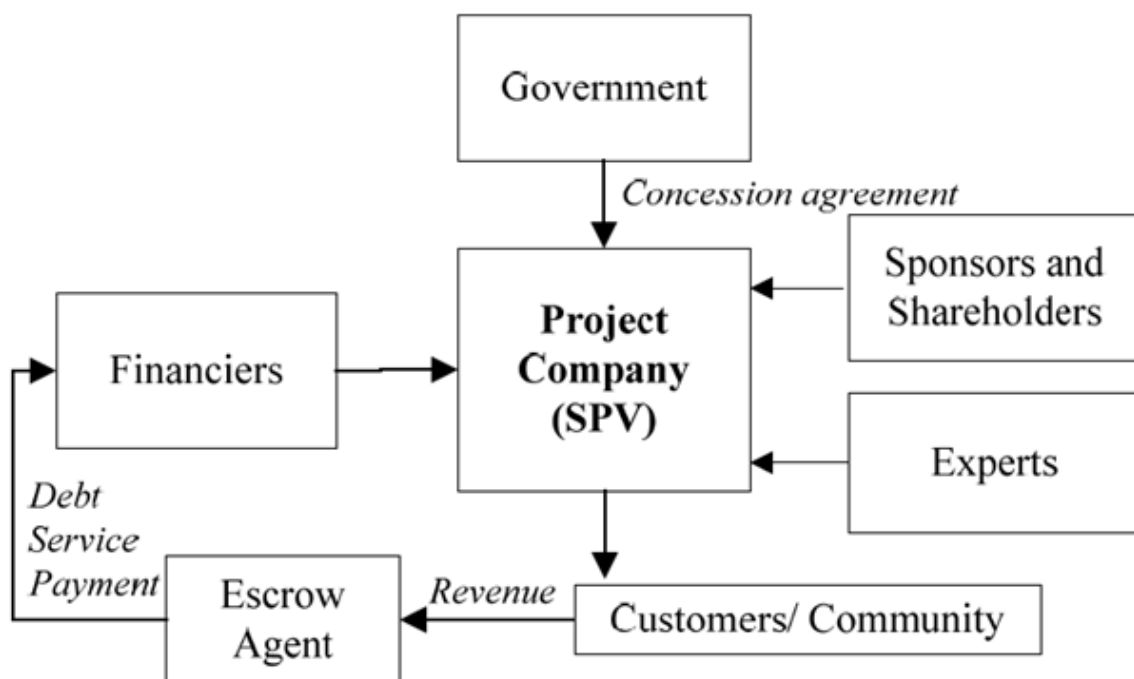
3.5 SPECIAL PURPOSE VEHICLE PROJECT

Project Finance structure can be quite complex involving contractual arrangements between several parties. In general, the creation of a separate commercial venture called a Special Purpose/Project Vehicle (SPV) is a key feature of most Project Finance or PPPs.

The SPV is a legal entity that undertakes a project and all contractual agreements between various parties are negotiated between themselves and the SPV. SPVs are also a preferred mode of project implementation under limited or non-recourse financing basis, where the lenders rely on the project's cash flow and security over its assets as the only means to repay debts.

The following diagram shows the basic form of the SPV with a revenue security mechanism through an escrow account.

Figure 8: Typical PPP Structure



The SPV is usually set by the private concessionaire/sponsor(s). The latter contributes to the long-term equity capital and agrees to lead the project in exchange for ownership, represented as shares, in the SPV. The Government may also contribute to the long-term equity capital of the SPV in exchange for shares. In such a case, the SPV is established as a joint venture company between the public and private sectors and the Government acquires equal rights and equivalent interests to the assets within the SPV as other private sector shareholders.

This type of SPV is interesting for governments who want to ensure a continued interest (with or without controlling authority) in management and operations of infrastructure assets. Then

depending on government policy, the private sector company may or may not be allowed to hold the majority stake in a joint venture.

In a Project Finance, the SPV will undertake a number of contracts and agreements as required for the project development, such as the following:

Concession Agreements

- This is the agreement or agreements that permit the developer to proceed with his project.

Sales/Purchase Agreement

- This is a key agreement and is between the project company and the utility or the purchaser of the electricity. This agreement sets out the terms, the selling price, and the life of the contract.

O & M Agreement

- This is the agreement between the project company and the operator of the plant. In cases where the operator is the project company, an operating agreement is not required.

Construction Contract/Agreement

- This is the agreement between the contractor and the project company.

Fuel Supply Agreement

- In the case of thermal projects there will typically be a fuel supply agreement in order to ensure reliability of supplies, and price stability. There must be a linkage between the agreements for fuel pricing and the power sales agreements.

Construction Financing

- A construction financing agreement is required between the lenders and the project company to provide funding during construction.

Term Financing

- Term financing can vary from 5 to 20 years with interest rate both fixed and variable. Longer terms will have interest rates that are both higher or can be adjusted periodically to reflect changes in interest rate. This interest rate will be set a number of percentage points above the prime interest rate.

3.6 PROJECT FINANCE AND PPP BENEFITS VERSUS RISK SHARING

The governments often have adopted policies aimed at attracting the private sector participation and/or the private sector may seek certain concessions, incentives and guarantees from the government. Certain concessions and guarantees may be necessary to create favourable economic conditions for the project (including lower rates to consumers) and to enable developers to attract lenders for the project's debt financing. These arrangements will be typically formulated in an implementation agreement between the government and the developer. In absence of such incentive, higher return on invested capital due to the perceived higher risk would be expected.

In counterparty to above concession the governments expect that the private sector participation will translate into benefits; this is key question in the minds of top policy makers. Access to additional resources for the implementation of much needed infrastructure projects remains to be the chief reason behind going for PPPs. Lack of funding from the traditional sources and relief of the public sector from bearing certain costs, or interest of the private sector should not be the sole criteria in considering implementation of an infrastructure project through the PPP mechanism. In addition to the above government's concessions, there are additional costs of having recourse to the private sector – usually the cost of borrowing money is higher for the private sector than for the public sector and there are administrative costs for the management of PPP contractual regimes.

As shown in the case study, the transaction costs of PPP projects can also be substantial. It may take a long time to make a PPP project deal, which also has consequences on overall project costs.

Besides usual responsibilities concerning regulatory and legal affairs and in policy and administrative matters, the government involvement may be through assets ownership, equity participation, risk sharing and provision of various incentives including loan guarantees for sub-sovereign and non-sovereign borrowings. These types of involvements require the government to bear explicit direct and contingent liabilities.

To induce certain behaviour on the part of the private sector, government may provide incentives to encourage the use of domestically-produced machinery or fuel or locally-hired labour. The government may also carry the following risks in order to attract the private sector:

- Certain events of force majeure;
- Changes in laws, regulations, taxes and duties;
- Inflation and exchange rate fluctuations;
- Guarantee of currency convertibility;
- Expropriation and other types of political risk; and
- Guarantee of the utility's performance under power purchase agreement.

In addition, the government may also provide the following financial inducements to private sector participation:

- Exemption from income taxes;

- Exemption from customs duties and taxes on imports of equipment, fuel and machinery; tax credits and exemptions for the use of domestic contractors and domestically-produced equipment; and
- Use of government land and equipment without charge, or at a reduced charge.

Explicit direct liabilities are those liabilities which are recognized by law or as mentioned in a contract agreement. They arise in any event and are therefore certain. Contingent liabilities on the other hand, are obligations if a particular event such as default of a guaranteed loan occurs, and are therefore uncertain in nature and difficult to predict.

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

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

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

Any PPP project should be subject to full social cost-benefit assessment to ensure its public as well as private benefits. Such an analysis can also provide an essential input to the political decision making process which can then become more transparent. The traditional evaluation criteria such as internal rate of return (IRR) and net present value (NPV) may be used to assess the economic justification of a project. A financial assessment with due consideration of the appropriate cost of capital should be undertaken to ensure commercial viability of a project. Such economic and financial assessments are also undertaken to establish the need (of the project), and to provide the basis for public sector's participation in financing. It is also desirable to consider a social goals achievement matrix to consider separately the likely social and political concerns of a PPP project.



Theoretically, a PPP project is favored only when its generated benefits exceed the additional costs discussed above. Two examples of PPPs are provided below. The debate lies on how the benefits and additional costs mentioned above can be determined or measured with a reasonable degree of certainty or confidence?

Case Study No 2 – Bujagali Hydro Power Project with Private Sector Participation

Facing an acute energy shortage that left only five percent of the country with regular access to electricity, Uganda in 1999 worked with the World Bank Group and other development partners to develop a new energy sector strategy. A key element of the reform program is the concession of power distribution facilities to the private sector as a means to underpin the commercial viability and sustainability of the power sector. The Bujagali Hydropower Project also forms a crucial part of the new energy strategy. The project consists of constructing a 250 megawatt, run-of-the-river hydropower plant on the Victoria Nile that will re-use water flowing from two existing upstream facilities to generate electricity. The additional electricity will increase the supply to the national power grid at the lowest cost compared to other power generation expansion options under Uganda's energy sector strategy. The result of the public-private approach to implement Uganda's new energy strategy was the announcement in April of \$360 million in support to the Bujagali Hydropower Project from the World Bank Group. The support consists of \$130 million in loans from IFC to Bujagali Energy Ltd., the private project company, a partial risk guarantee of \$115 from the International Development Association (IDA) for the benefit of the project's commercial lenders, and an investment guarantee \$115 million from the Multilateral Investment Guarantee Agency (MIGA), the World Bank Group's political risk mitigation mechanism.

Case Study No 3 – Albania Distribution Privatization under IFC's Private Sector Participation Program

The privatization of OSSH electric distribution company of Albania is carried out along the same principles that apply to Project Finance or PPPs. The privatization has been possible pursuant to risks allocation between the strategic investor and the government backed by the Partial Risk Guarantee (PRG) mechanism by the World Bank that provides an insurance against to the government's default on its commitments. The strategic investor acquires 76% of OSSH the distribution company that owns 69,000 km of network and serves about 1 million customers. The privatized OSSH will operate under two licenses: (a) a Distribution System Operator License for 30 years with exclusive right to serve all of Albania; and (b) a Retail Public Supply License for 30 years with exclusive right to supply electricity to tariff customers. Based on the agreed Regulatory Framework, the privatized OSSH will be required to: (i) reduce total losses from 32 % in 2009 to 15 % by 2014; (ii) increase the collection rate from 86 % in 2009 to 91 % by 2014; (iii) improve operational efficiency; and (iv) improve the quality of electricity supply. In order to effect these improvements, CEZ expects that the privatized OSSH will invest around €240 million in the first five years of operation after privatization. The government through its regulatory body has committed to gradually raise the weighted average end-user tariff by 15% in real terms from January 1, 2010 until the tariff reaches cost recovery levels. The privatized OSSH will be reimbursed for any financial losses until the end of 2012 while tariffs remain below cost recovery.

The objective of the proposed PRG is to facilitate the privatization of OSSH. The key performance indicators that would be used to assess the fulfillment of the project's development objectives in



terms of outcomes and outputs are: (i) transaction closed by the target date of May 2009; and (ii) timely tariff adjustments approved for the DSO and RPS in conformity with the agreed Regulatory Framework. The project's intermediate outcome indicators are: (i) the initial equity investments are made by the investor for the purchase of shares from government of Albania; (ii) the operation of OSSH in accordance with its license obligations and the implementation of the investment programs approved by ERE. Key outcome indicators are: (i) reduction in electricity distribution losses; and (ii) improvement in collections in accordance with targets set out in the regulatory framework. The regulatory provisions are backed by the PRG. This provides incentives for the privatized OSSH to achieve these important goals. Losses and collections indicators will be included among the high level outcome indicators that will be used to evaluate the project, because the PRG is only one contributing factor among several in meeting these objectives.

3.7 CHALLENGES IN IMPLEMENTING PROJECTS WITH PRIVATE SECTOR PARTICIPATION

The implementation of projects with private sector participation is not an easy task. The table below summarizes some common challenges in the implementation of such projects, where experience and collaboration between different parties are the keys of success.

Untrusting Relationship Between the Public and Private Sector <ul style="list-style-type: none">• Different backgrounds and cultures;• Magnified when standard procedure are poorly defined and where a sharing of risk must be negotiated.	Inexperience in Private Sector <ul style="list-style-type: none">• Steep learning curve;• Project managers are new to the process.	Inexperience in Public Sector <ul style="list-style-type: none">• Slow government bureaucracies;• Inexperience of officials;• Fear of job loss and related antagonism toward the private sector managers;• Governments are unwilling to accept project risks;
High Complexity <ul style="list-style-type: none">• Very complicated risk allocation and sharing arrangements among several parties;• Multidimensional negotiations and need to document agreements amongst parties.	High Development Costs <ul style="list-style-type: none">• High initial cost before design and construction even begin.	High Dependency in Joint Ventures and Consortia <ul style="list-style-type: none">• competition between members of the joint ventures;• high dependency in joint venture between contractors, their subcontractors and suppliers.
Long Economic Lives of such projects <ul style="list-style-type: none">• require long term funding and payback;• require credible forecasts of sales and price and appropriate escalation factors and strong purchasers or guarantees.		

4 OVERVIEW OF FINANCING INSTRUMENTS IN PROJECT FINANCE

The options available for project financing have grown in recent years to meet the needs of the capital-intensive projects. The choice of financing option varies with the type of project and the objectives of project sponsors. In broad terms, the key to successful project financing is to raise the funds with no or as little recourse as possible to the sponsor, while at the same time, providing sufficient credit support through guarantees or undertakings of a sponsor or third party, so that lenders are satisfied with the credit risk.

Generally speaking, the financing options for the project can be broadly classified under various broad sources of equity and debt may be considered as well as an array of financing instruments in project financing as shown in the table below.

Sources	Instruments
<ul style="list-style-type: none">• Host governments• International and regional financial institutions (e.g. World Bank, International Finance Corporation, African Development Bank, East African Development Bank, Islamic Development Bank);• Government's Export Credit Agencies, e.g. export-import banks• Commercial banks, syndicated banks• Sponsor loans and advances;• Institutional lenders• Vendor financing	<ul style="list-style-type: none">• Internal (or self) financing• Short term loan• Senior debt• Subordinated debt (mezzanine finance)• Bond• Lease• Export credit financing• Equity

The following paragraphs present a brief description of some of the specific financing instruments with examples of their use in financing a various projects.

It is worthwhile to mention that the above-stated options of project financing are not mutually exclusive and can be combined for the purpose of the project financing to yield an optimal financing scheme. This requires the judicious selection of joint venture partners, lenders or investors.

4.1 INTERNAL FINANCING

The internal financing method is the simplest and most direct approach for financing, as it allows quick project implementation by avoiding complex contract negotiations and transaction delays, often associated with other financing instruments. The full or partial project cost of the project is covered by the available capital or operating funds of the organization. Allocation of funds is usually made for specific projects as a part of an organization's annual budgeting process. However, for large capital-intensive projects, internal funds are usually constrained by budget limitations and competing operating and capital budget needs. However, partial financing of the

project can be secured from internal sources, while the remaining financing can be arranged by borrowing from local or international banks or other financing institutions.

4.2 DEBT FINANCING

Debt financing may be arranged from a number of sources, such as IFIs (World Bank, African Development Bank, East African Development Bank, Islamic Development Bank, etc.), commercial banks and so on. Debt financing instruments may be classified according to their main characteristics from simple loans, bonds and other debt instruments.

A debt instrument is associated with principal payment obligation on semi-annual, annual or other terms such as bullet payment at the end of the debt tenor, and interest (or coupon, in the case of bond) payment usually on a quarterly, semi-annual or annual basis over the debt tenor upon period. There may be grace period on the principal and/or interest payment. Debt service obligations are guaranteed by the borrower's credit standing and/or by revenues derived from the project.

Short loan refers to short term loan, overdraft, etc., used usually to finance working capital operations or short term assets over a one year period, e.g. the current fiscal year. They are not used as for capital investment or long term project financing. Bridge financing, which is usually available for the construction period, is a very specific type of short term loan that carries high interest rate as lenders accept the risk that the project may never be completed.

Senior loan (or bond) is debt that takes priority over the unsecured or subordinated debt in the event the borrower goes bankrupt or faces liquidation. The senior debt, in principle, is repaid before the other creditors receive any payment. The senior debt is often secured by collateral on which lender will put in place as a first lien (e.g. assets or revolving credit lines).

Subordinated loan (or bond), also referred to as junior debt, is debt ranked after the senior debt. In case of liquidation or bankruptcy, the lenders' of subordinated debt will be paid after senior debts and bonds have been paid and just before the equity shareholders provided there are funds or assets to do so. Given this lower priority, the subordinated debt is more risky and would normally be compensated for the extra risk (e.g. higher interest rate). This is also referred to as mezzanine debt.

Commercial banks' loans will refer to secured or unsecured loans. The secured loans are loans in which the borrower pledges some asset as collateral (i.e. security) for the loan. The unsecured loans are loans that are not secured against the borrowers assets (i.e., no collateral is involved). These usually take the form of bank overdrafts, bonds, credit facilities or lines of credit.

Lenders having equal rights of payment or level of seniority will be generally treated on a *Pari Passu* basis, i.e. on equal footing.

Debt financing by issuing bonds is also one of the common approaches to finance the capital-intensive projects. Various types of bonds (senior vs. subordinated) can be issued to raise finance for the project. The issuance of bond is subjected to the quality of the rating of the issuer by the international rating agency.

In Project Finance, the source of debt financing for large projects can be obtained from IFIs (e.g., World Bank, African Development Bank, Islamic Development Bank, etc.), commercial banks, institutional lenders, etc. Syndicated loans from the regional banks are also one of the financing sources. For example, AfDB provides debt financing for up to 1/3 of the total cost of the project and/or an equity investment not exceeding 25 % of the share capital of any enterprise. Beyond AfDB's contribution to financing or equity injection, AfDB contributes to enhance the confidence and provide comfort to other lenders and investors. This can help in mobilizing funds that would otherwise not be available to the borrower when lenders are reluctant to participate due to perceived risks.

In many cases, the governments facilitate the financing by reducing the borrower's financing costs by providing guarantees or insurance that lowers the risk to lenders. Where the government participates in the financing of public infrastructure, the relevant ministry negotiates the financing for the projects with the lending institutions. Agreements for such loans take place between the governments and lending institutions. The loan proceeds are related to the executing agencies of the project. In this situation, the governments also provide the requisite guarantees.

IFIs have a number of criteria that have to be met by the borrower for qualifying for a loan. The broad criteria of IFIs are provided below followed by an example of the specific criteria applied by the African Development Bank:

- The project must be located in a member country.
- The project must have good prospects of being profitable.
- The equity contributions are required from the project sponsor and must be significant.
- The project must benefit the local economy.
- The project has to comply with the bank's environmental policy and standards as well as those of the host country.

The support of IFIs to Project Finance comes from their views on growing role of the private sector in achieving sustainable development and poverty alleviation. They consider private sector development as a major objective of their development activities, and their actions toward their support to private sector are usually carried out at two primary levels:

- Creating or improving an enabling environment for the private sector participation by providing essential physical infrastructure (e.g. power, information and communication technology, transportation) and "soft infrastructure" (e.g. regulatory and legal frameworks, financial sector, trade liberalization).
- Inducing the private sector participation by assisting private operators with specific transactions in infrastructure, services or financial intermediation.

AfDB's support by means of financial and technical assistance to private sector-led projects and programs is summarized in the Box 3 below.



BOX 3 – AfDB GROUP'S SUPPORT TO PRIVATE SECTOR DEVELOPMENT

What types of projects does the AfDB fund through its Private Sector Window?

The AfDB provides financing for projects that involve the establishment, expansion, diversification, and/or modernization of production facilities in a variety of sectors, including energy, manufacturing, agribusiness, tourism, transport, infrastructure, extractive industries, banking and finance and other service industries. To date, most of the private sector projects have focused on financial services, manufacturing and infrastructure. The recipients of such assistance are both Private entities as well as eligible public entities not requiring sovereign guarantees.

What does the AfDB view as important objectives for private sector projects?

- Employment generation
- Technology transfer and the acquisition of specific skills and knowledge
- Generation of foreign exchange earnings and savings
- Enhancement of value-added products
- Development of local financial markets
- Fostering foreign Direct Investment (FDI) to African countries.

What criteria are important when the AfDB evaluates a project?

- The project sponsor's company(s) must be incorporated in an African country
- The project sponsor(s) must have at least 30 percent equity of the total project cost
- The project must be environmentally sound and comply with the AfDB's environmental guidelines ([link](#)) and the regulations of the respective country
- Sponsors must have satisfactory track-record and financial capacity
- Evidence of adequate management skills
- The project must be financially sound.

What types of financial instruments are available through the AfDB Private Sector window?

- Loans: The AfDB offers hard currency term loans at market interest rates, with a term of 5 to 12 years taking into account a grace period (up to 3 years) reflecting project implementation and projected cash flow. The fees charged are in line with normal market practice, and the Bank requires reasonable collateral to secure the loan, which is dependent upon a variety of factors.
- Equity and Quasi-Equity: The AfDB takes equity investments in a variety of forms, including common shares and preferred stock, with or without participating features. The Bank does not assume any management responsibility and normally develops an exit strategy once the performance goals of the project are realized.
- Guarantees: The Bank provides guarantees to cover the payment of principal and interest for loans and debt instruments extended by others, primarily local or foreign financial institutions and commercial firms.
- Lines of Credit: The Bank offers lines of credit to financial institutions for on lending to small and medium sized enterprises.

- Loan Syndications: Syndications may involve the Bank acting as arranger of financing or involve arrangements whereby banks and other financial institutions are offered to participate in a Bank loan with the banks taking the same project risk as the Bank on a pro-rata basis.
- Underwriting: The Bank can act as an underwriter of a portion of the securities issued by private sector entities and national or regional investment funds.

This can be compared with the other IFIs such as the Islamic Corporation for the Development of Private Sector – ICD, an entity of the IDB, which conditions are summarized in Box 4 below.

Box 4: ICD Private Sector Facility

- Tenure of Financing

The tenure of ICD's financing shall be based on the specific conditions of the project and will normally be in the range of five to seven years inclusive of the gestation period. However, longer tenure can be approved on an exceptional basis.

- Maximum Amount of Investment in a single project should not exceed the following:
 - The average size of the investment targeted is USD 5 million.
 - Equity and Quasi Equity: Under equity participation in the share capital of a company, ICD shall not exceed 33% of the company's paid-up share capital. Moreover, ICD shall never be the largest single shareholder. The minimum amount of financing or equity participation considered by ICD is USD2 million.
 - Term Financing, ICD's exposure shall not exceed the following:
 - 40% of the project investment cost for greenfield projects.
 - 50% of the project investment cost for expansion/rehabilitation of the existing projects.
- Collateral

The amount of financing granted dependent on the type and value of the collateral provided. ICD may accept any of the following forms of collateral/guarantee for its financing: land (real estate within the boundaries of a municipality; building; plant and equipment; quoted/unquoted shares; bank guarantee; corporate guarantee; assignment of receivables; and any other acceptable security.

Other sources of financing are available from multilateral agencies whose primary mission is to promote the interest of their member countries. For instance, the European Investment Bank (EIB) provides financing to borrowers or project sponsors outside the EU boundaries, except that the borrowers or sponsors must demonstrate that their project supports EU economic policy objectives such as: the development of small and medium sized enterprises; industrial projects

improving EU competitiveness; projects that support EU's external co-operation and development policies.

No special formalities are attached to the submission of applications to the EIB for loans. Like for any of the other IFIs, the borrowers or project sponsors are required to provide EIB with well-developed business plan including a detailed description of their capital investment together with the prospective financing arrangements. In additions, sufficient information must be provided to allow the verification of investment compliance with EIB's eligibility criteria. Upon receipt of the information and in view of approving the loan, EIB conducts an assessment of the project as illustrated in the figure below.



Examples of project that have successfully passed EIB project cycle and which financing has been approved are provided below.

Umgeni Water Project

Date of entry: 07/08/2009

Beneficiary: Umgeni Water

Location: South Africa

Description: The project comprises of a number of investments that focus on increasing treatment, storage and delivery capacity of the bulk water infrastructure so as to assure the security of supply of bulk potable water to Umgeni Water’s customers and also enable them to increase access to previously unserved areas.

Objectives: The project will contribute to addressing some of the substantial backlogs in access to water services in areas of KwaZulu Natal Province and to ensuring a security of supply of bulk water that meets the current and future demand for water services.

Sector(s): Water, sewerage, solid waste

Proposed EIB finance: EUR 35 million.

Total cost: EUR 135 million.

Procurement: The promoter will follow procurement procedures based on open international competition with publication of larger contracts in the OJEU. Bidders will have to comply with national regulations required under the Preferential Procurement Policy Framework applicable to public procurement.

Status: Approved - 27/11/2009.

[Tenke Fungurume Mining](#)

Date of entry: 20/06/2007

Beneficiary: Tenke Fungurume Mining Sarl (Private sector)

Location: Democratique Republic of Congo, Tenke & Fungurume

Description: The project entails the development, construction and operation of a copper/cobalt mine and associated processing plants with an expected production capacity of 115,000 t/a of copper and 10,000 t/a of cobalt products in DRC.

Objectives: The project will be supporting the development of private sector activities in an export sector presenting a high foreign exchange earning potential. Substantial direct and indirect employment is expected. The project is expected to provide important social and economic benefits in an impoverished area.

Sector(s): Industry

Proposed EIB finance: To the equivalent in USD of up to EUR 100 million

Total cost: USD 1 billion

Procurement: The selection of the technology suppliers and construction contractors has and will be based (apart from the price) on expertise and experience following international negotiations.

Status: Approved - 17/07/2007.

Similar steps are followed by AfDB to qualify under the private sector development facility; this includes the presentation of an executive summary of the project with the project description, the sponsor names and background information, the cost estimates, the financing plan, the key technical and environmental features, the feasibility indicators, the business climate and market prospect, and the implementation plan. If the bank decides that the project meets its requirements, they will ask the borrowers or project sponsors to submit a full proposal or business plan.

A comprehensive Business Plan has to provide sufficient and quality information for the appraisal of the project by the prospective lenders.



The typical list of information required by lenders is provided below.

1. General	<ul style="list-style-type: none"> Legal structure and laws governing the activity of the company License requested to undertake the contemplated activity Year of establishment Contact information
2. Owners/Sponsors	<ul style="list-style-type: none"> Name, nationality and ownership percentage of main shareholders Experience in the sector, industry and product lines Technical partner Management experience and capabilities Other resources Historical financial information (audited statements for last 3 years)
3. If Product	<ul style="list-style-type: none"> Brief company history Products / services Technology used Labor force Production and sales pattern Sales distribution (local/foreign; market segments, etc.) Market information (supply, demand, prices, distribution strategy, main competitors) Principal suppliers and customers Comparative and competitive advantages
4. If Project,	<ul style="list-style-type: none"> Detailed description of the project Project technical feasibility studies Environmental and Social Impact Assessment with Resettlement Plan as the case may be Comparative and competitive advantages Major sources of competition Technology arrangements Employment (projected) Foreign exchange generation (projected).
5. Investment Costs	<ul style="list-style-type: none"> Costs of the project and its breakdown Basis for estimating costs Potential sources of local and imported equipment/machinery
6. Financial Projections	<ul style="list-style-type: none"> Pro-forma financial statements for the project, and consolidated statements for the company (cash flow, balance sheet and income statement) Assumptions used for financial projections Cost of goods sold Ratio analysis Risks Analysis and mitigations
7. Project Implementation Plan and Agreements	<ul style="list-style-type: none"> Procurement plan Schedule for project implementation License or concession agreement EPC contract

	Fuel Supply Agreement
	PPA
	O&M or Long Term Service Agreement (LTSA)
	Project Implementation Agreements
8. Financial Plan	Equity (Owner/Sponsor; Others)
	Long Term debt (Local Banks; Foreign Banks; Others)
9. Operating and Working Capital Financing	Trade/commodity/crop, etc. finance
	Short-term lines of credit for working capital needs
10. Proposed Security Arrangements	Liens on project assets
	Insurance
	Sponsor guarantees
	Project completion guarantees
	Offshore escrow account
	Security sharing mechanism with other financiers

4.3 LEASE

In the lease financing, the equipment is acquired from the supplier/vendor who finances the project costs internally or through a third party. Upfront outlays are not required and the supplier/vendor costs are repaid in installments over the term of the lease. Broadly, lease arrangements can be classified in three categories:

- Third party leasing companies offering true leases and conditional sale leases to projects;
- Vendors interested in selling equipment to the project which provide lease financing as an inducement to the completion of sale; and
- Sponsors or parties interested in a project and providing leases as a means of moving the capital into the project.

The lease financing option is particularly attractive when internal financing is not possible and when debt must be kept off the balance sheet.

The long-term financing from the Islamic financial institutions is normally structured as lease finance. Islamic finance is gaining importance during the recent years due to innovations in Islamic finance. Particularly in the areas of bonds and securities, the use of Sukuk has become increasingly popular both as a means of raising government finance through sovereign issues and as a way of companies obtaining funding through the offer of corporate Sukuk. Sovereign bodies, multinational corporations and financial institutions use international Sukuk issuance as an alternative to financing.

There are many types of Sukuk financing available depending upon the Islamic modes of financing and trades used in its structuring. The most common ones include, Mudaraba, Ijarah, and Istina. Sukuk funds can be project-specific, asset-specific and balance sheet-specific. Under project-specific bond money is raised for a specific project. Under the asset-specific arrangement, the

resources are mobilized by selling the beneficiary right of the assets to the investors (Ijara Sukuk). An example of balance sheet-specific use of Sukuk funds is the Islamic Development Bank (IDB) 5 years Sukuk bonds raised from the international capital market for financing various projects of the member countries. The future outlook Islamic finance is promising. According to the Islamic Finance Information Service, the expectations of market consolidation, wider international outreach with non-Muslim investors/issuers, and development of uniform shari'ah rules governing Sukuk will contribute to the growth of the Sukuk market that will become an important platform, complementing the conventional bond market and enhancing the mobilization and allocation of funds across the international capital markets.

4.4 EXPORT-IMPORT CREDIT AGENCIES (ECAs)

There are many Export credit agencies but only a few actively supports financing of capital-intensive projects and lent big amounts to home-based corporations that have expanded their operation, getting involved as sponsors, EPC contractors, equipment suppliers and O&M contractors. Their primary mission is to promote overseas businesses for the home-based companies by providing full support and guarantees on their investments. US Eximbank (USA), KfW (Germany), Coface (France), EDC (Canada), Exim Bank of China, I-Eximbank (India), Kexim (Korea) and JBIC (Japan) are some of the active ECAs.

A project can benefit from the guarantees of many ECAs. For instance, the Chad -Cameroon Oil and Pipeline Project has benefited from Eximbank of USA a guarantee of US\$ 200 million worth of commercial bank loans for this US\$3.7 billion project. France's COFACE is another major financier of the project. The World Bank's decision to fund the project in June of 2000 gave the green light for other funding agencies, such as the European Investment Bank, to also participate in the project. The project aims to develop the Doba oil fields in southern Chad and build a 1,070 km pipeline through Cameroon to offshore oil-loading facilities on Cameroon's coast. ExxonMobil of the U.S. is the project operator and holds 40% of the private equity with the remaining shares being held by Malaysia's Petronas and Chevron of the U.S.

The ECA may allow the mobilization of up to 85% of the project component associated to the equipment or material through EPC contractors or equipment suppliers.

Japan leads the Asian ECAs with JBIC which is a big lender and now also an investor. Following Japan is South Korea, whose construction and engineering companies have been in demand for EPC contracts. Kexim offers full support to South Korean companies participating as project sponsors or EPC contractors.

The newest player is China whose equipment manufacturers are being sought by project developers to obtain lower EPC costs. Eximbank of China like other ECAs looks for projects to be financed that are economically, financially and technically sound and capable of promoting both economic growth and development. Eximbank of China's activities are not reported regionally, but there is evidence of significant and expanding operations in Africa. In 2005 Eximbank of China extended its export buyers credit market to Africa through its official "African Policy" aimed at "encouraging and supporting Chinese firms' investment and business in Africa by providing preferential loans and buyer credits to this end. Based on information provided by the Center for Global Development (Todd Moss and Sarah Roe, November 2006), even though the information

are sometimes not reliable, reported projects supported by Eximbank of China in 2005-06 alone include:

- A possible \$1.2 billion in new loans to Ghana, including \$600 million for construction of the Bui dam;
- \$2.3 billion in total financing for Mozambique for the Mepanda Nkua dam and hydroelectric plant, plus another possible \$300 million for the Moamba-Major dam;
- A \$1.6 billion loan for a Chinese oil project in Nigeria;
- \$200 million in preferential buyers credit for Nigeria's first communications satellite;
- A \$2 billion line of credit to Angola, with the possibility of another \$9-10 billion;
- Reports of loans and export credits for other projects in Congo-Brazzaville, Sudan and Zimbabwe.

By comparison, the source of information indicates that Eximbank of USA supported transactions in all of sub-Saharan Africa totaled less than \$500 million in 2005.

4.5 SOVEREIGN WEALTH FUNDS

The influence of sovereign wealth funds on financial markets is expected to increase tremendously. They are expected to take large stakes in bonds and equities, especially in the emerging markets. Sovereign Wealth Funds are increasingly managing their own surpluses and participating actively in project financing. In the Middle East, Abu Dhabi Investment Authority, Qatar Investment Authority and Kuwait Investment Authority are the major sovereign wealth funds. Jebel Ali port in Dubai is perhaps one of the original cases of sovereign wealth being turned into a major infrastructure project.

4.6 EQUITY

Equity participation from either or both the public and private sectors is an important component of Project Finance can also be considered as one of the financing options. Experience in large Project Finance shows that debt accounts typically for 70-80% of the total financing, and the equity the balance. Project Finance often requires making use of a combination of methods described above, and given the sources of financing the optimum financing structure can be defined.

The shareholders' commitment to the project is viewed as an important criterion and often a prerequisite from lenders for approving loans.

4.7 FINANCING FOR SMALLER PROJECTS

The financing of smaller projects is generally available or structured through financial intermediaries.

AfDB has created a multiphase USD 1 billion Trade Finance Initiative (TFI) that provides lines of credit to commercial banks for on-lending to the private sector in their respective countries,



particularly for the development of small and medium sized enterprises (SME's) and smaller scale infrastructure projects. The terms and conditions of the new Trade Finance Line of Credit product are described below:

- **Eligibility:** African FIs engaged in trade finance subject to Bank standard selection criteria including strategic alignment, commercial viability, development outcomes, additionality, and complementarity. All financial institutions must meet the Bank's credit standards (risk rating 6 or better) and the risks of each transaction will be evaluated on a case-by-case basis. All applications will be subject to the Bank's prescribed review and approval processes and procedures.
- **Use of Proceeds:** for trade finance operations including but not limited to, standard import and export finance operations including pre- and post-shipment finance. Given the short-term nature of trade finance (90% is less than one year), the FI will be permitted to "re-use" or "revolve" the proceeds until the contractual repayment dates of the facility.
- **Maturity:** up to 3.5 years.
- **Repayment Terms:** amortizing repayment terms with an agreed grace period on principal repayments (typically up to one year) or may be repaid in a single (bullet) installment at final maturity. In line with standard practices, the Bank may charge a prepayment fee for early repayment and a penalty for late repayment.
- **Disbursement Terms,** usually in two tranches: 1st tranche (up to 50%) to be drawn after the conditions precedents have been met; 2nd tranche disbursed after the Bank has verified that the use of proceeds of the 1st first tranche complies with the terms and conditions of the legal agreement.
- **Pricing:** up-front fees of up to 1% of the committed amount and will be priced with a margin over a standard interest rate reference such as LIBOR in the currency of the facility.

IDB private branch provides financing from indirect financing through specific funds or via financing facilities such as lines of finance granted by ICD to financial intermediaries for investment that meet the eligibility criteria, but with a total cost lower than USD 2 million.



5 CASE STUDY

The public electricity utilities of the country A and country B consider the development of an interconnection that will allow them to share capacity and exchange energy during normal operation and to provide mutual back-up assistance during emergency operating conditions.

Provided that the project is economically viability, the financial viability of the project has to be studied. The financial study has to consider the different project finance models as wells as the different financing sources and instruments. The results of these analyses should allow the utilities to arriving at a decision regarding the selection of the optimum financing options from the point of view of each country and from both together.

NOTE: this case study is drawn from the feasibility of different interconnections. However, the cost estimates and other input data are purely hypothetical and the conclusions theoretical and intended for the purpose of this training module only.

5.1 PROJECT DESCRIPTION

The interconnection of the transmission systems of the countries A and B comprises the construction of a ± 500 kV HVDC link with approximately 1100 km long transmission line between both countries. The interconnection capacity is 2000 MW.

5.2 PROJECT COST AND ALLOCATION

Based on the key project parameters and configuration described above, the preliminary estimate of the project EPC cost is about US \$ 900 million; the total investment cost has to be determined.

Out of this EPC cost, the share of country A is US \$ 400 million and of country B US \$ 500 million. The cost breakdown according to the major components of the project and by country is as follows:

	Country A	Country B
• Converter Station	US \$ 175 million	US \$ 150 million
• HVDC Line	US \$ 225 million	US \$ 350 million
• Total	US \$ 400 million	US \$ 500 million

The cost breakdown by local and foreign component and the schedule of disbursement will be discussed below.

5.3 MODELS OF FINANCING OPTIONS TO BE ANALYZED

The four considered financing options are:

1. Corporate financing with each utility carrying the cost of the interconnection on its balance sheet;
2. Publicly owned SPV, i.e., owned by the utilities of countries A and B;
3. Privately owned SPV; and
4. Mixed Publicly and Privately owned SPV.

Option 1: Corporate Financing for the Project

Under this financing arrangement, the financing of the interconnection would be undertaken on the balance sheets of both utility A and utility B. The assets of both the companies will be used as collateral to obtain a loan from banks and other lenders. The financing institution would provide funding on the basis of the financial strength of the utility A and utility B.

Option 2: Publicly Owned SPV

Under this structure, a SPV owned by the public utilities A and B would be created and will act as the formal entity responsible to develop, build and operate the project. For this option, non recourse financing, if not limited recourse financing, is considered.

Option 3: Privately Owned SPV

Under this structure, a privately owned SPV would be created and will act as the formal entity responsible to develop, build and operate the project. For this option, non recourse financing if not limited recourse financing is considered. The equity and debt for the project are to be provided by the private sector.

Option 4: Mixed Public-Private Owned SPV

This model contemplates a mixed public-private ownership. The SPV is capitalized by the equity investments from both the utilities A and B and private investors.

5.4 FINANCING SOURCES AND INSTRUMENTS

Various sources of equity and debt may be considered for financing the project including:

- International and regional financial institutions, such as World Bank, African Development Bank, Islamic Development Bank;
- Commercial banks (e.g. syndicated banks);
- Export credit agencies (ECAs);
- Sponsor loans and advances and capital injection.

5.5 DETAILED FINANCING OPTION ANALYSIS

The input assumptions for the analysis of the financing options are provided in the tables that follow. The inputs will be completed with the participants during the training session. This will allow using figures that are drawn from their own experience and/or to discuss the model assumptions based on the consultant experience and own database. The inputs to be completed with the participants are the following:

1. Project timeline;
2. Project total EPC cost versus total Investment cost;
3. Macro-Economic Assumptions (e.g. inflation and price escalation indexes, exchange rate, discount rate);
4. Project Disbursement Schedule;
5. Customs and Import Duties, VAT and Tax Assumptions;
6. Depreciation and Refurbishment;
7. Target Capital Structure according to the models analyzed;
8. Terms and conditions for the various sources and instruments of financing;



9. Development of the financing plan;
10. Sensitivity analysis parameters; and
11. Other inputs.

5.6 QUESTIONS

The participants will have to decide on the best models for the project finance and discuss how the financing structure may impact the bankability of the project. In doing so the participants will have to answer the following question:

1. What is the best financing option and why?
2. Would the preferred solution be different if each utility is looking at a project from a standalone point of view?
3. Can the project be developed on a recourse financing basis or be recommended given the information above? If so what will be the implications for both utilities?
4. Does the SPV's capital structure matter?
5. Where would it be more beneficial for the utilities separately and together for setting a joint SPV? Would this be acceptable given the allocation of the benefits and risks between both sponsors and others?
6. Can such project be bankable? If so, what are the critical risks to be dealt with to secure the project financing on a non-recourse basis?
7. Would customs and import duty taxes exemption and/or taxes holidays during the operation mean to reduce significantly the investment risks?



5.7 INPUTS AND ASSUMPTIONS

PROJECT FINANCE - CASE STUDY CASE : Publicly Company owned by A and B owners

INPUTS AND ASSUMPTIONS

Company structure					
2	1	2	3	4	5
Publicly Company owned by A and B owners	On Balance sheet (i.e. recourse financing)	Publicly Company owned by A and B owners	Privately owned company	Mixed Public & Private Company (51%/49%)	

0. Select country					
Company incorporated in :	Country A	Country B		Country A	
SPV Cost (x millions USD)	0,250	0,300	Sensitivity : 0,0%	0,300	
Sponsor development cost (% of Total EPC cost)	0,50%	0,50%	4,50 USDm	0,50%	
ESIA & ROW Costs (% of Total EPC cost)	1,25%	1,00%	9,00 USDm	1,00%	
Financing Fees			#DIV/0!	USDm	21,00

Country A
Country A
0,250 0,300 0,400 0,400

1. Project Timeline and keys Dates		
Reference Year		2010
Interconnector Licence Term (years)		30
Financial Close date	31-déc-11	2011
Construction Start date / Period lenght (years)	4	4
Construction End date	31-déc-15	2015
Date operations commence	01-janv-16	2016
Operation period length (years)	30	30
Contract end date	31-déc-45	2045

2. Scenario	
Scenario	BASE SCENARIO
Revenues Requirement Allocation Key	Based on contribution of each utility to Total investment

3. Tax Assumptions				
	Country A	Country B		Country A
Construction Phase				
Customs and duty taxes exemption?	No	No		No
VAT exemption?	No	No		No
Operation Phase				
Taxes holidays during Operations phase	No	No		No
IF, Yes,				
Number of years of Corporate tax holidays			years	-
Carry forward losses # of years (max. 5 years)			years	-

TAXES	Country A	Country B	
Corporate Income Taxes			0,00%
Customs & Duties			
Average Customs & Duty Taxes			0,00%
Foreign Costs Base subject to Customs			0,00%
VAT			
Rate			0,00%
Local Costs Base subject to VAT			0,00%
VAT Recoverable			0,00%
Zahkat			
Rate			0,00%

4. Macro Economic Assumptions				
	Country A	Country B		Country A
Discount rate	8,00%	10,00%		8,00%
Price Escalation Rates	See separate Table on "General Assumptions"			

PROJECT FINANCE - CASE STUDY
CASE : Publicly Company owned by A and B owners

INPUTS AND ASSUMPTIONS

Company structure					
2	1	2	3	4	5
Publicly Company owned by A and B owners	On Balance sheet (i.e. recourse financing)	Publicly Company owned by A and B owners	Privately owned company	Mixed Public & Private Company (51%/49%)	

5 . Depreciation

METHOD	Straight-Line Depreciation Method	
Provision for assets refurbishment/renewal (% of Gross Asset at real price)	0,00%	Provision, USDm : / Provision taken back, USDm :
Assets Refurbishment	Yes	Refurbishment, USDm : 157,00

Asset Category	Asset Economic Life (Years)	Semester/ Year of completion	Upgrading every 'n' year	% of assets to be upgraded	Country A			Country B			% of assets to be upgraded	
					Asset Economic Life (Years)	Semester/ Year of completion	Upgrading every 'n' year	% of assets to be upgraded	Asset Economic Life (Years)	Semester/ Year of completion	Upgrading every 'n' year	% of assets to be upgraded
FOREIGN COMPONENT												
MATERIAL - CONVERTERS	20	Dec. 2015	15	15%	20	Dec. 2015	15	15%			15%	15%
MATERIAL - LINES	50	Dec. 2015	35	10%	50	Dec. 2015	35	10%			10%	10%
CIVIL - CONVERTERS	30	Dec. 2015	25	10%	30	Dec. 2015	25	10%			10%	10%
CIVIL - LINES	50	Dec. 2015	35	10%	50	Dec. 2015	35	10%			10%	10%
OTHERS	10	Dec. 2015	15	10%	10	Dec. 2015	15	10%			10%	10%
LOCAL COMPONENT												
MATERIAL - CONVERTERS	20	Dec. 2015	15	15%	20	Dec. 2015	15	15%			15%	15%
MATERIAL - LINES	50	Dec. 2015	35	10%	50	Dec. 2015	35	10%			10%	10%
CIVIL - CONVERTERS	30	Dec. 2015	25	10%	30	Dec. 2015	25	10%			10%	10%
CIVIL - LINES	50	Dec. 2015	35	10%	50	Dec. 2015	35	10%			10%	10%
OTHERS	10	Dec. 2015	15	10%	10	Dec. 2015	15	10%			10%	10%

6 . Price Escalation

Capex - Foreign component	(see General Assumptions Table)	No	No	No	No	No	No
Capex - Local component	(see General Assumptions Table)	No	No	No	No	No	No
O&M	(see General Assumptions Table)	No	No	No	No	No	No

7 . Target Capital Structure

Country A					
DEBTS					
Multilateral Debt - Tranche A	0,0%				
Commercial Bank Loans - Tranche B	0,0%				
ECA Debt	Limit in % : 83,9%				
Sub-Total	0,0%	0,0%	0,0%	0,0%	0,0%
EQUITY					
Private sources	0,0%				
Public sources (i.e. EEHC, SEC)	0,0%				
Sub-Total	0,0%	0,0%	0,0%	0,0%	0,0%
TOTAL	0,0%	0,0%	0,0%	0,0%	0,0%
Country B					
DEBTS					
Multilateral Debt - Tranche A	0,0%				
Commercial Bank Loans - Tranche B	0,0%				
ECA Debt	Limit in % : 0,0%				
Sub-Total	0,0%	0,0%	0,0%	0,0%	0,0%
EQUITY					
Private sources	0,0%				
Public sources	0,0%				
Sub-Total	0,0%	0,0%	0,0%	0,0%	0,0%
TOTAL	0,0%	0,0%	0,0%	0,0%	0,0%
ECA Debt limit: "x"% of Foreign Cost component	80,0%	80,0%	80,0%	85,0%	85,0%



PROJECT FINANCE - CASE STUDY
CASE : Publicly Company owned by A and B owners

INPUTS AND ASSUMPTIONS

Company structure				
2	1	2	3	4
Publicly Company owned by A and B owners	On Balance sheet (i.e. recourse financing)	Publicly Company owned by A and B owners	Privately owned company	Mixed Public & Private Company (51%/49%)

11. Sensitivity Analyses					
SCENARIO	BASE	BASE	OPTIMISTIC	PESSIMISTIC	BASE SCENARIO
Change in interest rates (Long Term Debts)	0,0%	0,0%			No 0,0%
Change in interest rates - bridge financing	0,0%	0,0%			No 0,0%
Change in Capex	0,0%	0,0%			No 0,0%
Change in SPV costs	0,0%	0,0%			No 0,0%
Change in O&M costs	0,0%	0,0%			No 0,0%
Change in Revenues Required	0,0%	0,0%			No 0,0%
Change in Other revenues	0,0%	0,0%			No 0,0%
[reserve]					

Return, at financial close, i.e. 2011	Min. DSRC
IRR	ADSRC
EIRR, after taxes	

REVENUES REQUIREMENT (Commitment-to-pay) x million USD	Country A	Country B
Max Annual Revenues Req. :	44,4%	55,6%
Average Annual Revenues Req. :		

End