

## **PPP Skills and Competency Development**

### **ONLINE TRAINING PROGRAMME**

## **Module II: Project Appraisal & Feasibility Studies**

### **Module Overview and Learning Objectives**

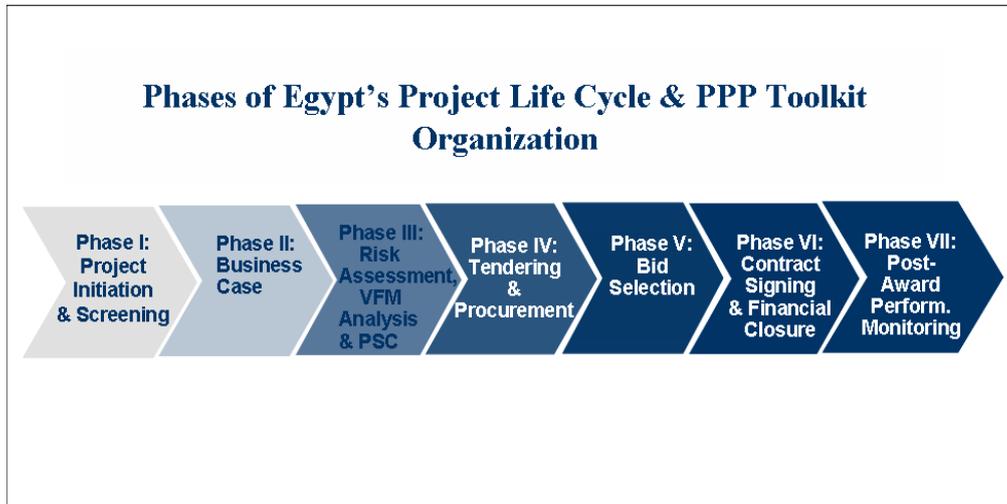
This module will provide participants with an understanding of the PPP project appraisal process and the specific objectives of and steps required to undertake a feasibility study for PPP. Given the level of experience that South Africa's PPP Framework has with managing PPP feasibility studies, many of the examples and guidelines for managing this important process are based on South Africa's proven record.

By the end of the session, participants will:

- Understand the factors that determine whether PPP is an appropriate option for providing a given public service or project;
- Understand the basic concept of a PPP feasibility study;
- Have insight into why feasibility studies are a critical part of the overall PPP project cycle;
- Be able to distinguish PPPs from traditional public sector procurement methods;
- Understand the principles of PPP risk identification, analysis, and allocation; and
- Understand basic PPP payment structuring options.

### **Project Identification, Screening & Selection**

When Governments and donors decide to spend their limited funds on a detailed analysis of a PPP project, it is because there are promising indications that the project would make a good candidate for implementation through PPP. However, to be able to make this important decision, a systematic screening of the project's "PPP-ability" must first be completed.



**Figure 2.1: An example of the PPP Project Initiation & Screening Phase as the starting point of the PPP Project Cycle – Source: Egypt's PPP Central Unit's PPP Toolkit**

### Factors Affecting Desirability of PPP

There are a number of factors affecting the viability and appropriateness of PPPs. These include:

- **Nature of Project:** The type of PPP project must satisfy a well-defined public need for services with a clear and definable revenue stream.
- **Risks inherent in the Project:** All relevant, material risks inherent in the project must be systematically identified, analysed for both the size of their impact and their probability of occurring, and the allocated to the party best positioned to manage and mitigate such risks (including possible sharing of some risks).
- **Speed of Implementation:** By the time a PPP project comes to market, the project must have clear project objectives and be clear of any policy and political hurdles that might delay or prevent its implementation.
- **Application of End-User Charges:** Where end-user charges are utilised, the application of such charges should be as clearly defined as possible to accommodate the requirements for financing the project.
- **Policy Support:** The project should fit clearly within the current policies of the Department, as institutional sponsor, for the reasons previously stated.

### Characteristics of a Project's Suitability to be Selected as a Candidate for PPP

While the suitability of different PPP structures must be assessed on a project-by-project basis, common characteristics of successful candidate projects include:

- The project can be defined in terms of clear and measurable performance in output terms, rather than input terms (see Box on “Inputs vs. Outputs” on next page);
- Attractive size and project scale of interest to private sector investors and operators;
- Significant element of service or operating content;
- Whole life costing, including operations, maintenance, and replacement/renewal cost over the entire life of the project;
- Cost effective allocation of specific risks to the private sector;
- Value for money for government; and
- Opportunity for innovation by a private partner.

It is important for PPP practitioners to understand that PPP structures are not suitable for all infrastructure and public services projects. The majority of infrastructure and public services will continue to be financed, managed, and operated by Governments. What PPPs do allow, however, is an important leveraging opportunity for Governments to use their limited public sector resources better in order to attract new private sector investment, technology, and risk-sharing into key infrastructure sectors in order to deliver more value for the economy and for consumers. While some projects are excellent candidates for these PPP arrangements, inevitably others will not be.

### **Features Suggesting a Project Would Not be Appropriate Candidate for PPP**

As noted, there are many infrastructure projects that will be needed for their important social and economic benefits, but which may not make good candidates for implementation through PPP. As part of the project screening process, it is important that Governments are able to recognize these kinds of projects and avoid spending limited public resources appraising such projects. It can be argued that it is more valuable to know when a PPP would not be appropriate for a given project, and limited public resources should not be wasted on analysing the PPP feasibility, than it is to know how to prepare and implement a PPP.

### The Inspiration for Establishing PPP Legal & Regulatory Frameworks: Stopping Inappropriate Projects

It may come as a surprise to some PPP analysts, that several national frameworks for PPPs were created more out of a desire to stop inappropriate projects from proceeding than to facilitate the completion of proposed PPPs. After South Africa's first democratic constitution in 1994, several local governments and infrastructure line departments identified and prepared PPPs to reduce the country's enormous inequality in access to key public services. Pilot PPP contracts were signed for the N4 toll road connecting Gauteng Province with the port of Maputo in Mozambique, as well as concession contracts for the water systems of Dolphin Coast in Kwa-Zulu Natal and Nelspruit in Mpumalanga. PPPs were also tendered by the National Dept. of Corrections for new prison space that was urgently needed. However, on the eve of contract signing the Dept. of Finance revealed that no affordability analysis had been done to ensure that this public institution has the "fiscal space" within its the budget projections to meet these payments to PPP contractors over the entire 20 year term of the contract.

In response, the Government of South Africa established a new PPP framework under the Authority of the Public Financial Management Act (PFMA) including a National PPP Unit within the Department of Finance and regulations for their implementation. One the very first requirements of this PPP framework is that before a public institution may proceed with analysing, preparing, or tendering a PPP it must first demonstrate that the project can be afforded. This important requirement applies to both PPP and to traditional public investment projects. The goal of a national PPP framework, therefore, should not only be to facilitate the completion of more PPP projects, it should also ensure the protection of limited public resources by preventing inappropriate or unaffordable projects from going forward.

Features that suggest a project would **not** be an appropriate candidate for PPP include:

- The project's required revenue stream, whether from payments by a client Government institution or from end-users (or both) cannot be afforded;
- The project cannot be defined through clear, measurable output standards;
- Most of the project's key risks (such as construction costs, demand levels, or operations) are outside of a private contractor's control or are could be better managed by the public sector;
- There are significant uncertainties about the legality of a private company undertaking the given project;
- The public sector client lacks the capacity to monitor the performance of the private partner and to manage a PPP contract; and
- A competitive market already exists for the provision of the service.

### Input v. Output: Conventional Procurement vs. PPP Procurement

**Conventional public procurement specifies the inputs. The Government defines what inputs it requires in order for it to deliver a particular service.**

With conventional procurement, the public institution prepares detailed specifications that describe the materials, commodities, equipment, and infrastructure required to deliver a service. These required inputs are then put out to tender. Once the contract is awarded, the public institution closely supervises construction and installation of the assets to ensure compliance with the tender specifications. Thus, the public institution is responsible for: the design, planning, and management of the project; all statutory requirements (such as environmental and heritage approvals and town planning regulations); and any costs that may arise due to unforeseen circumstances or elements that were omitted from the tender. The private contractor is only responsible for what is covered by the tender specifications, including anything that could reasonably have been foreseen. Specifying inputs generally excludes the possibility for alternative, innovative solutions which bidders could come up with, and may inhibit innovation.

**PPP procurement specifies the outputs. The public institution must first define the service levels that need to be delivered.**

The key element of a PPP project is the definition of a public service through specifying the output(s) that it must deliver. The public institution leaves inputs like the design of the infrastructure required to deliver the service up to the private party, which will be selected through a bidding process. Other key inputs like the technology, construction costs, operating, maintenance & renewal costs are also left up to the private party. It is important to note, however, that Government's do have the right to review all of these proposed inputs during the bidding process, and to reject any bids that are deemed to be technically non-responsive, too risky, or inappropriate. PPP projects should, however, be driven fundamentally by these output specifications, which allow for optimal risk transfer to the private party and thereby ensure greater value for money for the public institution.

**Defining the service through specifying the outputs requires the public institution to apply its mind to what needs to be achieved, as opposed to how it will be attempted.**

The concept of output specifications entails a fundamental change in how the public institution understands and manages the delivering its core services. Instead of merely procuring infrastructure and assets, the public institution must now be thinking of procuring the service within specified outputs. For example, the outputs for delivering a prison service would include required, measurable standards of accommodation for inmates, security standards, rehabilitation, catering, cleaning, health care, and maintenance services, and so on. Conventional procurement would specify the design and materials required for a prison building. It must be noted, however, that developing effective, clear, and measurable output standards takes time and rigorous analysis to do well.

Once a project has been selected as being an appropriate candidate for a PPP, a more detailed PPP feasibility study needs to be undertaken.



#### **For More Information**

The following websites provide practical techniques for managing PPP project selection and feasibility studies:

- South Africa's National Treasury PPP Unit: [www.ppp.gov.za](http://www.ppp.gov.za)
- Partnerships Victoria, Australia, PPP Practitioners' Guide:  
[http://www.partnerships.vic.gov.au/CA25708500035EB6/WebObj/PVGuidanceMaterial\\_PracGuide/\\$File/PVGuidanceMaterial\\_PracGuide.pdf](http://www.partnerships.vic.gov.au/CA25708500035EB6/WebObj/PVGuidanceMaterial_PracGuide/$File/PVGuidanceMaterial_PracGuide.pdf)

## Institutional Arrangements for PPP Project Feasibility

If it has been determined that a PPP would be desirable, the next step will be to conduct a detailed feasibility study and to determine how the PPP project’s risks and responsibilities should be structured. Institutionally, it is important to clearly distinguish between the roles of a National Treasury or Ministry of Finance on the one hand and of infrastructure line ministries, and public institutions, and infrastructure authorities on the other. As line ministries and public institutions are responsible for ensuring that public services are being delivered, it is these line ministries that should: select which projects get implemented (whether through PPP or publicly); conduct the feasibility analysis; tender, award, and sign the PPP contract; as well as monitor the project’s performance. While Ministries of Finance (and their PPP Units), should establish the procedures and framework for preparing and implementing PPPs, they need to maintain enough separation from the process in order to be able to independently review proposed PPP projects and to reject or disapprove projects that may be inappropriate. PPP projects proposed by line ministries may be deemed inappropriate if they are not affordable; if they require too many public sector supports, contributions, or contingent liabilities; if their procurement is not competitive or transparent; or if they do not offer any better value for the public’s money compared to a public sector alternative. When thinking about how to manage the preparation a PPP feasibility study, therefore, it is the line ministry, as the client of the PPP, that is responsible for managing and overseeing this task.

Worldwide, nearly all Governments engage experienced outside consultants to conduct and to complete their PPP feasibility studies. The reason for this has less to do with whether or not line ministry staff have the competence and capacity to undertake such studies, than it does with the issue of what is the best way to manage a large and complex analytical task like a PPP feasibility study. Governments like the United Kingdom and Australia that have been preparing and implementing PPP for nearly two decades, and which have developed a high level of PPP experience and skill among public sector managers engage outside PPP consulting firms and transaction advisors to prepare all of their major PPP projects. Preparing such projects requires large amounts of specialized, multidisciplinary analysis (technical, financial, legal, environmental, etc.) over a compressed period of a couple of months. Governments get better quality and more timely results when they engage qualified PPP consultants to undertake these specialized challenges.

Developing country Governments, such as in the SADC region, should expect to require experienced and qualified advisors to prepare and complete both PPP feasibility studies, as well as to advise on the tendering and procurement process. What line ministries and PPP Unit staff should be prepared for is to monitor and oversee the progress the recommendations and the results of these PPP advisors. One of the first tasks of such line ministry managers and PPP Unit staff is to prepare terms of reference (TORs) for the engagement of consultants to prepare a feasibility study on government’s behalf.

## The PPP Project Officer

One solution that has proven effective in addressing this challenge is the appointment by government of a Project Officer to supervise the given PPP project’s preparation process, including the feasibility study and the consultant team involved in preparing it, on government’s behalf. This PPP Project Officer must meet rigorous standards for competency, such as those presented in Table 2.1, below.

**Table 2.1: PPP Project Officer Competency Framework**

CLUSTERS	COMPETENCIES	INDICATORS
	Applies professional expertise and experience	<input type="checkbox"/> PPP knowledge <input type="checkbox"/> Comparable project experience <input type="checkbox"/> Relevant knowledge of law, finance, public administration and document management

## Module II: Project Appraisal & Feasibility Studies

<b>Self</b>	Develops self and others	<input type="checkbox"/> PPP knowledge
		<input type="checkbox"/> Personal development
		<input type="checkbox"/> Team development
		<input type="checkbox"/> Career development of self and others
	Is resilient and motivates	<input type="checkbox"/> Determination
		<input type="checkbox"/> Self motivation
		<input type="checkbox"/> Motivation of others
	Implements strategy	<input type="checkbox"/> Strategy development
		<input type="checkbox"/> Strategy implementation
		<input type="checkbox"/> Strategy communication
<b>Task</b>	Solves problems	<input type="checkbox"/> Problem solving
		<input type="checkbox"/> Creative thinking
		<input type="checkbox"/> Decision making
	Achieves results	<input type="checkbox"/> Project management
		<input type="checkbox"/> Resource management
		<input type="checkbox"/> Quality management
		<input type="checkbox"/> Risk management
		<input type="checkbox"/> Change management
		<input type="checkbox"/> Variation management
		<input type="checkbox"/> Knowledge management
		<input type="checkbox"/> Monitoring
<b>People</b>	Builds relationships, communicates and negotiates	<input type="checkbox"/> Partnership and relationship management
		<input type="checkbox"/> Communication
		<input type="checkbox"/> PPP negotiation
	Leads and manages team	<input type="checkbox"/> Leadership and management
		<input type="checkbox"/> Delegation

*Source: Adapted from UK Office of Government Commerce (OGC), A Competence Framework for Creating Effective Private Finance Initiative (PFI) Projects.*

The PPP Project Officer's responsibility spans the entire PPP project life cycle, and her job is to ensure that the process runs smoothly, on time, and within budget. Government should complete the process of identifying and hiring the PPP Project Officer before the feasibility study begins. Experience recommends that the term of the Project Officer's contract should run through the first year of the PPP project's inception. Because it is critical that the PPP Project Officer be able to act with clear authority and on government's behalf, the Project Officer should be appointed as a senior member of the line ministry's/public institution's staff.

On a practical note, a qualified PPP Project Officer may command a higher salary than that provided for by existing civil service pay scales. If this is the case, an exemption from these pay rules needs to be sought in order to ensure that a competent individual can be retained and will remain with the project throughout its entire life cycle. To ensure a smooth transition takes place, if and when a PPP Project Officer resigns, clear guidelines must also be put in place to ensure that the PPP Project Officer has a well-defined workplan, and that records are kept and stored in a manner that they will be easily transferable to the new PPP Project Officer. It is also recommended that "understudies" and other staff within the line ministry are identified and kept informed of the PPP Project Officer's progress, decisions, and records. In addition, it is important that the transition between PPP Project Officers be handled smoothly so that, ideally, there is some overlap between the departing and incoming staff.

### PPP Feasibility Study Consultants & PPP Transaction Advisors

One of the Project Officer's first tasks may be to hire a PPP consultant team or transaction advisors. Typically, consultants are engaged to prepare a PPP project's feasibility study, including the proposed "Business Case" that details how the PPP project should be structured. PPP transaction advisors are firms or individual engaged to prepare the PPP project bid and tender documents based on the Business Case, and to advise and to support the information and analytical needs of the Government's

Project Procurement Committee on the implementation and completion of tendering process, all the way through to PPP contract signing and financial closure.

Depending on the size and complexity of the PPP project, the PPP feasibility consultant may be an individual with a broad set of project management skills, a single firm, or consortium of firms that assemble a multidisciplinary team of individuals with expertise in such fields as economics, law, engineering, human resources, communications, accounting, financial management, and more.

One key management issue for Governments is whether to appoint a single team to both conduct the feasibility study as well as to manage the transaction, or whether these should be split between different firms under different contracts. In the majority of cases, the practice has been to appoint one single team to do both. Reasons cited are that it maintains continuity, it benefits from institutional memory, and it can save time in getting transactions completed. However, in recent years criticisms have emerged about this practice, including:

- It creates an incentive for consultants to pre-determine that a given project IS “feasible” even before the feasibility analysis and proposed PPP Business Case have been completed. Consultants may be motivated by the higher success fees of seeing the project proceed to tendering and award; and
- Governments tend skip-over the important intermediate step of reviewing the feasibility study in detail and then making a clear decision on whether or not the project should proceed to tendering

### Hiring & Overseeing PPP Transaction Advisors

For more practical guidance on hiring transaction advisors, including drafting terms of reference, see the following:

- South African National Treasury PPP Unit’s PPP Manual, Module 3:  
<http://www.ppp.gov.za/Documents/Manual/Module03.pdf>
- PPIAF’s Guide to Hiring and Managing Advisors for PPI Projects:  
[http://rru.worldbank.org/Documents/Toolkits/hiringadvisors\\_fulltoolkit.pdf](http://rru.worldbank.org/Documents/Toolkits/hiringadvisors_fulltoolkit.pdf)

In practice, during the feasibility study phase, many projects grow in terms of their size requirements, their cost estimates, their additional social and environmental mitigation measures, and their need for public sector risk-sharing - to the point where the project may become unaffordable or no longer offer value for the public’s money. Therefore, it is very important that there is a clear and independent review of the project’s PPP feasibility analysis, such as by a Ministry of Finance or a PPP Unit to determine if the project should proceed to tendering or not. Understand that in nearly all cases consultants engaged for both the PPP feasibility study and for transaction advisory services will recommend that indeed the project should proceed to tendering.

The transaction advisor’s responsibilities will be determined by their specific contract and terms of reference, but typical responsibilities include the detailed work required to prepare and procure the PPP transaction including drafting the procurement documents and assisting government with the management of the procurement process. In some cases, transaction advisors are also kept in place during the early years of the PPP project’s operations in order to ensure a smooth transition from the public to the private sectors.

### PPP Transaction Advisors' Success Fees

A success fee is a type of bonus paid to a transaction advisor for achieving certain pre-defined objectives. Typically, success fees are paid to advisors when a transaction has been completed and may be paid on the basis of:

- A percentage of the sales price; or
- Transaction size, such as the estimated size of new investments.

Increasingly, however, governments are exploring new ways of structuring success fees so that advisors have the proper incentives to design successful and sustainable PPP transactions. Some alternatives for designing success fees include:

- Payment on the basis of the number of prospective private operators to submit bids; and
- Fixed value success fees payable upon transaction closure.

Just like PPP agreements, contracts with independent transaction advisors should be competitively procured and should operate with a detailed scope of work to ensure that they are effective in assisting government to structure, tender, evaluate and negotiate projects that offer the greatest value possible, not just in financial terms, but in broader economic terms as well.

It is essential to ensure that transaction advisors' contracts are designed to provide the proper incentives for structuring the transaction in a way that best serves the goals of government and the citizens, taxpayers, and consumers they represent. If transaction advisors are compensated on the basis a very large success fee (see Box above for more information on success fees) or have some implicit or explicit relationship to the downstream financing of transactions, there could be a conflict of interest. They may be motivated to present projects to look more affordable and less risky to Governments than they actually might be, in hopes of seeing them get signed and completed. Transaction advisors should provide advice on PPP structures that bring the government the greatest value, not necessarily the largest transaction with the largest success fee.

### The PPP Feasibility Study

The PPP feasibility study is the key tool that will be used by a government to determine whether or not to proceed with tendering and awarding a PPP contract, and will often be one of the transaction advisor's first deliverables. There are a number of key issues that must be addressed when designing a PPP, most of which can be resolved through the feasibility study. These issues are set out in Table 2.2 below.

**Table 2.2: Key Issues in Designing a PPP**

Key Issue	Addressed by
Scope of the Project	Registration of Project and Project Definition
Affordability of the Project	Feasibility Study
Potential to deliver better value for the public's money (VfM)	Feasibility Study
Form of PPP most likely to maximise value for money	Feasibility Study
Requirement of private finance	Feasibility Study
Optimum scope of PPP	Feasibility Study

Risks to be transferred to private sector	Feasibility Study
Procurement process	Feasibility Study

### Key Elements to the Feasibility Study

Key elements of the feasibility study include (in the order of which they are typically performed):

- **Needs Analysis:** All feasibility studies typically begin by defining the government’s goals in undertaking the project as well as its level of commitment to the project’s success. In this manner, the needs assessment sets the tone for future phases of the feasibility study in which the options for PPP will be evaluated against their potential for facilitating achievement of government’s objectives (this process of matching the form of PPP against government’s objectives was discussed in more detail in Module I). This needs assessment should specify the service to be procured, including the quantity to be procured and the standards to be met. The desired “outputs” of the PPP should be capable of being assessed against clear and measurable performance criteria. This output specification should also be designed within the budgetary constraints of the sponsoring public institution. The needs assessment, in combination with a detailed specification of the desired outputs of PPP, will assist both in the comparison of different procurement options as well as in designing the final output specifications when the PPP contract is drafted.

#### Why Do a PPP Feasibility Study?

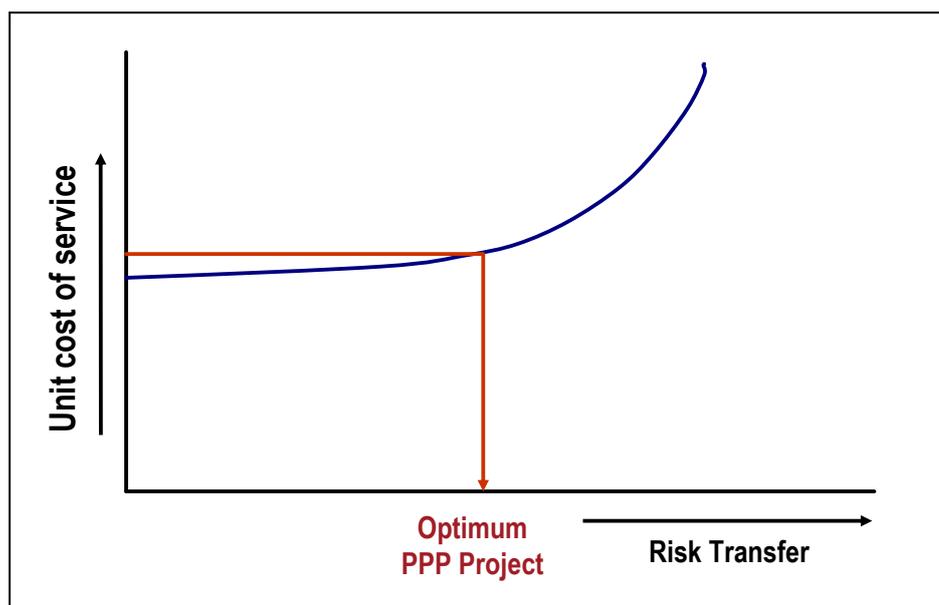
- To confirm affordability of the project to the Government and/or end-users
- To identify the factors that determine if the project could provide better Value for Public’s Money (VFM) (see definition below)
- To assess the potential of a PPP to deliver better VFM
- To identify the risk-allocation form(s) of PPP most likely to deliver VFM
- To establish the need for, availability of and level of private finance required
- To establish the optimum scope of the PPP in terms of output levels of performance
- To identify the parameters to be used to assess and reconfirm whether VFM benefits are still being offered at the procurement stage
- To provide a sound basis for the PPP secretariat to decide on procurement approach

- **Affordability Assessment:** The affordability assessment identifies the *current cost* to government of providing a service, as well as the total cost of a proposed project, and assesses whether the sponsoring public institution can assume that cost within its forecasted budgetary resources. It is used to assess the affordability of the proposed project in terms of the sponsoring institution’s budget over the proposed term of the project and to determine the impact of the proposed project on user fees or tariffs currently charged for the service. This assessment is done based on detailed cost estimates (capital, operational and maintenance) to operate the project. As noted previously, if there are significant doubts about the project’s affordability (whether through a PPP contract or through traditional public sector financing, procurement, management) then the project should either be de-scoped to a level that is affordable or else discontinued.
- **Value for Money Assessment:** VFM is an assessment of the whole life cycle cost of the project considering the risks to be transferred. It determines which option (PPP or public) would deliver the better value for the public’s money. It is important that the full costs to the Government of a PPP arrangement are compared to the full costs of a public sector solution, including the additional costs of the risks that the public solution would include. This is called the risk-adjusted public sector comparator. When comparing the costs of a PPP with the costs of a public sector solution these must done a net present value (NPV) basis. In order to offer better value for the public’s money, the net present value of the whole life costs of a PPP would need to be less than the NPV of the whole-life costs of a risk-adjusted PSC. Factors that should also be included in

assessing value for money include the speed and quality of the service delivery under the PPP scenario, broader economic benefits to be gained from the PPP, and the degree to which the PPP will satisfy government's political and social objectives. In performing the assessment, precedents are reviewed, interviews with market participants are conducted and financial modelling is performed.

- **Preliminary Risk Assessment:** The purpose of this assessment is to determine the cases in which it is economically advantageous and appropriate for risks to be transferred to the private sector. It is an initial identification of the project risks and determination of how each risk can best be mitigated and managed, and then recommending which party each risk should be allocated to. The universal principle used in risk assessment is that *each risk should be allocated to that party best able to manage and/or control that risk*.

Figure 2.2: Preliminary Risk Assessment



The rationale for this is that all risks have an associated cost, and the private sector will build into its proposed cost for the PPP each risk which it is asked to take on. Generally, the more control the private sector has over the risk, the less it will “charge” for assuming responsibility of it. Thus, only those risks whose cost can be mitigated or managed more effectively by the private sector should be transferred, otherwise the cost of the project will be unduly high. In performing this assessment, first risks are identified and listed. Next, those risks are allocated to the private and public sector. A risk matrix is designed to capture the results of this risk allocation. Next, a qualitative risk assessment is performed. Potential impacts of risks are assessed and a risk management plan is designed. Finally, the risks are quantified and monetary values are attached to the risks. In this manner, a risk adjusted project cost can be determined. Figure 2.2 above depicts the concepts underlying a preliminary risk assessment.

- **Stakeholder Assessment:** The feasibility study provides an important and early opportunity to identify a project's key stakeholders and to evaluate the likely impact that the project will have on them. By conducting a stakeholder “mapping” exercise, government will have the information and tools required to take a more proactive approach towards communicating with stakeholders, managing their expectations, and developing effective mitigation measures to protect affected stakeholders. In addition, early interactions with stakeholders can provide valuable feedback that can be used in project design. In South Africa, for example, the feasibility study is used to examine the potential impact of the project on black economic empowerment (BEE) as well as

local economic empowerment (LEE), allowing the government to more clearly lay out any targets for BEE/LEE so that these can be reflected in the project design and any output specifications.<sup>1</sup>

- **Institutional and Human Resources Assessment:** Any project involving institutional change (including changes in management) will have an impact on the existing staff of that public institution. In some cases, such as the concession of an existing infrastructure network or asset, public sector employees may need to be transferred to employment arrangements with the new private concessionaire. The details and impacts of these changes need to be identified, analysed, and measured including severance packages, estimates of overstaffing levels, estimates of new compensation and employment terms, etc. As part of the feasibility analysis, it is critical to understand the nature and number of staff that will be impacted by a project, quantify the cost (if any) of changes brought about by the project, and formulate a clear and concise plan for communicating with staff and addressing their needs and concerns in a fair and equitable manner. In almost all PPPs, the line ministry must have the institutional capacity and skills to monitor and oversee a new private PPP company that will be delivering public services. Often such line ministries will need to design and establish new PPP contract management and performance monitoring units for the first time. The feasibility study should both identify this need as well as estimate the costs and resources required for this.
- **Bankability Assessment:** This evaluation is required when a PPP will require new long-term capital investments and private finance is needed. Its purpose is to determine whether the project will provide sufficient revenue to attract private finance. Factors that need to be assessed include:

- The contractual relationships including their stability and assumption of risks;
- The security of the underlying cash flows which would result from the project; and
- Opportunities for financial structuring.

More information on the requirements of PPP financing, including limited-recourse project financing will be provided in the next module of this online course: Module III.

- **Legal Viability Assessment:** The legislative and contractual circumstances of the proposed PPP must be evaluated to determine whether the arrangement complies with all existing laws and regulations. The legal viability assessment is thus a review of the contractual relationships involved in and the legislative viability of the proposed project. Key issues to be explored in this assessment would include whether government actually holds the legal authority to enter into the PPP contract and to take other related actions such as introducing end-user charges for the service. In practice, Governments have been sued in local courts on the basis that the public institution lacked the legal authority to award such a contract to a private service

### Key Essentials of PPP Feasibility Studies - Summary

- Needs analysis
- Affordability assessment
- Value for money assessment
- Preliminary risk assessment
- Stakeholder assessment
- Human resources assessment
- Bankability assessment
- Legal viability assessment
- Market testing
- PPP option selection
- Indicative implementation plan

<sup>1</sup> For more on BEE in PPPs in South Africa, see the “Code of Good Practice for BEE in PPPs”, (Republic of South Africa, National Treasury Public-Private Partnership Unit, “PPP Manual”)

provider.<sup>2</sup> This assessment should also review the effect of the proposed PPP on existing contractual relationships and examine the legal effect of the PPP on employees.<sup>3</sup>

- **Market Testing:** To implement a PPP, government must find a qualified private partner that is willing to enter into the PPP arrangement. If there are no qualified private bidders or if those that are qualified are not interested in bidding on the arrangement, the PPP will not move forward and valuable resources (both in terms of time and money) will have been wasted. To avoid such a situation, the PPP feasibility study should include market testing. This is an assessment of the potential field of qualified bidders for a PPP, both within the local market and, in some cases, internationally. If there are no qualified private firms within the local market, market testing will help the government to understand that international competitive bidding will result in better bids. It can also provide government with an opportunity to structure the deal such that it encourages the international private partner to build the capacity of the local private sector in order to ensure the existence of qualified private partners in the future. Market testing also includes an assessment of the degree to which those bidders who are qualified would be interested in bidding on a prospective PPP. If bidders are not interested, government should make an effort to determine why this is the case, and if appropriate, adjust the project's scope, or risk-sharing arrangements accordingly. Often such project's require more public sector contributions to become attractive to private bidders, and Governments must determine if such adjustments are still affordable and if a PPP would still provide better value for the public's money.
- **PPP Option Recommendation:** This process is undertaken to determine which specific form of PPP will result in the best value for money available. With respect to the procurement option, the PPP model can be designed around a number of procurement arrangements including, in increasing order of the magnitude of the private sector's involvement: service contracts, management contracts, leasing arrangements or some type of concession arrangement, such as a build operate transfer (BOT) arrangement. These options were explained in detail in this online course's previous module: Module I.
- **Indicative Transaction Implementation Plan:** This is a detailed, time-bound plan describing the procurement process to be adopted including the marketing, pre-qualification and procurement

### Nurturing a Competitive Private Market for Key Public Services:

In Chile, a very well designed rural electrification initiative is delivering some of the best PPP results in the Latin American electrical sector. Much of this success is the way in which the program's design creates competition on a variety of levels: "among communities, for financing of their projects; among distribution companies, for implementation of their projects; and among regions, for the funds provided by the central government." This diversification in the levels and types of competition ensures that, while a competitive market might not exist, for example, in a specific region, the project as a whole remains competitive and results oriented. [Click here for more information.](#)

<sup>2</sup> For example, one especially innovative PPP was the City of Nairobi's (Kenya) "Adopt-A-Light" program. The City was able to get private firms to pay for installing and operating street lights throughout key areas of the city in exchange for letting the firms place advertising signs the light poles. While this provided lighting for neighborhood and traffic safety at no cost to the city, its legality was challenged in 2007 on the grounds that the City Council and the Adopt-A-Light organization did not have the authority or legal standing to award such PPP contracts. See: <http://www.adopt-a-light.com/default.php>

<sup>3</sup> See, as an example of legal risk, a recent judgment handed down by the High Court of South Africa relating to the legality of toll collection on a PPP toll road. (<http://www.businessday.co.za/articles/article.aspx?ID=BD4A223024>)

plans. The implementation plan would typically also include the resources required and key milestones, such as required government approvals or donor agency “no objections”.

Figure 2.3: Outcomes of PPP Feasibility Study

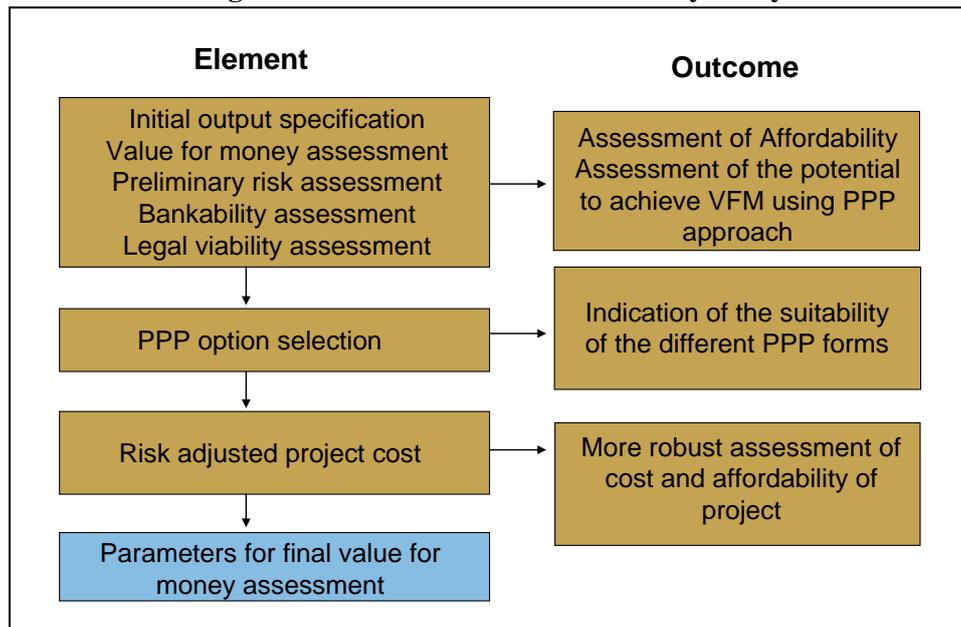


Figure 2.3, above, depicts the outcomes that result from a PPP feasibility study. Ultimately, these outcomes will provide government with the information it needs to conduct a final, updated value for money assessment and thereby take a clear decision as to whether and in what form to move forward with the PPP.<sup>4</sup>

As mentioned previously, it is important the Government take a clear and independent decision on the results of the PPP Feasibility Study and whether to proceed to tendering or not. Understand that line ministries and PPP consultants that have spent months on PPP feasibility studies (and even the donor agencies that are funding PPP feasibility studies) often have a bias toward pre-assuming that a PPP project is feasible and should proceed to tendering.

### PPP Value Assessment

South Africa’s National Treasury Public-Private Partnership Unit advocates the inclusion of a “Value Assessment” as part of any feasibility study for PPP.<sup>5</sup> The purpose of a value assessment is to enable government to determine whether PPP is the best way in which to structure a project. In South Africa, the Government has defined three clear, distinct tests that determine the value of a PPP approach.<sup>6</sup> These are:

- Is it affordable?
- Does it appropriately transfer risk from the institution to the private party?
- Does it provide value for money?

<sup>4</sup> See Modules 2 and 3 of the Republic of South Africa, National Treasury Public-Private Partnership Unit, “PPP Toolkit for Tourism,” which deals with feasibility studies for small cap and large cap tourism PPPs respectively ([http://www.ppp.gov.za/Toolkits/Tourism\\_Final/Toolkit.htm](http://www.ppp.gov.za/Toolkits/Tourism_Final/Toolkit.htm))

<sup>5</sup> Republic of South Africa, National Treasury Public-Private Partnership Unit, “PPP Manual” p. 17.

<sup>6</sup> Treasury Regulation 16 to the Public Finance Management Act (PFMA)

Key to all of these tests is the use of a Public Sector Comparator (PSC) model. A PSC model estimates the cost of undertaking the same tasks envisioned for the PPP (on the basis of the outputs specified) using a traditional public sector procurement, in terms of the net present value (NPV) of the project and on a risk-adjusted basis. The results of the PSC will help government determine whether a particular project should be undertaken as a PPP or should remain an entirely public responsibility. The three tests listed above are used to determine which approach – PPP or public provision – will result in the best value. By way of practical example, the South African Revenue Service cancelled a PPP Tender (which had already reached the final stages of procurement) for its proposed Container Cargo Scanning Initiative, as “the value for money calculation performed by SARS at the feasibility study stage has been revised, and the updated Risk-Adjusted Public Sector Comparator now indicates that SARS can no longer show that the cost-efficiency and effectiveness of outsourcing the operation of the scanners would be better value for money”.

### **Is it affordable?**

The feasibility study process described in the previous section includes an “affordability assessment.” The key to this assessment is an evaluation of whether the proposed project is viable given the budget and other available resources of the sponsoring institution. This evaluation is undertaken by comparing both the cost of the PPP and the results of the PSC with the sponsoring institution’s budget, including medium-term expenditure frameworks and projections, in order to determine which is affordable. If the PPP is not affordable, government can use the models to determine which aspects of the PPP must be revised in order to bring it within the realm of affordability.

### **Does it appropriately transfer risk from the public institution to the private party?**

Key to any PPP is the goal of transferring risks that can be better managed by a private party. In traditional public sector procurement processes, government is exposed to a wide range of risks that often have significant implications for project costs. Nonetheless, government does not typically assign a value, or price, to these risks, and the result is often cost overruns, completion delays, and unreliable levels of service delivered.

Through PPPs, significant elements of risk are transferred to private sector service providers who are often in a better position to manage such risks. However, any risk that a private provider is expected to take on represents a potential cost to that private party and that cost is built into their overall cost of the PPP.

A key process, therefore, in considering a PPP is to systematically identify and evaluate the potential project risks. Using this risk assessment process, project risks are identified, analysed for their impact size and probability, and allocated to either the public or private sector or are “shared.” This is done based on existing data on similar project experience and research. The result of this exercise is a risk matrix.

After developing the risk matrix, the risks that have been identified are then quantified and modelled. The potential monetary costs of the risks are determined and the probability (in terms of likely distribution) is considered. This requires technical advisors who are experienced in calculating the project risks of PPPs. Software is then used to determine most likely risk outcomes. This process allows a risk adjustment to be applied to the project costs.

For example, let’s assume we are evaluating the risk for a toll road project. One of the factors we might consider is the revenue risk (see below for more on this) – in this case, the risk that there will not be sufficient ridership of the toll road by drivers to generate the revenues needed to meet all of the project’s costs (ie operations & maintenance, debt repayment, and reasonable expected return on equity). One reason that this might occur is if a parallel, competing, non-tolled road is made available as an alternative route to drivers. To quantify this risk, we would first need to determine the financial impact that this risk would have on the project, and then the likelihood that this risk will occur. Let’s assume in this case that the impact of the risk is US\$ 500,000, and that there is a 20% likelihood that

this risk will occur. In this case, the monetary value of this risk to be used in calculating the risk-adjusted PSC would be US\$ 100,000. Figure 2.4, below, illustrates this calculation.

Figure 2.4: Quantification of Risk

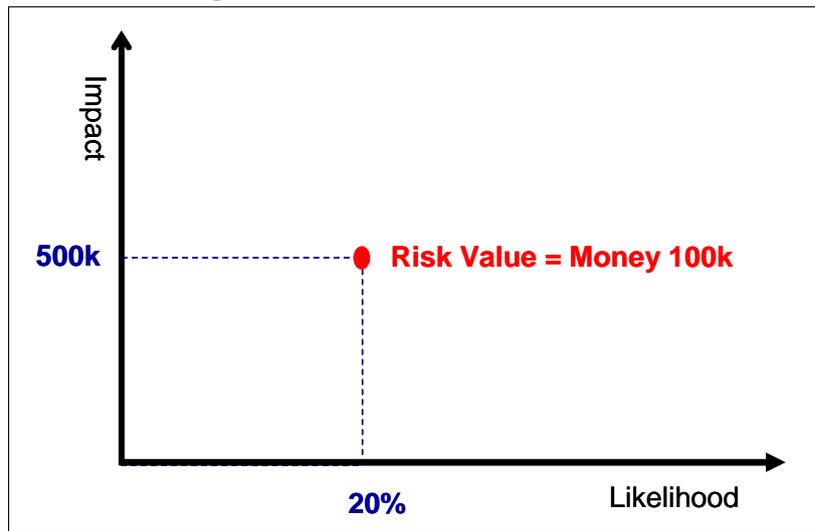


Figure 2.5, below, summarises the risk identification and evaluation process, and the outcomes of that process.

Figure 2.5: Risk Identification and Evaluation

<u>Step</u>	<u>What to do?</u>	<u>How to do it?</u>	<u>Output</u>
Identify Risks	<ul style="list-style-type: none"> <li>List all risks associated with the project</li> </ul>	<ul style="list-style-type: none"> <li>Use existing experience</li> <li>Risk workshop</li> </ul>	<ul style="list-style-type: none"> <li>Risk matrix</li> </ul>
Evaluate Risks	<ul style="list-style-type: none"> <li>Categorise impact and probability (high, medium, low)</li> </ul>		
Quantify Risks	<ul style="list-style-type: none"> <li>Quantify the impact (Money) and probability (likely distribution)</li> </ul>	<ul style="list-style-type: none"> <li>Risk workshop</li> <li>Technical advice</li> </ul>	<ul style="list-style-type: none"> <li>Risk adjustment</li> </ul>
Model Risk	<ul style="list-style-type: none"> <li>Use existing software to model most likely risk outcome</li> </ul>		

There are a number of potential project risks, the applicability of which varies from sector to sector and indeed from project to project. However, general risks which should be considered often include:

- Design:** Design risk is the risk that the specifications included in the tender documents are flawed and/or that the design of the facility(ies) to be constructed will be flawed or otherwise not result in the required level of service quality or productivity;
- Construction:** Delays in completion and cost overruns are both examples of construction risk. Construction risk also includes the possibility that the quality of construction will not meet the specifications laid out in the contract;

**Operating and maintenance:** This includes the risk that the service will not meet quality or productivity standards defined in the contract, as well as the risk of environmental contamination from operations.<sup>7</sup>

- **Demand:** Demand risk occurs when the demand for service under the PPP is less than expected, and results in a shortfall of projected revenues for the private operator, or when demand is much higher than expected, and the private operator is unprepared to meet it;
- **Political:** Expropriation, government interference, and the cancellation or suspension of contracts for political reasons are all examples of political risk;
- **Revenue:** Also sometimes referred to as “commercial risk,” revenue risk refers to the security of cash flows under the project, the likelihood that user fees will be affordable to users and that they will be willing to pay them, and the degree to which revenue guarantees or contractual provisions are enforceable;
- **Currency:** Current risk includes exchange rate risk and convertibility risk. Exchange rate risk arises when exchange rates fluctuate in unpredictable ways, and currency risk refers to the possibility that government might not allow the private operator to convert local earnings into foreign exchange and send it overseas;
- **Interest rate:** This is the risk that unforeseen fluctuations in interest rates will impact the financial viability of the project;
- **Regulatory:** Regulatory risk refers to the degree to which the PPP is subject to a fair, clear, consistent and predictable monitoring and enforcement scheme that includes acceptable and enforceable measures for dispute resolution. This would take into account the results of the Legal Viability Assessment referred to earlier.
- **Force Majeure:** Force majeure events are “acts of god” (and therefore not caused by the actions of either party to the contract) such as floods, riots, earthquakes, and tsunamis.

The above risks and their costs are factored into the PSC model to come up with a *risk adjusted* PSC. This model can then be used as a decision-making tool to determine the best allocation of risks between the public and the private parties to a PPP.

### Does it provide better Value for the Public’s Money?

The PSC seeks to compare the costs of a PPP to the cost of traditional government procurement procedures. The risks inherent in the project are included in this comparison, which makes up part of the value for money equation. There are also non-monetary aspects of the value for money equation such as service quality and reliability.

In determining value for money, the following equation can be utilised:

<sup>7</sup> See <http://www.gautrain-env.co.za/index.php?ct=4> for a summary of environmental processes and delays relating to the R20bn Gautrain PPP (a rapid rail link between Tshwane, Johannesburg and Johannesburg International Airport).

See <http://www.businessday.co.za/Articles/TarkArticle.aspx?ID=1895007> for an article relating to the Equator Principles, which seek to elevate the status of environmental issues in project finance analyses.

### Value for Money Assessment

- Identify factors that represent VFM
  - risk transfer
  - reduced whole life costs
  - speed of implementation
  - quality & reliability of service
- Collate quantitative and qualitative evidence
  - precedent review → identify risk
  - market sounding → quantity risk
  - financial modelling → establish VFM
- Assess potential for value for money

- Present value of public sector base cost (A)
- Expected PV of risks retained by the public sector (B)
- Present value of risk-adjusted public sector base cost (i.e.  $C = A + B$ )
- Present value of expected payments to private sector operator (D)

If  $C > D$ , then the PPP would offer better value for the public's money.

PSC & Value for Money		Public Sector Comparator: Example	
<ul style="list-style-type: none"> <li>• The Public Sector Comparator seeks to compare the costs of a PPP to the cost of traditional government procurement.</li> <li>• The inherent costs of risks are included in such a comparison, which makes up part of the value for money "VfM" equation.</li> <li>• There are also non-monetary aspects of value for money</li> </ul>	<b>A</b>	PV of Public Sector Base Cost	<u>200m</u>
	<b>B</b>	Expected PV of risks	<u>50m</u>
	<b>C</b>	Expected PV of outturn costs	250m
	<b>D</b>	PV of expected payments to PPP supplier	220m
	<b>C &gt; D: so PPP = good VfM in this case.</b>		

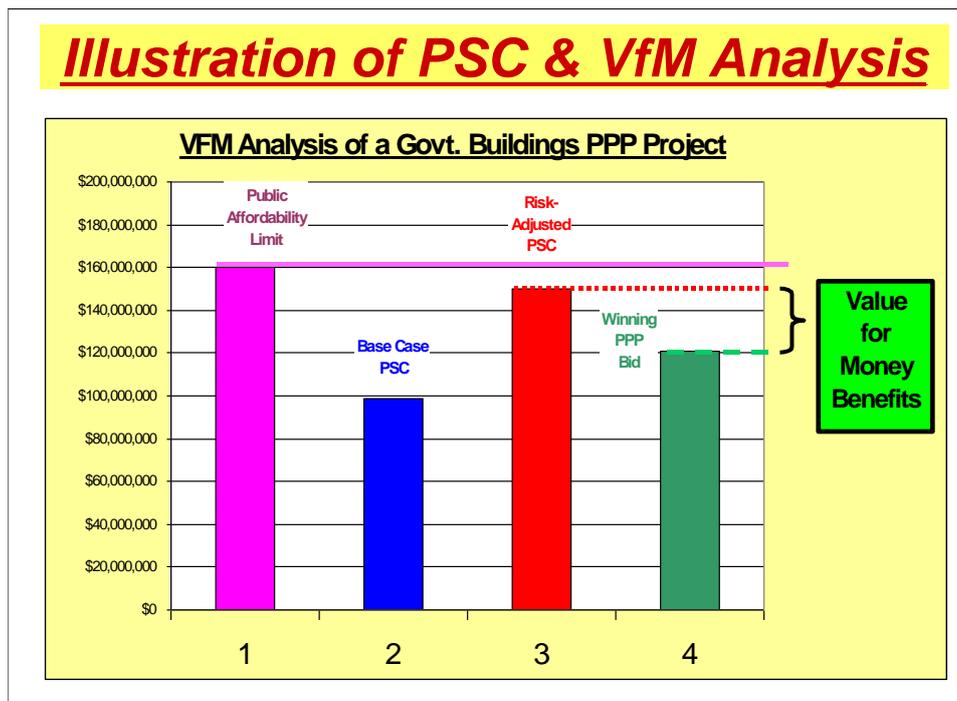


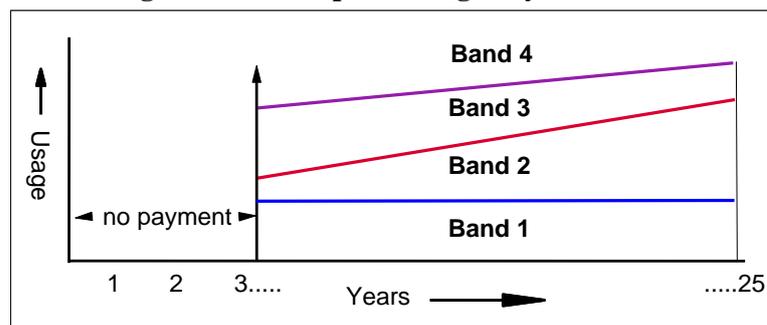
Figure 2.6 - Illustration of the process of comparing the affordability limit, the Base Case PSC, Risk-Adjusted PSC, and the Cost of the Winning PPP Bid to determine if Value for Benefits are provided

### PPP Payment Formulas and Mechanisms

In determining whether to implement a project as a PPP or a public sector procurement, one of the factors that is considered in the course of evaluation is the payment mechanism to the private partner. There are four basic forms of payment that may be used in PPPs. These include:

- **User charges:** Payments made by the end users of the service provided. Payments can vary based on the category of the user and the timing of the usage. The applicability of these charges depends on government policy, availability of alternatives, elasticity of demand, practicality of applying, ability to forecast demand and the legality of introducing such charges. An example is the toll road project referred to above, where drivers pay the user charges as toll.
- **Usage payments:** These are charges paid by the government based on actual volumes used of the contracted service (see Figure 2.6, below). Typically, usage is banded by volume, and penalties or reductions are made for unsatisfactory levels of performance.

Figure 2.6: Example of Usage Payments



- **Availability payments:** These payments are paid by government based on the available capacity provided by the project. Payments may vary based on timing. They are similar to usage payments except that the key measure is availability of the service. Precise definitions of availability and unavailability are key. For example, the Bloemfontein and Louis Trichardt maximum security PPP prisons in South Africa are based on availability payments, where the procuring institution pays the private sector prison operator per “Available Inmate Place” (prison cells being available according to specifications) – irrespective of whether or not the cell is actually occupied. Accommodation sector PPPs, such as schools, hospitals, government office buildings, public housing, prisons, etc. are often structured based upon such availability payments.
- **Service performance payments:** These payments are based on the ability to meet specified performance standards. Key is the ability to accurately measure and monitor discrete, individual performance levels.

In practice, many PPP projects feature payment mechanisms that are a combination of the above types.

By incorporating the proposed payment mechanism into the modelling exercises undertaken during the feasibility study, government can determine their impact on affordability (measured both in terms of the impact on the institution’s budget, as well as on the end user of the service, if applicable) and make adjustments to the project accordingly. For example, if a PPP for water services is initially proposed to be financed by user charges, the feasibility study will help government to understand the impact that the PPP will have on consumer tariffs. However, if the feasibility study reveals that these tariffs would be unaffordable for some or all end-users, this exercise will help government to make decisions such as reducing the amount of investment required by the private operator, phasing

investments in over time, or providing the operator with a subsidy (often called a “Public Service Obligation” payment) that will eliminate or reduce any required tariff increases.

### Conclusions

Ultimately, the value of the feasibility study lies not in its ability to force a project to proceed to tendering, but in its use as a decision making tool that helps government understand the implications of its choices for the delivery of essential public services and infrastructure. The role of the feasibility study can be best understood through the proposition that if Governments do want to end the vicious cycle of public infrastructure projects that cost more than planned, are late in completion, that do not perform as expected, and for which Governments, taxpayers, and consumers must still pay – then Governments must be willing to spend more time and money early on the project cycle to do better analyses, better planning, and to structure better risk-allocation through PPP feasibility studies and contracts.

## Module 2: Content Assignments

In order to successfully complete your work on the Content component of this Module, you must complete the following:

- Read the required background reading materials:
  - Republic of South Africa National Treasury PPP Unit, “PPP Manual, Module 4.” <http://www.ppp.gov.za/Documents/Manual/Module 04.pdf>
  - A Guide to Guidance: A Sourcebook for PPPs, by European PPP Expertise Centre (sponsored by the European Investment Bank, EIB), February, 2011 <http://www.bei.org/epec/resources/guide-to-guidance.pdf>
  - “Value for Money Assessment Guidance,” United Kingdom: Her Majesty’s Treasury (November, 2006) [http://www.hm-treasury.gov.uk/d/vfm\\_assessmentguidance061006opt.pdf](http://www.hm-treasury.gov.uk/d/vfm_assessmentguidance061006opt.pdf)
- Read this Module II Content piece
- Answer the following question (with the answer posted to the Discussion Board of the online learning platform) relating to the Content piece:
  - Do you think there would ever be a case in which a PPP should be pursued even if the value for money assessment revealed that the project would be less expensive using traditional public sector procurement? Why or why not? Please explain and give an example.
- Read other participants’ postings to the Discussion Board and provide substantive comments (in the Discussion Board) on two other participants’ answers to the Content question.

In addition, participants may elect to read the following *optional* background reading materials for this module:

- How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets, by Edward Farquharson, Clemencia Torres de Mastle, and E.R. Yescombe, with Javier Encinas, The World Bank and PPIAF, 2011. <http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/publication/How-to-engage-with-private-sector-Clemencia-Farquharso-Yecome-Encinas.pdf>

## Module II: Project Appraisal & Feasibility Studies

- PPPs, The Public Sector Comparator, and Discount Rates (Working Draft – Comments Welcome), by Chris Shugart, 2008. <http://jdi-legacy.econ.queensu.ca/Files/Conferences/PPPpapers/Shugart%20Sept%2015%20version.pdf>
- Public-Private Partnerships Business Case Development, by Department of Finance and Administration, Australian Government, December, 2006  
[http://www.finance.gov.au/publications/fmg-series/docs/FMG\\_Business\\_Case\\_Development\\_FINAL.pdf](http://www.finance.gov.au/publications/fmg-series/docs/FMG_Business_Case_Development_FINAL.pdf)
- Leigland, James, “Is the Public-Sector Comparator Right for Developing Countries?” *Gridlines Note No. 4* Washington, DC: Public-Private Infrastructure Advisory Facility (April, 2006)  
<http://www.ppiaf.org/Gridlines/4africa.pdf>
- Case Study on the Public Private Partnership between Eastern Cape Department of Health and Life Healthcare Group in the Humansdorp District Hospital for the PPP Unit of the National Treasury, by Wits Business School, 2007. (Look under “Case Studies” at <http://www.ppp.gov.za/>)