Western Balkans Investment Framework WBIF

European PPP Expertise Centre

A Guide to the Qualitative and Quantitative Assessment of Value for Money in PPPs

Public-Private Partnerships in the Western Balkans

2018

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Abbreviations

BH	Bosnia and Herzegovina
CAPEX	Capital Expenditures
ECBA	Economic cost-benefit analysis
EIA	Environmental impact assessment
EIB	European Investment Bank
EPEC	European PPP Expertise Centre
ESIA	Environmental and social impact assessment
EU	European Union
FYROM	Former Yugoslav Republic of Macedonia
ICT	Information and Communications Technology
NFB	Non-financial benefits
NPV	Net present value
OB	Optimism bias
OPEX	Operating expenditures
PPP	Public-private partnership
PSB	Public sector benchmark
PSC	Public sector comparator
SIA	Social impact assessment
SLA	Service level agreement
SPV	Special purpose vehicle
UK	United Kingdom
VfM	Value for Money
WBIF	Western Balkans Investment Framework

Background Note

This Guide has been prepared by the European PPP Expertise Centre (EPEC) of the European Investment Bank as part of its mandate from the Western Balkan Investment Framework (WBIF) for *Strengthening the Capacity of the Public Sector to Undertake PPPs in the Western Balkans* (Albania, Bosnia Herzegovina, FYROM, Kosovo*, Montenegro and Serbia).

This Guide to VfM assessment belongs to a series of EPEC guidance documents that aim to strengthen the capacity of the governments in the Western Balkans (the Region) to prepare and procure PPPs (Figure 1).

Additional guidance has been produced alongside this Guide as part of the WBIF EPEC assignment, namely:

- **A Guide to Preparing and Procuring a PPP project**

  This document presents current good practice from the European PPP market that is relevant to the public officials in the Western Balkan region who are responsible for launching and implementing PPP projects. It provides a framework for making the many decisions that are required by a public authority when it is preparing and procuring a PPP project.

- **PPP Procurement Handbook**

  This document describes in more detail the steps that are normally followed during the procurement phase and, more particularly, the features that would typically be included in the pre-qualification information document and tender invitation document by the public authority.

- **A Guide to the Main Provisions on an Availability-based PPP Contract**

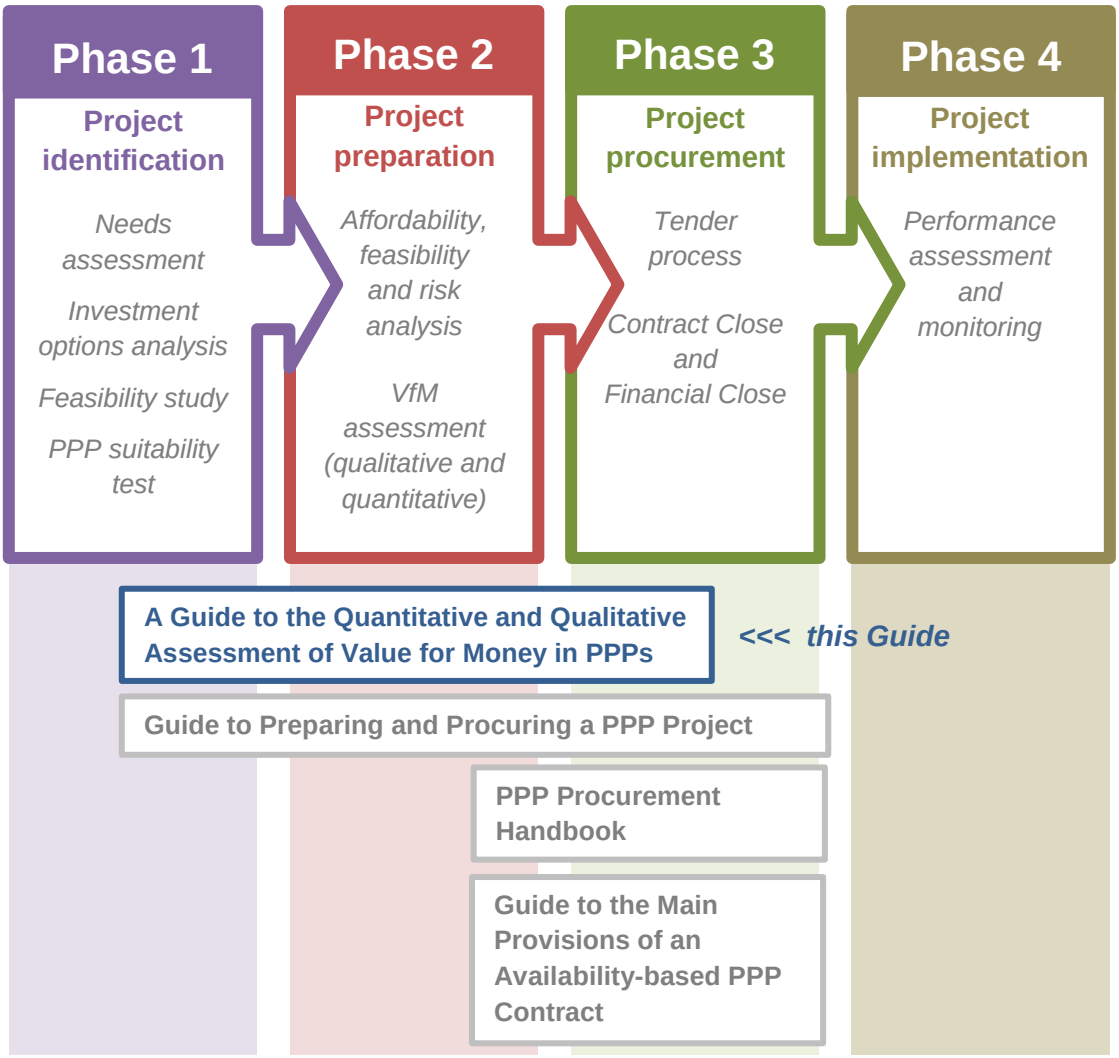
  This document provides guidance on the good practice to be adopted by public authorities when considering the main provisions of an availability-based PPP contract. Whilst not specific to any sector, the guidance document considers the context of the PPP market in the region and the legislative environment of the Western Balkan countries.

Figure 1 shows the applicability of the various guidance documents that have been prepared under the WBIF EPEC assignment to each of the phases of a PPP project cycle.

To assist the PPP practitioner, this Guide also provides details of other sources of information and guidance relevant to the subject, where individual issues and PPP practices can be studied in greater depth. These are referenced throughout the Guide to VfM assessment and are summarised in the Section 4.5 and Section 5.8 at the end.

* This designation is without prejudice to positions on status and is in line with the United Nations Security Council *Resolution 1244/99* and the International Court of Justice Opinion on the Kosovo declaration of independence.

Figure 1 – EPEC WBIF Guidance documents facilitating PPP implementation



1. Introduction

Investment in social and economic infrastructure is crucial to accelerating sustainable, balanced economic growth and inclusive social development in Western Balkan countries. In the face of budgetary constraints, and with the expectation of benefitting from substantial efficiency gains through the participation of the private sector, governments in the Region are turning increasingly to public-private partnerships (PPPs) as one way to accelerate infrastructure investment, access private financing and improve service delivery.

A *Value for Money* (VfM) assessment is used by public authorities to inform, justify and communicate the decision to use a PPP approach to deliver public infrastructure and related services. It can also be used as a decision-making tool in public procurement, for example, to identify the best procurement option and select the best PPP tender for a particular project.

Unlike an *Economic cost-benefit analysis* (CBA), however, a VfM assessment does not verify whether a project is either economically viable or a good use of public resources.

A VfM assessment is not straight-forward and there are limitations to how and when it can be used. To be fully useful, it requires high quality data and a complete understanding of the interaction between the various components that make up a PPP, including design, construction, operations (i.e. delivery of services), maintenance and - of course - finance.

A VfM assessment requires careful application. The public authority must be mindful at all times of the constraints imposed by the assumptions that need to be made, while acknowledging that the data available will not always be complete or perfect.

Practice within public administrations across Europe differs as to how, when and by whom VfM assessment is done, with careful consideration being given to the capacity and expertise required to support public authorities in the delivery of PPP projects.

Ultimately, though, the approach taken by any public authority should be consistent with national policy for assessing all infrastructure investments (such as in the selection of the discount rate or in the method of measurement of costs and benefits).

This means that robust and credible processes are also needed on the public side - supported by transparent and consistent public guidelines - to provide confidence in the results of any VfM assessment.

1.1 Aim and structure of this Guide

This Guide aims to provide public authorities in the Western Balkans with a practical approach on how to conduct quantitative and qualitative VfM assessments. The approach is based on current European practice with a focus on how to use a VfM assessment to select the best option for delivering a project. The Guide aims to help:

- officials within government ministries and regional authorities who are seeking to identify possible suitable PPP projects or establish PPP infrastructure project pipelines;
- public authorities responsible for reviewing and approving VfM assessments (prepared by others) as a part of their process of sanctioning investments; and
- project teams within public authorities (who are responsible for delivering a project and are required to apply a VfM assessment to analyse and justify the PPP mode), to identify the main constraints and uncertainties within the project and to compare delivery options.

Qualitative and quantitative VfM assessments are the two main complementary approaches to assessing VfM. They are often combined in an overall VfM assessment approach. Accordingly, the Guide is divided into three parts:

- **Introduction to VfM assessment** which provides an overview of the general purpose, use and timing of a VfM assessment;
- **Qualitative VfM assessment** which provides detailed guidance on evidence-based approaches to examining the suitability of the PPP delivery mode for a project; and
- **Quantitative VfM assessment** which provides detailed guidance on quantitative approaches for the comparison of the VfM of delivery options, including the use of a *public sector comparator* (PSC).

Annex A provides a summary of VfM assessment approaches in selected EU countries.

Annex B provides an example of how risks might be allocated in the PSC and PPP options.

Annex C provides an example of a PPP project risk matrix

The Glossary provides an explanation of commonly used PPP terms.

1.2 Defining Public-Private Partnerships (PPPs)

The term PPP describes a long-term contractual arrangement in which a public authority and a private partner collaborate to deliver public infrastructure (or assets) and related services. Under a PPP contract, the private partner bears significant risks and management responsibilities.

There are two main types of PPP contract:

- **an availability-based PPP** (a type of government-pay PPP) in which the public authority makes performance-based payments to the private partner. Payment to the private partner is linked to the availability and/or use of the asset and the provision of the services; and
- **a concession** (sometimes called a user-pay PPP) in which the public authority grants the private partner the right to generate revenues from the provision of the service (e.g. collecting tolls from users of a bridge). Payment to the private partner is made by the user of the service.

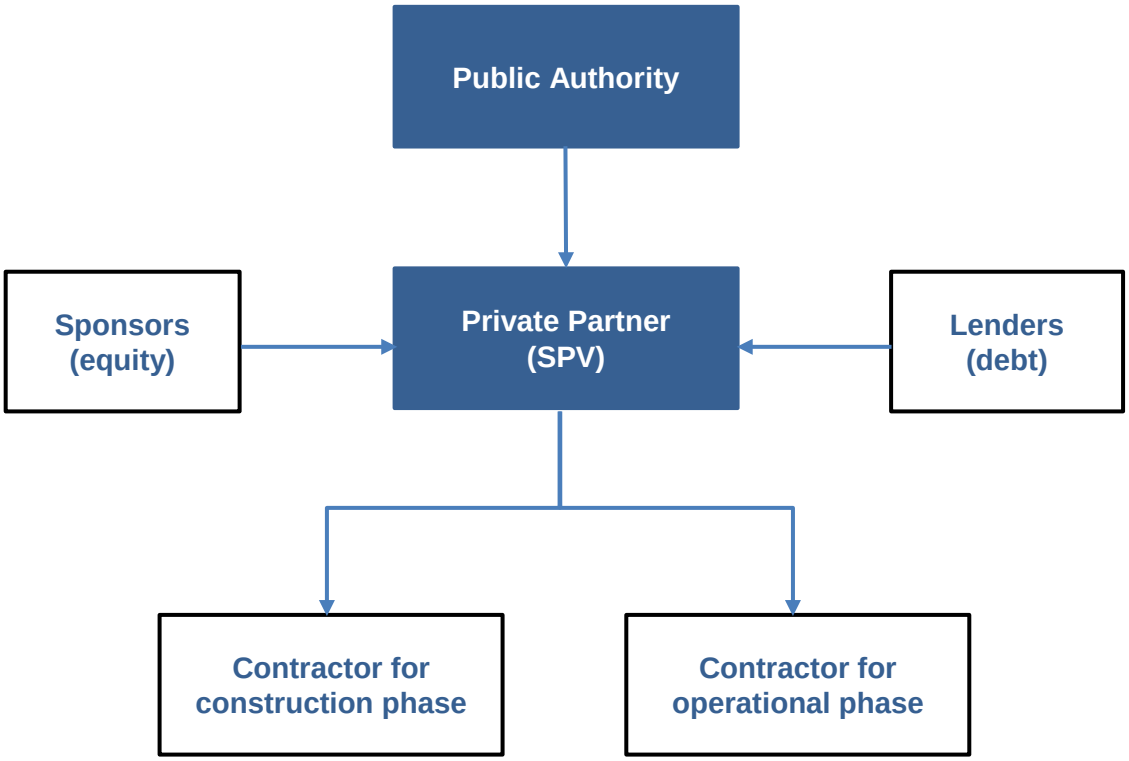
Some PPP contracts combine both these types of payment (i.e. a mixed payment PPP). The common features of a PPP contract are listed in Box 1, while Figure 1 presents a diagram showing the typical structure of a PPP project and the contractual relationships that are created. The principal relationship is between the public authority and the private partner (and defined in the PPP contract).

Box 1 – Common features of a PPP

A PPP typically comprises:

- *a long-term contract between a public authority (the public authority) and a private sector company (the private partner, usually established as a special purpose company or SPV) set up to deliver the project;*
- *a focus on the specification of project service outputs rather than project inputs, taking account of the whole-of-life cycle requirements of the project;*
- *the transfer of project risks to the private partner, notably with regard to designing, building, operating and/or financing the project;*
- *the use of private financing (most often project finance) from lenders to underpin the risks transferred to the private partner;*
- *the remuneration of the private partner either by service payments from the end-users (in user-pay projects or concessions) or through payments from the public authority (availability-based projects) or a combination of both; and*
- *in an availability-based PPP, the use of a systematic means of making financial deductions from the service payment to ensure the delivery of the service to the agreed quality and quantity.*

Figure 2 – Typical structure of a PPP project



1.3 Traditional infrastructure delivery approaches

In contrast to PPPs, traditionally procured infrastructure involves the delivery and financing of public infrastructure and related services by the public authority. The public authority is also responsible for the long-term operation and maintenance of the infrastructure. The public authority also bears most of the risks associated with the integration and optimisation of the various activities within the project.

Commonly-used traditionally procured contracts typically take the form of:

- a build (or construction) only contract, with a separate contract for the design of the infrastructure;
- a design-build contract;
- an engineering, procurement and construction (EPC) contract; and
- an operations and maintenance only contract.

Each of these contract forms involve the transfer to the private partner of different levels of risk in responsibility for the design and construction of the infrastructure.

The operation and maintenance of the infrastructure is often managed under a separate contract with a different private partner.

The key difference between all these contracts and a PPP contract is that the private partner does not assume risks for the delivery of a defined public service associated

with the combined and integrated design, construction and long-term operation and maintenance of the infrastructure. Neither does this delivery approach involve companies that are providing the long-term private sector financing for the contract which are also exposed to these delivery risks.

2. Value for Money assessment

A VfM assessment is commonly used by public authorities as a decision-making tool in the context of public investment. This section introduces the concept of *value for money* and the methodologies used to assess it in the context of selecting the best delivery mode between a PPP option and a traditional approach.

2.1 Value for Money as a concept

When making a decision on whether to use a PPP as a means of project delivery, VfM is considered to be the relative balance between the *value* and the *cost* of the different delivery options that are available. In this consideration of VfM:

- the **value** aspect of VfM comprises the quality and quantity of the service (i.e. the performance level) delivered over the period of the PPP; and
- the **cost** aspect of VfM usually represents the cost to the payer (i.e. the public authority and/or end-users) over the same period to deliver the associated value of the different delivery options, including the costs of managing the risks.

A VfM assessment will identify the delivery option that represents the best balance of long-term, risk-adjusted value when measured against the cost.

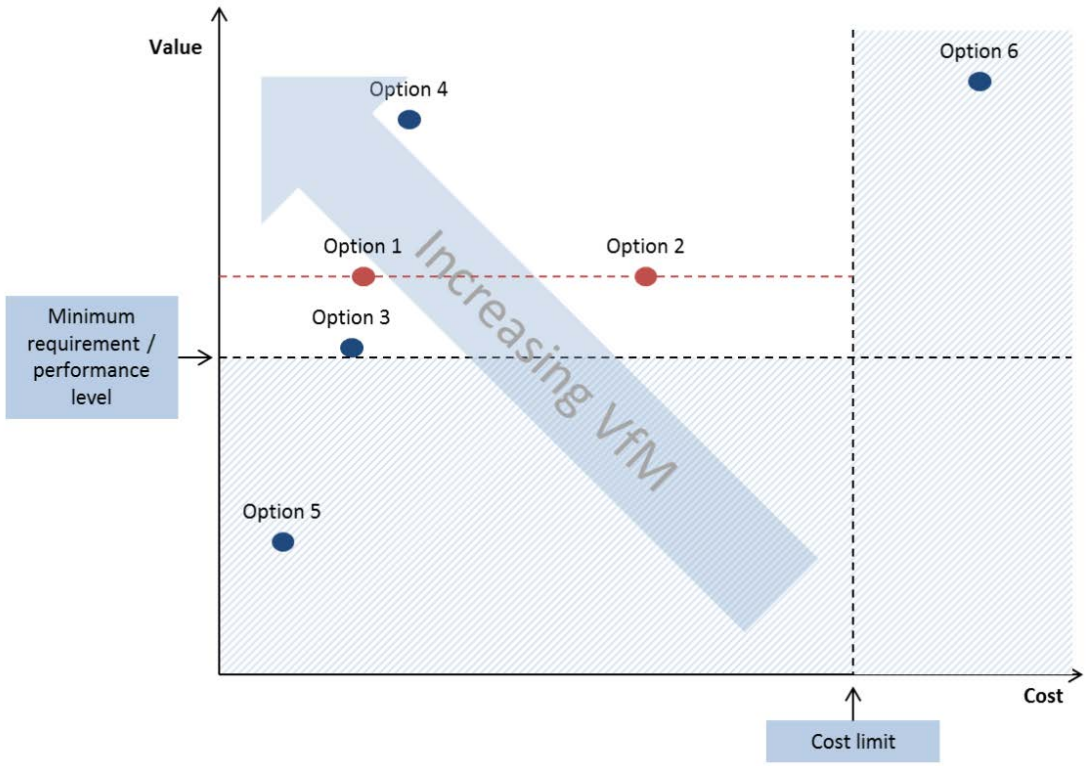
Figure 3 illustrates the concept of VfM when considering a range of delivery modes for an example project. Each delivery option offers a different combination of value (or performance level) and cost.

The figure helps to demonstrate that the VfM of a project is a *relative* concept. Assessing the VfM of an individual delivery option is not, in itself, necessarily useful or meaningful for decision-making. Rather, it is the ability to compare the VfM of one option with the VfM of another (or others) that is useful.

A VfM assessment should only be used to compare options that are plausible and realistic. There are two key limitations to be considered when assessing options:

- whether the delivery option is **affordable** (i.e. there will be some upper cost limit (see Box 2)); and
- whether the option will **meet the minimum quality standard** required of the service (i.e. there will be some lower limit as to a standard of service that is acceptable and/or legal).

Figure 3 – A conceptual illustration of VfM



Source: EPEC (2015), *Value for Money Assessment: Review of approaches and key concepts*

Box 2 – VfM and affordability

VfM and affordability are sometimes confused as concepts. This can arise because the approach to making a quantitative VfM assessment has strong similarities to that for an affordability assessment. However, each approach has a different output:

- *a VfM assessment seeks to determine whether a project should proceed as a PPP; while*
- *an affordability assessment seeks to determine whether the project is affordable for the public authority or end-users and can eventually be paid for. If it is a PPP project, it determines whether the project could be procured as a PPP.*

Thus, in comparing the delivery options presented in the example in Figure 3:

- Options 5 and 6 are not viable as they either do not meet either the minimum service levels required (Option 5) or exceed the affordable cost (Option 6).
- Option 3 has the lowest cost of all the viable options (i.e. it meets the minimum value or standards requirements). However, it has a low value (or performance level) when compared to the other viable options which makes it *poorer VfM* compared with, say, Options 1 and 4.

- Options 1 and 2 (coloured red) have similar levels of value but different costs. In this respect, Option 1 might be expected to represent *better VfM* than Option 2 (it has a lower cost while delivering a similar level of performance).

- Option 4 most likely represents the best VfM when compared with the other options, having a high level of performance but (proportionately) a cost not much higher than Option 1 and below the cost limit.

This quantitative approach can be used to compare a PPP model with a traditional approach to delivering the same project (and services) or to compare PPP tenders.

The VfM concept can improve decision-making by helping to overcome issues that can often be faced in public investment decision-making, for example:

- **cheapest is not always best**: the approach taken in procurement processes can often mean that a public authority is obliged to accept the cheapest solution even when it may not necessarily represent the best long-term value. VfM assessment seeks to achieve the best *balance* between cost and value. This approach is reflected in, for example, the EU procurement principle of the *most economically advantageous tender* (MEAT, being the best *price-quality* ratio), rather than lowest price.

- **providing a focus on long-term costs and benefits**: VfM assessment looks at the costs and benefits over the whole life of the project. This overcomes the tendency for public authorities to consider the immediate or short-term construction costs of a project, while ignoring the long-term operation and maintenance costs in their decision-making.

- **providing a better understanding of project risks**: VfM assessment focuses on assessing costs and benefits that take account of the associated risks. Public investment decisions often ignore the cost of such risks or fail to consider the most efficient way to allocate such risks.

Reference guidance documents

For more information on the procurement principles, please see: A *Guide to the PPP procurement process*, EPEC (2018)

2.2 When to assess VfM

The guidance presented in this document is framed in the context of the *PPP project cycle*. The project cycle is the series of steps that is followed by a typical PPP project from the time that the project scope is initially defined through to its delivery in the form of a PPP contract and a piece of public infrastructure.

The project cycle is divided into four phases, with each phase divided into a two stages:

Phase 1: Project identification

- Project identification and selection
- Appraise the suitability of a project as a PPP

Phase 2: Project preparation

- Managing and planning the process
- Developing the PPP project

Phase 3: Project procurement

- The tendering process
- PPP contract close and financial close

Phase 4: Project implementation

- Contract management
- *Ex post* evaluation

Figure 4 presents a more detailed description of each of the four phases and the stages within each phase, together with a summary of the main activities that are performed. The role and timing of a VfM assessment is also highlighted. The project cycle is described more fully in *A Guide to preparing and procuring a PPP project* (WBIF EPEC, 2018).

In the context of the project cycle, VfM assessment can be used to help inform the public authority's decision at each of the different phases of the project, including whether or not to proceed to successive stages of the project cycle, e.g:

- to prepare a project to be delivered as a PPP;
- to launch the competitive PPP procurement process; and
- to give guidance on selecting the best private sector bid.

Besides supporting the PPP decision, a VfM assessment can also be used to communicate and justify such a decision.

Figure 4 – Phases in the PPP project cycle

Phase 1	Project Identification	
Stage	Step	Activity
1. Project identification and selection	Needs assessment	- *Conduct needs assessment*
	Investment option analysis	- *Collect data and information on the objectives and scope of the project* - *Determine appropriate investment options*
	Feasibility studies	- *Assess the technical, financial and economic feasibility of the project concept (e.g. Economic Cost Benefit Analysis)* - *Conduct an economic viability analysis (e.g. a cost effectiveness analysis)*
	Initial assessments	- *Affordability* - *Risk identification and prioritisation* - *Accounting treatment* - *Bankability*
2. Appraise suitability of project as a PPP	**PPP suitability appraisal and initial qualitative VfM assessment**	- ***Assess a project's suitability for procurement through a PPP mode by examining project characteristics and framework conditions***
Phase 2	**Project preparation**	
Stage	Step	Activity
1. Managing and planning the process	Set up project team and governance structure	- *Set up the project management team* - *Define the PPP project governance structure*
	Engage team of transaction advisers	- *Identify the expertise needs of the public authority team; then* - *Select the advisers to cover these needs*
	Develop project plan and timetable	- *Identify the project activities and the critical path* - *Develop a detailed project plan and timetable*
2. Developing the PPP project	**Project appraisal process**	- *Feasibility studies: scoping and structuring the project* - *Affordability assessment* - ***VfM assessment*** - *Risk analysis and allocation* - *Finance-ability and bankability* - *Market assessment*
	Statistical classification of contract	- *Introduction to statistical approaches*
Phase 3	**Project procurement**	
Stage	Step	Activity
1. Tendering Process	Procurement notice, invitation to pre-qualify and shortlisting of candidates	- *Issue a public procurement notice or contract notice* - *Send an information document and invitation to pre-qualify to parties who express interest in tendering* - *Shortlist the candidates who meet the pre-qualification criteria*
	Invitation to tender	- *Send tender invitation documents to the shortlisted candidates including proposed draft PPP contract*

	Interaction with tenderers	- *Hold one or more meetings with each tenderer to develop potential tender solutions* - *Provide any necessary clarifications to tenderers and update tender documents/draft PPP contract* - *Invite final tenders*
	Evaluation of tenders and identification of the preferred tenderer	- ***Evaluate compliant tenders using the pre-published evaluation criteria.*** - *First-ranked tender selected as preferred or successful tender*
2. PPP contract and financial close	Finalise PPP contract	- *Finalise the PPP contract details with the preferred/successful tenderer* - *Make any agreed non-material changes to the tender PPP contract*
	Conclude financing agreements	- *Lenders to the preferred/successful tenderer carry out their due diligence checks and confirm financing terms* - *With the preferred/successful tenderer, finalise the terms of the financing/ancillary agreements with the lenders*
	Contract award and financial close	- *Issue notice to unsuccessful tenderers of intention to award the contract (standstill period)* - *(Assuming no legal challenge) the PPP contract is signed (contract close) along with all related agreements incl. financing agreements (financial close)* - *All parties satisfy any remaining conditions precedent that are necessary to make the PPP contract effective*

Phase 4	**Project implementation**
Stage	Step
1. Contract management	Attribute management responsibilities
	Monitor and manage project delivery and service outputs Manage changes permitted in the PPP contract
	Manage changes not provided for in the PPP contract
	Dispute resolution
	Arrangements for when the PPP contract ends (*handback*)
2. Ex post evaluation	Develop institutional framework
	Develop analytical framework (including VfM assessment)

2.3 VfM as a part of public policy

Governments around the world define VfM as a policy objective of PPP procurement, often referring to an expected range of benefits. These are frequently described in formal policy documents and guidelines. The nature and purpose of these documents recognises that:

- a decision needs to be taken as to how to deliver a public investment project;
- different delivery options may be available;
- there needs to be a basis upon which the decision is made;
- the decision needs to be communicated in a transparent and rational way;
- there needs to be accountability for the decision, which must stand up to scrutiny;
- the decision should be taken in a way that is consistent with other decisions;
- any *ex post* review of the decision must be based on criteria established at the time of the decision (not at the time of the review); and
- there is a need to deploy sufficient resources (information and skills) to carry out the VfM assessment that supports the decision.

It is considered good practice for a government to set out its policy and to define why PPPs should be considered and the basis for doing so (such as by assessing VfM).

Reference guidance documents

See example of a PPP policy document; *Government policy for the development of PPPs*, Poland (2017)

2.4 Difference between assessing and achieving VfM

Assessing VfM and *achieving* VfM are two different things, i.e. there is a difference between what is *measured* and what is actually *done*.

- **Assessing VfM** is a part of the process that informs the decisions on whether to proceed with a PPP and whether it is possible to reach the objective of delivering VfM.
- **Achieving VfM** should be the public authority's ultimate objective for using the PPP mode to deliver a project and its public services.

VfM assessment is usually a discrete exercise that is performed at distinct points during the project cycle. These are often linked to approval stages of the public authority in the project preparation and procurement phases.

A VfM assessment can be considered as either:

- **an *ex ante* assessment** (i.e. carried out before a PPP contract is awarded) that is used to inform a future decision on how to deliver the project. This can include the decision on whether or not to use a PPP as a delivery option and/or to award a PPP contract. This may be conducted at a number of points during the preparation and procurement process, as previously highlighted in Figure 4 in Section 2.2.

  An *ex ante* VfM assessment is usually the responsibility of the public authority, specifically the project team and its immediate oversight body (e.g. the Steering Committee or Project Board; see Section 3.1 of the WBIF EPEC Guide to preparing and procuring a PPP); or

- **an *ex post* assessment** (i.e. carried out after a PPP contract has been awarded, usually during the operational phase) that assesses past and continuing performance of the PPP contract. This may help to identify possible corrective action (if there are perceived failures in the contract) and to capture *lessons learnt* from the processes used to improve VfM.

  An *ex post* assessment often involves a *performance audit* of the public authority's activities (e.g. to review the quality of the PPP project preparation process, the quality of the competitive process during procurement and the effectiveness of contract management). This type of audit is often the responsibility of a national audit body, but a PPP unit might also carry out reviews to improve policy and practice.

Experience has shown that achieving VfM in a PPP contract is a continuous (i.e. dynamic) activity that takes place throughout the project cycle. It involves a range of different assessment activities that are important elements for achieving VfM, for example:

- conducting risk analyses;
- carrying out market soundings;
- drafting the PPP contract;
- conducting a strong competitive process during the procurement stage; and
- managing the PPP contract during the operational phase.

This Guide focuses on the *ex ante* VfM assessment component of VfM policy.

Reference guidance documents

For more information on the separate topic of *ex post* VfM assessment, see: *Value for Money Assessment: Review of approaches and key concepts,* EPEC (2015)

Managing PPPs during their contract life: Guidance for sound management, EPEC (2014).

2.5 How VfM is assessed

Assessing VfM usually involves a combination of both *quantitative* and *qualitative* approaches.

2.5.1 Quantitative VfM assessment

Quantitative VfM assessment usually involves estimating and comparing the costs of a PPP project delivery option with a public sector traditional project delivery option where the project risks have been valued. The latter is usually referred to as the *public sector comparator* (PSC) or *public sector benchmark* (PSB).

Within the assessment, the cost of each delivery option is calculated on a *present value* basis. This is because the timing of individual costs under the two delivery options are different. In particular:

- under the PPP option, payments are usually made by the public authority (or user in a concession) over the whole duration of the contract, but payment only starts when the service is first delivered, i.e. usually after construction is complete; whereas
- under the traditional (PSC) option most payments are made during the construction phase of the project facilities, with much lower periodic payments made thereafter for maintenance (usually under separate contracts).

The choice of the discount rate used to calculate the present value of the costs can strongly influence the results of the comparative analysis. A higher discount rate will give a lower present value for a project where costs arise later in the contract period. This can result in the PPP option appearing more favourable. This is discussed further in Section 6.7.

As discussed in Section 3.1, both the PPP and PSC project delivery options should be compared on the basis that they deliver the same level and quantity of service over the same period.

2.5.2 Implementing a quantitative assessment

Quantitative VfM assessment involves estimating future cash flows for the PPP and PSC project delivery options. This is can be a complicated process. It relies on the quality of the information available on the estimated construction, operating and maintenance costs (typically over periods of up to 30 years) and the estimated cost of risks. This information is needed for both options. Future revenues from users need to be estimated for a concession.

When making a comparative VfM assessment, an estimate is needed of the likely financing structure of the PPP option (such as ratios of debt and equity) and the terms of such finance (tenor, lending margins, fees, equity returns).

Where the VfM of tenders for a PPP project is being compared, then the discounted value of the payments in the tenders is compared with the PSC.

2.5.3 Quantitative VfM assessment during the project cycle

As outlined in Section 2.2, a quantitative VfM assessment may be used at different stages during the preparation and procurement of a PPP project, namely:

- **during the project preparation phase (Phase 2):** used to compare the estimated costs of a potential PPP delivery option with a potential traditional PSC delivery option and so decide whether or not to proceed using a PPP;
- **during the PPP procurement phase (Stage 1 of Phase 3):** used to compare the relative VfM of different PPP bids that have been received to help inform the decision as to which bid to select; and
- **prior to PPP contract close (Stage 2 of Phase 3):** used to compare the costs of actual PPP bids with the PSC and to help to inform the decision whether or not to sign the PPP contract.

The timing of various quantitative VfM assessment activities is discussed in more detail in Section 6.3.

2.5.4 Qualitative VfM assessment

A *qualitative VfM assessment* involves testing the PPP option against a set of pre-defined suitability (i.e. qualitative) criteria to determine the potential for the PPP option to deliver VfM (see Box 3).

Where possible, the qualitative criteria used should be based on evidence from past projects. If a previous project delivered as a PPP has been shown to be VfM and the project under consideration has similar characteristics, then it too is likely to deliver VfM. Thus, this approach does not try to quantify the VfM of the options under consideration, but looks at the quality of possible outputs and outcomes.

Arguably, the most important driver of VfM in a project is a strong competitive bidding process. Thus, many of the qualitative criteria seek to assess not only the potential market interest in a PPP but also the conditions that are likely to ensure competition. This includes assessing whether a public authority has the capacity and ability to manage the PPP project preparation and procurement process and develop an appropriate PPP contract that is financeable.

Box 3 – Important qualitative criteria to consider

- *the possibility to combine the design, construction, operation and maintenance of a project to optimise its life time costs;*
- *the ability to define the services in terms of clear output specifications which are likely to remain relatively unchanged over the period of the PPP;*
- *the availability of technical and management knowhow and experience from the private sector, not readily available in the public sector, to enable higher service quality and quantity, and/or cost savings;*
- *the existence of strong market interest and therefore competition in the market for the PPP project;*
- *the availability of long-term private sector financing to underpin appropriate risk allocation;*
- *the availability to the public authority of the necessary knowledge, skills, experience and processes to prepare, procure and manage the PPP contract (including access to specialists advisers where necessary); and*
- *sufficient project scale to justify the up-front costs of preparing and procuring the project as a PPP.*

2.5.5 Implementing a qualitative assessment

A qualitative assessment usually involves the use of checklists to test the suitability of the project to be delivered as a PPP. One approach to compiling such a checklist is to make the assessment by considering two main dimensions:

- **to identify a public authority's motivation for using a PPP**

  This assessment seeks to identify the benefits the public authority is looking for and any problems or difficulties it is trying to resolve (e.g. concerns arising from previous projects of delays or cost over-runs to the project, low construction quality or poor long-term maintenance).

- **to identify the drivers and constraints in using a PPP**

  This assessment seeks to identify the possible constraints that would prevent a PPP approach from providing VfM by testing the suitability of the project for delivery as a PPP.

  This *evidence-based* approach compares the potential PPP option against conditions or project characteristics that have been identified previously as likely to be associated with the potential to deliver VfM (e.g. strong market interest in previous similar projects) or to constrain VfM (e.g. frequent changes in the required service).

  Figure 5 provides an example of how this may be done by considering: firstly, *framework criteria* (i.e. are institutional and legal conditions supportive of a PPP

approach?); and, secondly, project suitability criteria (i.e. are the characteristics of the project appropriate for a PPP?).

Figure 5 – Structure of the checklist and categorisation of criteria

Category	Sub-categories
Motivations	– Key objectives or problems that using the PPP mode of procurement is expected to achieve/resolve
Legal and regulatory framework	– Public and political support – Legal and regulatory PPP framework
Capacity of the public and private parties	– Public sector capacity and readiness – Private sector capacity and interest
Project-specific issues	– Project structure and size – Risk identification, valuation and allocation – Service requirements – Non-financial benefits

At each stage of assessment, it is assumed that the project is already deemed to be affordable and is justified by the underlying investment need and economic case.

2.5.6 Qualitative VfM assessment during the project cycle

As outlined in Section 3, a qualitative VfM assessment may be used at different stages during the preparation and procurement of a PPP project:

- **during the project identification phase (Phase1):** often used in the initial steps of VfM assessment and before a more complex and costly (and perhaps unnecessary) quantitative assessment is carried out. As it may first be applied when PPP-related information on the project is limited, it can help filter out projects that are unsuitable to be delivered as a PPP.

  Some authorities require all infrastructure projects above a certain value to be assessed for their potential to be delivered as a PPP. This can help ensure that the PPP option is considered consistently within the public sector.

- **during the project preparation phase (Phase 2):** usually applied progressively and with an increasing level of detail**;** and

- **during the procurement phase (Phase 3):** when considering which of the final tenders offer VfM.

Many of the individual VfM criteria assessed at each stage may not change, but the level of detail with which they are applied might increase. The priority of the criteria in the considerations being made may also change over time. For example, in the earlier stages the focus may be on criteria concerning issues such as whether the demand for the project's services is likely to change significantly during the contract period – in which case a PPP may not be suitable. In later stages, the focus may be on criteria considering the quality of the competitive process.

The timing of various qualitative VfM assessment activities is discussed further in Section 5.2.

Reference guidance documents

A Guide on Preparing and Procuring a PPP Project, EPEC (2018)

2.6 Limitations to quantitative and qualitative VfM assessments

A VfM assessment provides input for the public authority's decision-making process based on assumptions made about the likely future performance of the project.

It is important, however, to be aware of the limitations in both the methodology and application of the VfM assessment.

2.6.1 Particular constraints on the implementation of quantitative assessment

Practical constraints include:

- **the complexity of the assessment process**: requires building long-term cash flow models for the PSC and (if used for the initial PPP decision) for the expected PPP option, which require:
    - the availability of reliable long-term cost data and revenue assumptions e.g. on expected construction, operating and maintenance costs and revenues from users over the duration of the PPP contract;
    - assumptions about adjustments to costs in the PSC and PPP options for risks transferred to the private partner and on the financial structuring of the PPP option; and
    - a choice, and appropriate use of, the discount rate(s) when calculating the net present values of each delivery option. This may rely on the availability of information from elsewhere in order to derive a rate (see Section 5.7).
- **the inability to capture non-financial benefits (NFBs) and costs**: i.e, those benefits and costs that cannot easily be quantified in financial terms, but may still be relevant to the assessment.
- **the potential for manipulation**: with a range of assumptions and estimates to be made by the public authority, the process may be open to manipulation to achieve a particular result if it is not carried out within a well-defined and managed institutional framework.
- **a false sense of accuracy**: because the analysis is performed in a relatively complex spreadsheet model, this may give decision-makers an impression of accuracy that is not real. The complexity of the assessment process (described above) and the reliance on a large number of assumptions and estimates may

give users of the results a false sense of the reliability of the model output. The output is only as reliable and robust as the inputs used.

- **some delivery options may not really be available**: for example, the traditional delivery option may not be a realistic comparator as it may not be affordable. Additionally, the use of a PSC assumes that the public authority will maintain the infrastructure to a consistent standard as in the PPP option, which - in reality - may be unlikely.

Nevertheless, the process of quantitative VfM assessment provides a disciplined approach that gives the public authority a better understanding of how the project might be delivered. It also provides the public authority with information with which it can assess bids from the private sector. This can be especially useful where there are only a very few bids.

2.6.2 Particular constraints on a qualitative assessment

A qualitative assessment does not involve the same complexity and need for data as a quantitative assessment. It can also include benefits and costs that are not easily captured in financial terms.

Nevertheless, practical considerations include:

- **the need to apply significant professional judgement** when applying the qualitative criteria which may be open to manipulation to achieve a particular result if the evidence base is weak or non-existent;
- **the robustness of the criteria** and availability of evidence to underpin their relevance; and
- **the actual importance of different criteria**, where some criteria may be more relevant (and therefore) important than others. The assessment might chose to give added weight to certain criteria.

2.6.3 General constraints on both VfM assessment approaches

Other practical considerations include:

- **exogenous factors**: other factors that may over-ride the outcome of the VfM assessment, e.g. a political decision to use a PPP for a policy objective or a decision to use a PPP to access private financing, even if the cost of the PPP option is higher. Budgetary issues can often influence the decision to use a PPP (due to constraints on the public finances), e.g the statistical classification of the PPP contract as *off-balance sheet*.
- **timing of VfM assessment**: if the assessment is carried out too late in the relevant phase, then the output is unlikely to have the required influence as decisions have already been made.
- **proportionality of the approach used**: the risk of requiring an overly-complex assessment for small projects or for projects where the level of information

required is unlikely to be available. The process of assessing a PPP for VfM may be seen as more onerous than conventional approaches (that do not require VfM to be assessed) and a public authority is therefore dissuaded from considering a PPP.

- **a mechanistic (unthinking) approach to assessment**: a tendency for the VfM assessment to be conducted by a public authority as a necessary ritual, without proper consideration of how the PPP project may be prepared and procured to improve VfM.

2.6.4 Addressing the constraints of VfM assessment

In order to help address the constraints identified, it is good practice to use a combination of both quantitative and qualitative approaches. Where previously the quantitative assessment was the main determinant of VfM, increasing importance is now attached to the use of qualitative approaches. Instead, quantitative assessment is used to **inform** the PPP VfM decision alongside the qualitative considerations, rather than being the only determinant.

To simplify the assessment, a public authority might consider:

- **using standardised spreadsheet models**: this can simplify the assessment and help to address the risk of manipulation (as well as to reduce the time and cost). However, such models do not easily allow for the widely varying complexities and scale of projects.
- **using standardised risk adjustment factors**: examples of this include the use of *optimism bias factors* (see Section 6).
- **using standardised contract terms**: the development and use of standardised contract terms, combined with an effective enforcement and derogations process, can help to ensure that projects are developed in line with a pre-agreed basis for identified risks and their allocation in key areas.
- **establishing a specialised unit to conduct the VfM assessment** (e.g. within a PPP unit); and
- **strengthening overall PPP project quality control and approval processes**.

Reference guidance documents

A Guide to Preparing and Procuring a PPP Project, EPEC (2018)

2.6.5 Recommendations on the use of VfM assessments

As highlighted in the introduction to this Guide, a VfM assessment is not a straightforward task, yet it plays an important role in informing the various decisions that must be made to determine whether to use a PPP mode and to establish if VfM can be achieved. The flow chart in Figure 6 is one possible approach to integrating a VfM assessment into the project cycle.

Good practice suggests that a public authority should use a combination of quantitative and qualitative approaches, taking account of the size and complexity of the project, firstly:

- **to carry out an initial qualitative assessment** of all projects.

Subsequently, and depending on the outcome of the initial assessment:

- **for smaller projects that have similar characteristics to existing PPP projects** (with a successful track record): to use a series of qualitative assessments, applying a greater level of detail to each assessment as the project progresses through the preparation and procurement phases.
- **for smaller projects that are unique** (or using PPP for the first time): to use a combination of quantitative and qualitative assessment at each stage. The quantitative assessment should be based only on high-level cost and risk categories (i.e. not applied in an overly detailed manner). The qualitative assessment should apply a greater level of detail to each assessment as the project progresses through the preparation and procurement phases.
- **for larger and/or more complex projects**: to use more detailed qualitative and quantitative assessments at each stage. A qualitative assessment should be used in increasing levels of detail through the preparation and procurement phases. A minimum threshold of the project size/value might be applied above which a more comprehensive quantitative VfM assessment is used, comparing the PPP with a PSC.
- for all projects, any procurement process that receives less than 3 conforming bids the requested tender price(s) may be assessed through a comparison with the assumptions in the VfM assessments.

2.7 Responsibility for assessing VfM

In most cases, the project team will be responsible for carrying out the VfM assessment in line with a defined methodology, often as required by law or national policy.

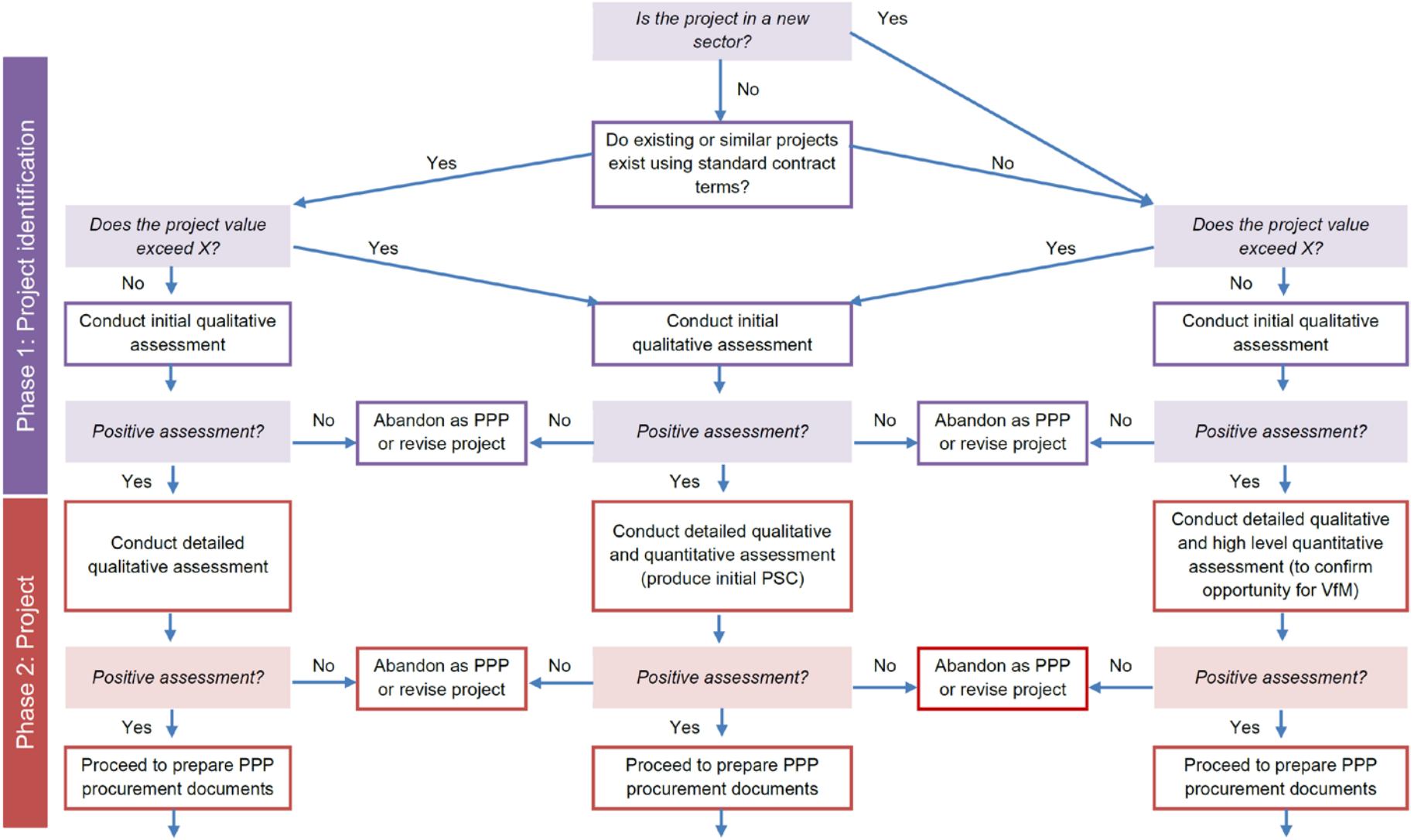
In order to separate the assessment and approval processes, the public authority responsible for delivering the project may have to present its VfM assessment to a separate authority as part of the project approval process.

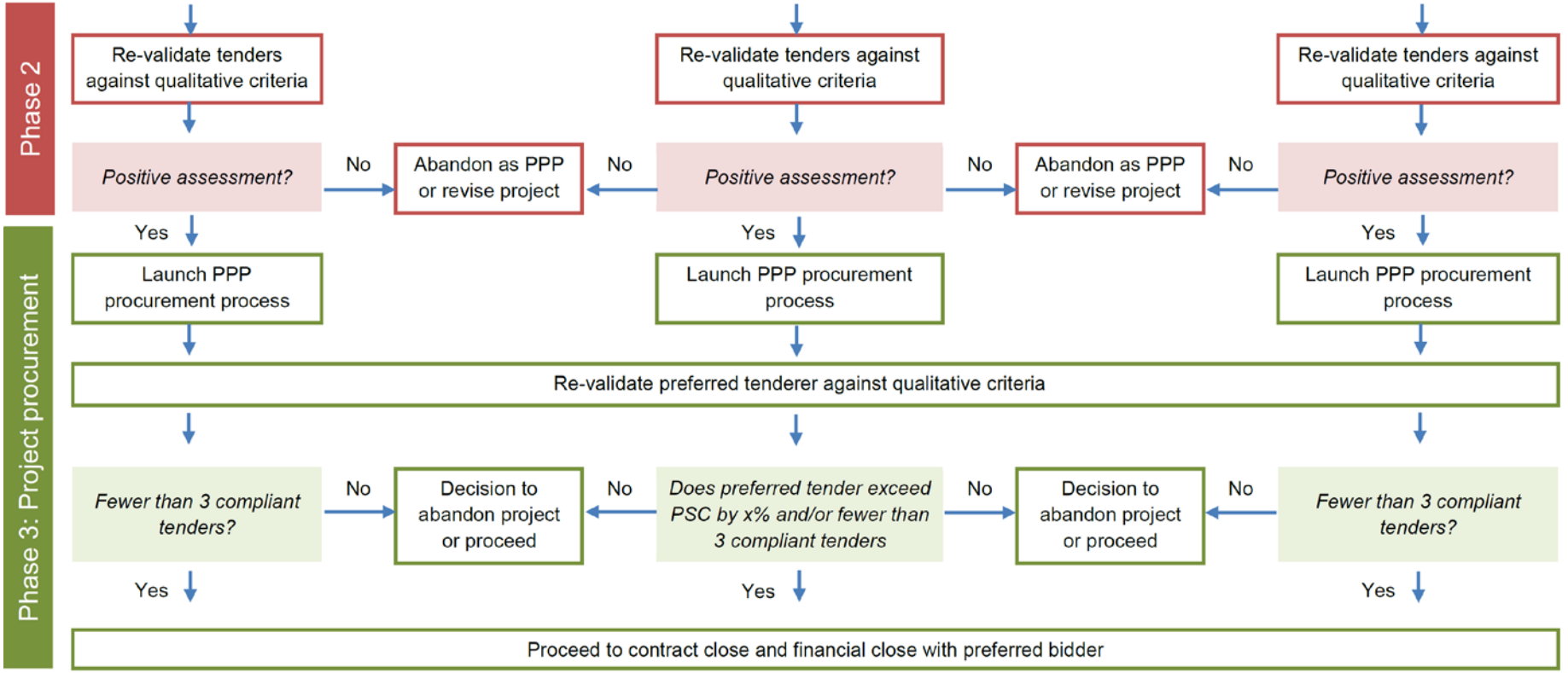
Where available, a PPP Unit can often either assist the public authority in making the assessment (sometimes as a member of the project team, e.g. as in Portugal) or to

assist a higher sanctioning authority to review the assessment. Alternatively, the PPP unit may conduct most of the VfM assessment itself, making use of a specialist team to do so in line with an agreed methodology (e.g. as in Ireland).

The involvement of a PPP unit, however arranged, can help to ensure that the work is carried out consistently and using specialist experience and expertise that may not be available within a public authority.

Figure 6 – Flowchart showing VfM assesment and PPP decision-making in the project cycle




Phase 2
Phase 3: Project procurement
Re-validate tenders against qualitative criteria
Re-validate tenders against qualitative criteria
Re-validate tenders against qualitative criteria
Positive assessment?
No
Abandon as PPP or revise project
No
Positive assessment?
No
Abandon as PPP or revise project
No
Positive assessment?
Yes
Yes
Yes
Launch PPP procurement process
Launch PPP procurement process
Launch PPP procurement process
Re-validate preferred tenderer against qualitative criteria
Fewer than 3 compliant tenders?
No
Decision to abandon project or proceed
No
Does preferred tender exceed PSC by x% and/or fewer than 3 compliant tenders
No
Decision to abandon project or proceed
No
Fewer than 3 compliant tenders?
Yes
Yes
Yes
Proceed to contract close and financial close with preferred bidder

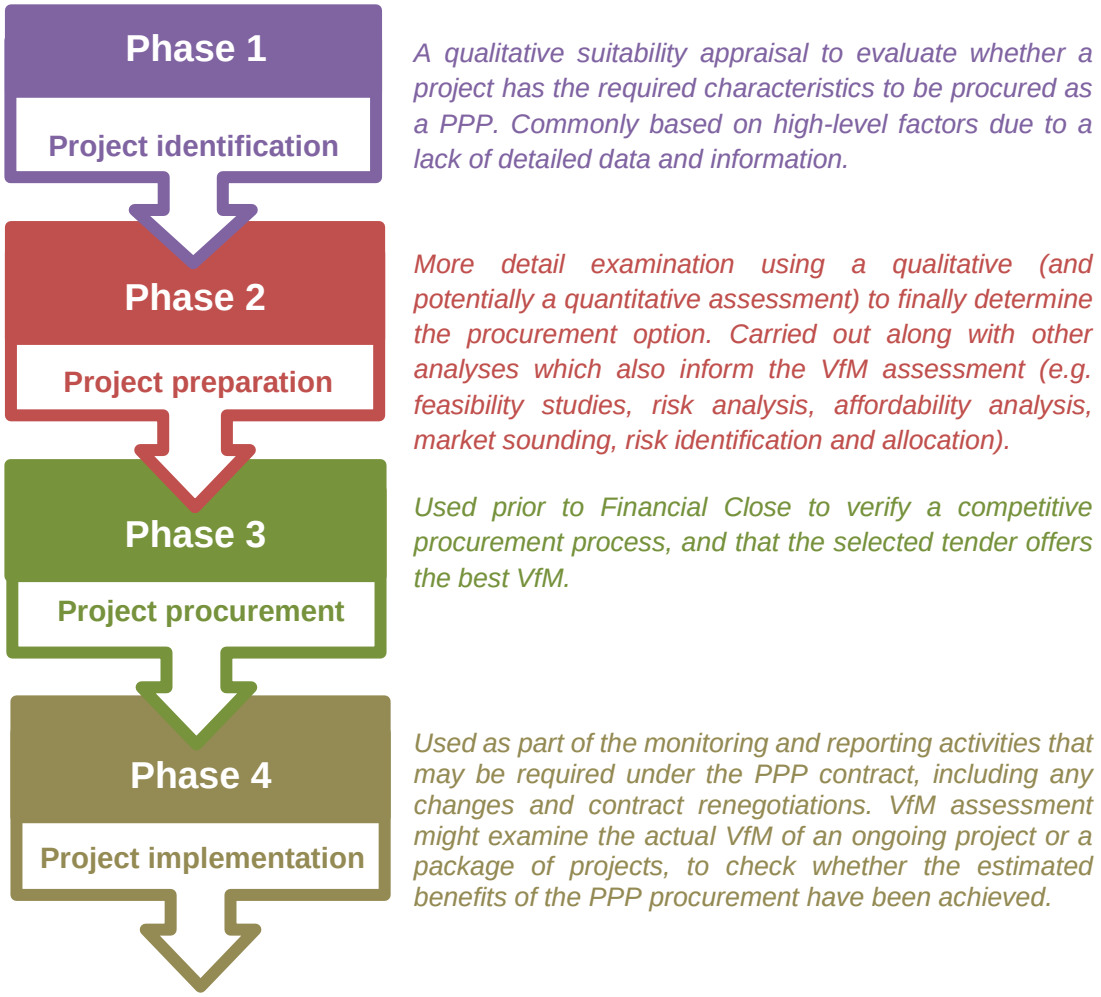
3. Qualitative VfM Assessment

3.1 Qualitative VfM assessment in the project cycle

A qualitative VfM assessment is usually most effective when carried out at a number of stages during the project cycle (described in Section 2.2 and highlighted in Figure 7 below).

While the criteria used to make the assessment are similar in each phase, the level of detail in which they are assessed generally increases as additional data and information is generated by the appraisal processes or becomes available. Additionally, the relative importance of each criterion may change with the activities of a particular phase.

Figure 7 – VfM assessment during the project cycle



3.1.1 Phase 1: Initial VfM assessment

A qualitative VfM assessment can be used as a simple and effective tool during the project identification phase to screen a project for its suitability or potential to deliver VfM as a PPP.

At this early stage of development, information on the project is likely to be limited. Nevertheless, it is usually possible to identify and test a number of criteria, which could indicate either that the project should be rejected as a PPP or that it merits more detailed assessment. Thus, the initial qualitative assessment can inform the decision as to whether or not to devote significantly increased resources to further assessing and preparing the project.

The checklist set out in Section 4.3 gives suggested assessment criteria for use during Phase 1.

The assessment during this phase will not determine the preferred delivery mode. This will require a more detailed qualitative assessment and, potentially, a quantitative assessment in Phase 2.

Reference guidance documents

See: *P3 SCREEN: The Guide for Federal Departments and Agencies,* PPP Canada (2016)

See: *PPP Reference Guide Version 3, Module 3 "PPP Cycle"*, '*Screening for PPP Potential*', World Bank (2017)

3.1.2 Phase 2: Detailed VfM assessment

During Phase 2, the qualitative assessment can test the suitability of the PPP option more thoroughly and/or reconfirm (with any new information) the assessment made at the initial stage.

The timing of such a detailed assessment is often linked to the public authority's project approval process during this phase.

Towards the end of this phase, the qualitative VfM assessment can help to confirm, firstly, the choice of procurement procedure and, secondly, the decision to launch the procurement process.

A quantitative assessment may also be used (see Section 6) to form an overall view on VfM.

During this phase, the assessment criteria can help to identify areas for development by the project team that further improve the VfM of the project, e.g. informing the allocation of risks or types of funding support for the project. In this sense, the assessment tool is used dynamically and continuously throughout the phase, rather than only as a discrete (static) assessment at the end.

The checklist in Section 4.3 gives suggested assessment criteria for use during Phase 2, with an increased number of criteria from the previous stage.

3.1.3 Phase 3: Pre-financial close assessment

During the procurement stage, qualitative assessment may be used to reconfirm the potential of the project to deliver VfM. It may also assess the impact on the expected VfM of any changes that might have taken place during the procurement process.

This final assessment takes place before the procurement process is concluded and the PPP contract signed. Given the importance of the competitive process to help achieve VfM, a particular focus should be given to the quality of the competitive procurement process. The checklist in Section 4.3 again gives suggested assessment criteria for use during this phase.

3.2 Assessing non-financial benefits of PPPs

Non-financial benefits (NFBs) refer to those socio-economic benefits to users/wider society that might not be captured in a quantitative assessment. Sometimes, these benefits may be the direct result of delivering the project as a PPP (i.e. they may not be realised if the project is delivered on a traditional basis).

Benefits that can be valued in financial terms are categorised as NFBs when their value is not included in the cash flow model prepared as part of the quantitative VfM assessment.

Common NFBs can include:

- **Accelerated delivery**: This refers to the benefits of an asset and its related services being available earlier as a consequence of using PPP and so providing the expected socio-economic benefits of transport, education and health services sooner. As society generally values consumption today more highly than in the future, there is a benefit to earlier availability of a service.

  Accelerated delivery due to use of a PPP can be considered based on:

  - on-time delivery - where services start without delay to their planned availability date due to the contract incentives to complete the underlying infrastructure on time; and
  - earlier investment - due to access to additional financing and earlier service delivery than would otherwise be possible using a traditional delivery mode.

  A valuation of the potential for accelerated delivery might be included in a VfM assessment, for example by explaining how and why a PPP may result in earlier availability of infrastructure. It might also be possible to identify, quantify and (where possible) value the resulting NFBs of earlier delivery.

- **Enhanced delivery**: This refers to the expected higher quality of infrastructure assets and related services delivered using a PPP approach. Enhanced delivery may come about from:
    - the life-cycle approach and assured maintenance of a PPP – the contractual commitment to minimum levels of maintenance means assets are kept in better condition and residual values are retained;
    - higher quality services – the contractual commitments and payment mechanism ensure minimum service performance standards are maintained. This is likely to result in both better designed and higher quality services; and
    - a clearly defined governance structure – including the strengthened external scrutiny and due diligence by lenders and investors; better management of service delivery; and the benefit of allowing the public authority to focus on its core tasks (e.g. providing education/teaching in a school).
- **Wider social impacts result from positive externalities as a particular outcome of using the PPP model:** these externalities include the benefits to people other than the direct users of the public infrastructure and related service. These can include:
    - the benefits of wider changes to traditional procurement processes driven by PPP disciplines being more widely applied, such as a more explicit approach to cost and risk identification and transparency, and stronger project management skills, project quality controls and knowledge in the public sector; and
    - wider macro-economic benefits due to the impact of an investment on the economy and environment. These effects might be independent of the procurement mode, but PPP delivery is most likely to accelerate the delivery of these benefits.

In the same way that there may be non-financial benefits, so there might also be non-financial costs.

Figure 8 presents some examples of non-financial benefits and costs.

Figure 8 – Examples non-financial costs and benefits

Sector	Non-financial benefits to users or society	Non-financial costs to users or society
Schools	Improved educational outcomes	Increased congestion around school
Roads	Less congestion Reduced accident costs	Noise and pollution from generated traffic
Light rail	Reduced commuter time	Congestion during construction
Prisons	Improved environment for prisoners	Negative impact on local property prices

Source: *The Non-Financial Benefits of PPPs,* EPEC (2011)

Where a quantitative VfM assessment reveals similar results for both the traditionally procured option and PPP procurement option, an examination of NFBs might highlight additional benefits (and costs) of the PPP option that would otherwise be ignored. The qualitative VfM assessment can therefore ensure that any NFBs (and costs) are included in the overall assessment of VfM.

Reference guidance documents

For additional information, see *The Non-Financial Benefits of PPPs,* EPEC (2011)

4. Qualitative VfM assessment checklist

4.1 Introduction to the qualitative VfM assessment checklist

This section sets out how to use a checklist of criteria to assess the potential of a project to deliver VfM as a PPP. A detailed explanation of each of the criteria developed is also provided.

The checklist has been designed to reflect the regional characteristics of the PPP market in the Western Balkans as well as drawing on criteria that are used for qualitative VfM assessment elsewhere in Europe.

It is recommended that, when this checklist is used, it is augmented by additional project and country-specific criteria, ideally drawing on recent project experience and lessons learnt from previous PPPs.

The **PPP Project Preparation Status Tool (PPST)** that was developed for the Region under the 2014 WBIF EPEC assignment may also be used in conjunction with the qualitative assessment.

A number of the PPST criteria are similar those included in the checklist.

Reference guidance documents

PPP Project Preparation Status Tool, EPEC (2014)

4.2 Structure of the checklist

The checklist is divided into four categories of criteria, labelled here A to D (see Figure 10 below). The criteria identified are based on those commonly associated with the rationale for using a PPP. There may be additional criteria that the public authority wishes to include in this checklist to reflect other reasons for considering the use of a PPP.

4.2.1 Criteria assessing the motivation for using a PPP

A public authority should be able to identify and prioritise the positive reasons for delivering a project as a PPP. This is especially so since preparing and procuring a PPP project often involves additional complexities (and costs) compared with a traditionally delivered project. No single objective (such as statistical classification) should be the sole justification for the use of a PPP.

4.2.2 Criteria for assessing the legal and regulatory framework

This category of questions is designed to establish whether, considered in general, the PPP approach can be effective and deliver VfM. The criteria selected examine the institutional, legal and public policy context in which a PPP project is to be delivered.

4.2.3 Criteria for assessing the capacity of the public and private parties

This category of criteria examines the capacity of both the public and private sector parties to deliver the project as a PPP in a way that secures VfM.

4.2.4 Criteria specific to the project

This category of criteria seeks to identify whether the characteristics of the project itself are such that it has the potential to deliver VfM as a PPP.

Figure 9 – Structure of the checklist

Category	Sub-categories
Motivations	– Key objectives or problems that using the PPP mode of procurement is expected to achieve/resolve
Legal and regulatory framework	– Public and political support – Legal and regulatory PPP framework
Capacity of the public and private parties	– Public sector capacity and readiness – Private sector capacity and interest
Project-specific issues	– Project structure and size – Risk identification, valuation and allocation – Service requirements – Non-financial benefits

4.3 Using the checklist

4.3.1 Applying the checklist during the project cycle

The checklist shown in Figure 10 identifies three key stages when it may be most useful during the project cycle:

- initial assessment (during Phase 1);
- detailed assessment (during Phase 2); and
- pre-financial close assessment (during Phase 3).

A check mark in the columns with these three headings (to the left of the checklist table) indicates that the corresponding criteria are expected to be relevant to that phase.

As there will be less information available during Phases 1 and 2 (or information of lower quality), there are fewer criteria indicated as being relevant to those phases. The number of relevant criteria increases, however, as the development of the project progresses (indicated by the check marks in the column headed *Phase 2*).

By Phase 3, all criteria should be addressed or any previous meeting of a criterion reconfirmed using the final version of information available.

Note: The VfM checklist focuses on those issues that are directly expected to test for the potential of a project to provide VfM if delivered as a PPP. Good project preparation involves examining these **and other issues** - such as feasibility and affordability.

4.3.2 Answering each of the checklist questions

When considering the motivation criteria listed in Part A of the checklist, it is recommended that at least three motivations should be positively identified (with a "yes" response) to indicate that there is a strong rationale for delivering the project as a PPP. The motivations can serve to establish an *ex ante* record of the objectives of using the PPP option. (This may be useful for any *ex post* evaluation of the public authority's performance and decision-making processes.)

The criteria in parts B, C and D of the checklist are expressed in the form of a question such that:

- **a positive response (i.e. a "yes")** means the criterion is expected to be met;
- **a negative response (i.e. a "no")** means the criterion is unlikely to be met; and
- **a qualified response (i.e. "partly")** means either that all the information necessary to answer the question positively or negatively is not yet available (such as may be case in the early stages of a project) or that the criterion is only ever expected to be partially met.

4.3.3 Interpreting the results of the checklist at each stage

At the end of each key stage, the responses to the relevant criteria should be assessed, where:

- **a positive response to all of the questions** suggests that the project is ready to progress to the next phase;
- **a negative response to any of the questions** raises a significant doubt as to whether the project is suitable to be delivered as a PPP and/or to progress to the next phase. It is recommended that the project only progress as a PPP if new information changes a negative response to a positive one, or there are clearly understood mitigating reasons; and
- **a qualified response to any of the questions** indicates either that the public authority recognises that further assessment or actions are needed or there is a concern that the criterion cannot be met. The project should only progress if there are clearly identified mitigating reasons to do so.

As a tool, the checklist approach provides a public authority with a structured process for assessing the drivers of and constraints on VfM in a project. However, care is needed when applying this approach and judgement should still be exercised when considering the sum of the responses, i.e. the approach should not be applied mechanically and uncritically.

For example, where all responses to the checklist criteria are positive, but one criterion is only partly met (for example there is limited public sector capacity), there is probably still a significant risk that the PPP option will not deliver VfM.

Based on the responses, the qualitative VFM assessment might be supplemented by consideration of any NFBs and identification of those areas that present the most risk to VfM. Taken together with any quantitative VfM assessment findings, the overall findings will form a sound basis for a recommendation on whether or not to proceed to the next phase.

4.3.4 Required data and information

The initial qualitative VfM assessment relies on data and information collected throughout the project identification stage, including:

- data and experience from previous PPP projects;
- demand and preliminary cost assessments;
- technical, financial and legal studies; and
- risk analyses and market soundings (to the extent that they are available).

Some of these studies might only be conducted in later phases. As a result, this more up-to-date information will be used to respond to the criteria relevant to the phase.

Figure 10 – The qualitative VfM checklist

Part A: Motivations		Yes	No
A.1	Better long-term maintenance of assets		
A.2	Better quality and consistency of service delivery		
A.3	Better long-term management of risks		
A.4	Reduced interface risks through integration of design, construction and service delivery obligations		
A.5	Greater visibility and certainty of whole-life costs		
A.6	Greater certainty of on-time delivery of assets within the budget		
A.7	Opportunity for private sector innovation in design, construction and service delivery solutions		
A.8	Access to skills from the private sector that are not available in the public sector		
A.9	Opportunity for the public sector to focus on its core public service activities		
A.10	Access to third party (e.g. financier) scrutiny of project proposals		
A.11	Reform of current public sector practices (e.g. in procurement, project management, asset management)		
A.12	Mobilising private sector capital to enable additional and /or earlier delivery of public services		
A.13	More effective revenue generation through improved asset utilisation		
A.14	Matching of long-term benefits of infrastructure to long-term funding		

Part B: Legal and regulatory framework (including political and public support)

Ref no.	Phase 1	Phase 2	Phase 3	Question	Yes	Partly	No
B.1	✓	✓	✓	Can the project be procured as a PPP within the existing legal framework?			
B.2	✓	✓	✓	Does the legal and regulatory framework permit the private sector to provide the public service?			
B.3	✓	✓	✓	Does the public authority have the required legal powers to prepare, procure and enter into the PPP contract and related agreements?			
B.4	✓	✓	✓	Do high-level policy makers and officials support the implementation of the project as a PPP?			
B.5	✓	✓	✓	Is there evidence that users and other relevant stakeholders support the project being procured as a PPP?			

Part C: Public and private sector capacity							
Ref no.	**Phase 1**	**Phase 2**	**Phase 3**	**Question**	**Yes**	**Partly**	**No**
Public sector capacity and readiness							
C.1	✓	✓	✓	Does the public authority have access to appropriate skills, experience and knowledge to prepare, procure and manage the PPP?			
C.2		✓	✓	Does the public authority have in place an adequate project governance structure to oversee the preparation and procurement of the PPP project?			
C.3		✓		Can the PPP project be prepared and procured within a reasonable timeframe?			
Private sector capacity and interest							
C.4	✓	✓	✓	Can the private sector provide access to the necessary skills/experience that are not readily available to the public sector?			
C.5	✓	✓	✓	Have similar PPP projects been successfully implemented in the country, or region over the last five years?			
C.6		✓	✓	Is there evidence of interest from construction and operating contractors in the PPP project and is this interest expected to result in strong interest in bidding for the project?			
C.7		✓	✓	Are there indications that long-term debt and equity financing is available for the PPP project on acceptable terms?			

Part D: Project-specific characteristics							
Ref no.	**Phase 1**	**Phase 2**	**Phase 3**	**Question**	**Yes**	**Partly**	**No**
Project structure and size							
D.1	✓	✓	✓	Does the project offer the opportunity to integrate design, construction, finance, operation and maintenance of the infrastructure asset to lower whole-life costs?			
D.2		✓	✓	Is the PPP contract long enough to ensure that a sufficient level of life-cycle risk is transferred to the private sector?			
D.3a	✓	✓	✓	Are the transaction costs of preparing and procuring the project as a PPP justified in relation to the value of the project?			
D.3b	✓	✓	✓	For smaller individual projects, are there opportunities to spread or reduce the overall transaction costs by bundling the project or using a programme approach?			

Part D: Project-specific characteristics							
Ref no.	**Phase 1**	**Phase 2**	**Phase 3**	**Question**	**Yes**	**Partly**	**No**
D.4		✓	✓	Can the PPP project costs, including long-term operating and maintenance costs, be reliably estimated?			
Risk identification and allocation							
D.5		✓	✓	Can the long-term project risks be clearly identified and valued by the public and private sectors?			
D.6		✓	✓	Is there an opportunity to transfer a meaningful proportion of the expected project risks to the private sector?			
D.7		✓	✓	Is the private sector's investment at risk to the long-term performance of the project?			
D.8		✓	✓	Does the project bring together a range of activities that requires the integrated delivery and operation of different components?			
D.9		✓	✓	Will future activities of the public sector be constrained or restricted because the project is delivered as a PPP (e.g. restrictions on availability of competing assets)?			
D.10		✓	✓	Will the technology and/or the technical methods of delivering the project remain stable over the period of the PPP contract?			
Service requirements							
D.11	✓	✓	✓	Does the project address a long-term, predictable and stable public service need, which is not expected to change significantly over the duration of the PPP contract?			
D.12		✓	✓	Can the required service outputs be clearly identified and expressed in a contract with measurable performance standards?			
D.13	✓	✓	✓	Is it clear that there are no obvious benefits or synergies to be gained from extending the public authority's existing management of operations?			

4.4 Guide to the criteria and checklist questions

This section provides a more detailed explanation of the questions in Parts B, C and D together with an example of possible positive, negative and qualified responses to each question. The sample responses provided simply offer a guide to help a public authority in considering its own response to each question.

4.4.1 Part B: Legal and regulatory framework

This group of questions assesses the suitability of the legal and regulatory framework conditions for managing and delivering a successful PPP project. These questions are especially important in the context of emerging frameworks for PPPs within the Region.

A stable, long-term legal and regulatory framework combined with political and public support for the PPP programme will reduce uncertainties and risks for all parties concerned. Higher levels of uncertainty are reflected in increased tender costs, which can have an impact on the VfM of the PPP option. It may also discourage private sector interest in bidding, which reduces competition and therefore VfM.

PPPs rely on enforceable contracts both between the public and private sector partners and between the various private sector entities involved (such as subcontractors and lenders). Clear rules are also needed to govern the procurement process and the roles and powers of public entities. These should respect legal tradition and national laws and regulations.

There may also be regulations that govern particular public sector activities, e.g controlling how public sector funding may be provided to PPP projects or the rights of a public authority to make a long-term public expenditure commitment for the duration of the PPP contract.

Reference guidance documents


See: *PPP Reference Guide Version 3, Chapter 2,* World Bank (2017)


See: *Directive 2014/23/EU on the award of concession contracts*, EU (2014)


See: *Directive 2014/24/EU on public procurement,* EU (2014)

See: Overview of the PPP Legal and Institutional Frameworks in the Western Balkans, EPEC (2014)

B.1 Can the project be procured as a PPP within the existing legal framework?

The existence of public procurement laws or a dedicated PPP/concession law and appropriate secondary regulations facilitate the procurement of PPP contracts. Furthermore, a clear set of procurement rules reduces the risk of challenges to the procurement decision. It can also encourage private sector bidders to prepare their bids within the framework of a clear set of processes, procedures and timelines. These all assist in strengthening VfM for end-users and the public sector.

Response	Possible indicator
Yes	*A clear and transparent legal and regulatory framework is in place covering the procurement of the project as a PPP. It has been successfully tested through the procurement of similar PPP projects.*
Partly	*A legal and regulatory framework is in place covering the procurement of PPPs but it has not been tested by implementing similar PPP projects.*
No	*A legal and regulatory framework to permit the procurement of PPPs does not yet exist and no changes to the framework are foreseen in an appropriate timeframe.*

B.2 Does the legal and regulatory framework permit the private sector to provide the public service?

The legal and regulatory framework should allow for:

- the provision of public services by the private sector in the relevant sector; and
- the right of the private partner to use public assets to provide the service.

For example, the legal framework might prohibit the private provision of services in certain sectors, such as defence or justice.

Response	Possible indicator
Yes	*The legal and regulatory framework allows for, and facilitates, private sector involvement in the provision of the relevant public service.*
Partly	*The provision of the public service in the relevant sector by the private sector is subject to material limitations.*
No	*The legal and regulatory framework does not allow the private sector to be involved in providing the relevant public service and no change to the framework is foreseeable.*

B.3 Does the public authority have the required legal powers to prepare, procure and enter into the PPP contract and related agreements?

The public authority needs to have a clear mandate and legal authority to prepare and procure the project as a PPP and to enter into a long-term PPP contract. This includes the relevant powers to commit to making the required payments under the PPP contract. Private sector parties usually carry out their own due diligence to confirm this before bidding and/or entering into a PPP contract.

Response	Possible indicator
Yes	*The public authority has the required legal powers to prepare and procure the project as a PPP and enter into the PPP contract and related agreements, and, where relevant, assume the related payment obligations over the duration of the contract.*
Partly	*The public authority has the required legal powers to prepare and procure the PPP project and enter into the PPP contract and related agreements, but the necessary approvals to proceed with the preparation, procurement and/or execution of the PPP contract are not yet available.*
No	*The public authority does not have the required legal powers to implement and/or execute the PPP contract and related agreements or it is not clear that it has such powers.*

B.4 Do high-level policy makers and officials support the implementation of the project as a PPP?

High-level political support for the specific PPP project is crucial to overcome potential constraints and to mediate between opposing stakeholders. Publishing a PPP policy statement is one way a government can emphasise its long-term support for the wider PPP programme. This can also improve coordination among public sector stakeholders and provide confidence to the private sector to participate in the programme.

Confidence in the likely delivery of the project can be improved if the PPP is part of a national development plan. This can provide a clear link between the PPP project and the public authority's development objectives (to which it has made a visible political commitment).

Response	Possible indicator
Yes	*There is clear evidence of high-level government support for the implementation of the PPP project, for example through a PPP policy commitment or investment plan.*
Partly	*The project is part of a list of desired PPP projects published by the public authority or wider government, but high-level policy makers and officials have not voiced specific support for the project.*
No	*There is no evidence of government support for the PPP project or high-level policy makers and officials have voiced opposition to the project proceeding as a PPP.*

B.5 Is there evidence that users and other relevant stakeholders support the project being procured as a PPP?

As part of the project preparation process, all relevant stakeholders should be identified from an early stage. A continuous stakeholder communication and engagement process should be developed to inform and consult relevant stakeholders. Taking stakeholder concerns and feedback into account can reduce opposition to the project

and can improve project design. This process should be conducted throughout the project identification, preparation and procurement phases.

Response	Possible indicator
Yes	*There is evidence of stakeholder support for the PPP project and an active stakeholder management plan is in operation.*
Partly	*Opposition to the PPP project may exist from certain stakeholders but an information and consultation process is planned to address any concerns.*
No	*There is evidence of strong opposition to the PPP project and this is expected to continue.*

4.4.2 Part C: Public and private sector capacity

- **Public sector capacity and readiness**

The complexity and scale of most PPP projects requires additional and different skills and knowledge in comparison to traditional infrastructure procurement. The public authority therefore needs to have:

- access to appropriate capacity and skills; and
- appropriate quality control and approval systems and procedures to manage the PPP process and those involved in it.

C.1 Does the public authority have access to appropriate skills, experience and knowledge to prepare, procure and manage the PPP?

Appropriate capacity includes technical, financial, legal, procurement and project management skills and experience. The level of capacity depends on the complexity and size of the project. The public authority may not, however, have all the necessary technical capacity in-house.

Accordingly, it should arrange to put in place sufficient access to external sources of advisory support and/or central technical support within the public sector (e.g. a PPP unit). This requires the public authority to have:

- an understanding and awareness of the level and nature of the external advisory support required to supplement the capacity of the public authority;
- sufficient budgetary resources to engage such support; and
- the ability to procure and manage any externally procured advisory support with a focus on the quality (not just the price) of such support.

The public authority should also consider if it has, or is able to put in place, the necessary skills and resources to manage the PPP contract once it is signed.

Response	Possible indicator
Yes	*The public authority has access to the appropriate skills and experience to prepare, procure and subsequently manage the PPP project. This includes the resources and capacity to engage appropriate specialist legal, financial, technical and other specialist advisers and/or access to a specialist body within government (such as a PPP unit) with appropriate skills and experience.*
Partly	*The public authority has some access both internally and externally to PPP skills and experience but its experience of preparing, procuring and managing PPP projects is still limited and its ability and the available resources to engage specialist advisers is also limited.*
No	*The public authority has very limited experience of preparing, procuring and managing PPP project and has neither the resources nor the willingness exist to engage external advisers, nor access to a specialist technical body within government.*

Reference guidance documents

See: *Dedicated Public-Private Partnership Units: A Survey of Institutional and Governance Structures,* OECD (2010)

See: *Role and Use of Advisers in Preparing and Implementing PPP Projects,* EPEC/EIB (2014)

See: *Establishing and Reforming PPP Units: Analysis of EPEC Member PPP* Units and lessons learnt, EPEC/EIB (2014)

C.2 Does the public authority have in place an adequate project governance structure to oversee the preparation and procurement of the PPP project?

Managing the preparation and procurement process for a PPP relies on a strong and effective project management process. This should also include clear quality control and decision-making points along the way at key stages. Lines of reporting and responsibility for decision-making should be clear with an effective project oversight committee and a well-defined project team.

Response	Possible indicator
Yes	*The public authority has in place a clear governance structure to manage the preparation and procurement process for the PPP project. Members of the various bodies, such as the project steering committee and project team, have been appointed and are available with clear decision-making powers and lines of reporting. There are also well-defined processes in the public sector to provide effective and informed quality control checkpoints during the preparation, procurement and management of the PPP.*
Partly	*The public authority has agreed to put in place a governance arrangement but the structure and appointments are not yet in place. Some approval processes exist but these have not been tested.*
No	*Agreed arrangements to manage the preparation and procurement process do not exist and are not foreseen. There is no identifiable quality control or approval process for overseeing the preparation and procurement stages of the project.*

C.3 Can the PPP project be prepared and procured within a reasonable timeframe?

The preparation and procurement of PPP projects usually requires more time and resources than using a traditional public procurement approach. This may be because a number of the activities that should also accompany a properly prepared traditional PSC project do not take place when they should, such as thorough long-term risk analysis, life-cycle costing and affordability assessment.

However, the long-term contractual and financing arrangements for a PPP cannot proceed unless these issues are addressed up-front. Preparing the contractual and financing arrangements themselves also takes time, especially for more complex PPP projects, or where it is the first project of its type to be prepared and procured as a PPP. Such time-consuming activities also include appointing advisers, market sounding, stakeholder management and potentially more complex procurement processes, such as competitive dialogue.

Other major causes of delay, such as land acquisition and permitting are likely to be issues irrespective of the form of procurement, but the PPP approach can highlight the real financial consequences of delay due to these factors and amplify the importance of resolving these issues up-front. If significant delays are anticipated because of the requirements of delivering the project as a PPP, then the potential benefits of faster and/or time-certain delivery of the infrastructure assets and services may be eroded.

Often there will be political pressure to deliver the PPP project within technically unrealistic timetables. This can significantly erode VfM, with poorly prepared projects being launched on the market resulting in poor bidder responses and/or poorly prepared PPP contracts being entered into that subsequently lead to delays and disputes.

It is important, therefore, that the public authority is able to make a realistic assessment of delivery timeframes and resist pressures to launch projects in the face of overly ambitious delivery dates.

Response	Possible indicator
Yes	*A clear timeline is available for the preparation and procurement process and this is considered acceptable. The timeline takes into account realistic assumptions for the appointment of advisers (where necessary), obtaining approval, permits, funding commitments, project documentation preparation, the conduct of the procurement process including realistic timeframes for bidders to prepare their bids, mobilisation of financing commitments and for the public authority to assess and evaluate bidder responses.*
Partly	*It is not yet clear that the PPP project can be prepared and procured within an acceptable timeframe.*
No	*There is pressure to procure the PPP project quickly, the acceptable timeline is not realistic and/or there is limited experience of delivering such a project as a PPP.*

- **Private sector capacity and readiness**

The willingness and appetite of private companies with the relevant skills, expertise and capacity to bid for PPPs is crucial, to ensure that a strong competitive procurement process takes place and that a competent private sector partner capable of delivering the public services over the duration of the contract is appointed.

PPP bidding processes in the Western Balkans frequently receive either no bids or only one bid. This highlights the challenge of market capacity as well as the importance of bringing well-conceived projects to market, underpinned by a clear understanding of the capacity of the market to deliver the PPP project through well-conducted market sounding.

Reference guidance documents

See: *PPIAF Toolkit for PPPs in Roads and Highways, Module 5,* World Bank (2009)

See: *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets,* Farquharson, Torres de Mästle, Yescombe and Encinas, (2011)

C.4 Can the private sector provide access to the necessary skills/experience that are not readily available to the public sector?

VfM of the PPP option is likely to be limited if the private sector is unlikely to bring additional skills and experience that are not already available to the public authority. Such skills would include the capacity to design, construct and operate the infrastructure asset on a whole-life basis and manage the range of interfaces involved in doing so.

Response	Possible indicator
Yes	*There is evidence that private sector providers can bring additional skills and experience that are not available to the public authority. This includes experience of successfully designing, building and operating similar private sector facilities.*
Partly	*There is some evidence of contractors designing, constructing and operating facilities in other sectors.*
No	*For the PPP projects under consideration, there is little evidence of the private sector having a stronger capability to design, build and operate the infrastructure asset than the public authority.*

C.5 Have similar PPP projects been successfully implemented in the country, or region over the last five years?

A track-record of successful PPP projects in the past is one of the strongest available indicators of VfM, depending on the comparability of the features of the project with such earlier PPP projects. This also depends on having a meaningful assessment of VfM performance of these earlier projects (which may not be available in markets where PPPs are still relatively recent).

Response	Possible indicator
Yes	*The proposed project is comparable in both scope and size to similar PPP projects that have been successfully implemented over the past five years in the country or in the Western Balkans region.*
Partly	*Similar PPP projects in terms of either scope or size have been successfully implemented in other markets, but not in the Region.*
No	*There is no evidence yet available of a similar project having been successfully implemented as a PPP.*

C.6 Is there evidence of interest from construction and operating contractors in the PPP project and is this interest expected to result in strong interest in bidding for the project?

During Phase 1 (i.e. at an early stage of project identification) potential market interest is more likely to be assessed using question C.5. During Phase 2, more detailed market sounding is required to ensure that the project is being prepared in a way that encourages strong market interest. This might consider whether there is scope for appropriate risk allocation, technical feasibility, and clear and deliverable service performance indicators, while at the same time ensuring sufficient interest from the private sector.

Generally, the public authority will want to assure itself that at least three potential bidding consortia (comprising the contractors, lenders and equity providers) are likely to have the capacity to deliver the project and the interest in participating in a competition.

This criterion has further importance when taking into consideration the longer-term performance of the project and the potential need to replace the private partner (for example, due to poor performance). VfM may be lost later on if there is insufficient capacity in the market to replace the contractor at the time.

Response	Possible indicator
Yes	*National and/or international companies with PPP experience have expressed a strong interest in the PPP project. This has been evidenced through market sounding exercises and other forms of engagement with the market and at least three consortia are expected to bid for the project.*
Partly	*National and/or international companies have voiced some preliminary support for the PPP project but this is not yet based on any detailed market sounding activity and those expressing interest do not necessarily have PPP experience.*
No	*There is no evidence of market interest in the project and/or some contractors/financiers with PPP experience have already expressed lack of interest in the PPP project as currently envisaged. Market capacity is limited in relation to the project size.*

C.7 Are there indications that long term debt and equity financing is available for the PPP project on acceptable terms?

The availability of long-term debt and equity financing on acceptable terms is critical, with regard not only to whether or not the project can be delivered as a PPP, but also to whether it can be delivered on acceptable terms that are likely to present VfM.

PPPs are usually financed on a limited recourse/project financing basis. It is therefore important to ensure that this form of financing is available and that lenders are clear about the nature and acceptability of the risks involved.

In newer PPP markets, national lending institutions may not be familiar with this form of financing and/or may not have the capacity to provide the levels or duration of financing required. Construction companies may also be limited in their capacity to be involved or to be financed.

The participation of international lenders, multilateral financing institutions and contractors could be critical to the ability to deliver larger projects as a PPP, bearing in mind that they are less likely to be interested in smaller projects

Market sounding might be carried out to determine potential and realistic levels of market interest. An experienced financial adviser can play an important role in helping the public authority to frame the question and interpret the response from the market.

Response	Possible indicator
Yes	*National and international lenders and sources of equity have indicated potential interest in financing the PPP project on terms that are expected to deliver VfM.*
Partly	*There is some evidence of interest from national and international lenders and sources of equity in providing sufficient long term financing but the basis on which they may be able to do so is not yet clear.*
No	*There is no evidence of interest from national and international lenders or equity providers in the PPP project. National lenders have limited experience of PPP project financing and national contractors have limited balance sheets or credit support.*

4.4.3 Part D: Project-specific characteristics

This group of questions examines the features of the proposed project in light of project specific criteria that have an impact on VfM including the potential to reduce whole-life costs, project size and structure, ability to assess long-term costs, risk allocation and required service outputs.

- **Project structure and size**

D.1 Does the project offer the opportunity to integrate design, construction, finance, operation and maintenance of the infrastructure asset to lower whole-life costs?

The integration of design, construction, financing, operation and maintenance activities in the PPP structure provides the opportunity to lower long-term maintenance and operating costs and therefore help deliver VfM.

Savings can be gained from the PPP incentives to encourage design and construction approaches that reduce long-term maintenance and operating costs; e.g. from the use of better construction materials and new technologies.

VfM opportunities from integrating the various activities are likely to be greater where maintenance and operating costs are expected to comprise a significant proportion of whole-life costs.

Response	Possible indicator
Yes	The project is expected to involve the integration of design, construction, financing, operation and maintenance activities.
Partly	The project is expected to involved the integration of design, construction and some financing activities but operation and maintenance activities are expected to be more limited.
No	There are limited opportunities to involve the integration of design, construction, financing, operation and maintenance activities in the project and long-term operation and maintenance activities are limited.

D.2 Is the PPP contract long enough to ensure that a sufficient level of life-cycle risk is transferred to the private sector?

The duration of the PPP contract should be such that the private sector partner is exposed to a sufficient level of life-cycle risk (i.e. to the costs of major renewals of the infrastructure asset).

The nature of the project and duration of the PPP contract should ensure that the private partner is responsible for at least the first major renewal of the infrastructure asset. In this way the private sector partner is incentivised to design, construct maintain and operate the infrastructure asset in such a way as to achieve the optimum balance of up-front and life-cycle costs.

Response	Possible indicator
Yes	*The duration of the proposed PPP contract is similar to that of other PPP projects in the same sector and covers at least the first major renewal of the asset.*
Partly	*The duration of the proposed PPP contract differs from comparable projects in the region and in Europe but is expected to cover only the first renewal of the infrastructure asset.*
No	*The duration of the proposed PPP contract does not cover the first renewal of the asset and significantly differs from comparable projects in the region and in Europe.*

D.3a Are the transaction costs of preparing and procuring the project as a PPP justified in relation to the value of the project?

A sufficiently high level of investment in a PPP is needed to ensure that the value of the expected benefits is greater than the extra transaction costs involved. These include the costs incurred by the public authority in preparing, developing and managing the PPP contract and the private sector costs of preparing tenders. These costs vary, depending, for example, on the project's complexity and the maturity of the market. For smaller projects, in particular, these costs may be greater than the value of the efficiency gains of the PPP.

The qualitative assessment does not consider the expected costs and benefits, but can indicate if there is likely to be a risk to VfM. For example, in more mature PPP markets a minimum threshold is set for the use of PPP for infrastructure projects.

Response	Possible indicator
Yes	*The capital costs of the project are expected to exceed EUR 20 million.*
Partly	*The capital costs of the project are below EUR 20 million but the project may be considered to be a pathfinder project or have wider programme level benefits that need to be taken into account and/or operating and maintenance costs are expected to be three times capital costs.*
No	*The capital costs of the project are below EUR 10 million and no further projects of a similar nature are anticipated.*

D.3b For smaller individual projects, are there opportunities to spread or reduce the overall transaction costs by bundling the project or using a programme approach?

A project with a capital cost of less than, say, EUR 20 million might be considered to present a high risk of loss of VfM, unless mitigating factors reduce transaction costs. This risk might be assessed using question D.3b. Projects of this size might also be justified where the expected long-term operating and maintenance costs are expected to be significant, say three to four times the initial construction cost.

For the West Balkans Region, the expected benefits could be more strategic in nature for example (in the context of a pipeline of projects), the opportunity for public sector and private companies to develop expertise and skills through a number of smaller PPP projects before launching larger and more complex projects.

There may be opportunities to either:

- group similar projects together into a single contract or series of contracts (with similar terms and conditions) so that the transaction costs are spread across a number of similar projects; or
- use a PPP programme approach to develop a pipeline of individual projects which are implemented in a standardised way.

Response	Possible indicator
Yes	*The project is already a part of, or expected to be implemented through, a grouped PPP programme approach or otherwise benefits from a standardised approach to preparation and procurement.*
Partly	*The size of the project is not sufficient in itself but is expected to form part of a wider programme of PPP projects with opportunities for standardisation that are under development.*
No	*The project is not expected to be grouped or implemented through a PPP programme approach and standardised approaches are not available.*

D.4 Can the PPP project costs, including long-term operating and maintenance costs, be reliably estimated?

In a PPP contract, the private sector assumes the risk of the long-term operating and maintenance costs of the project. To secure VfM, it must therefore be possible for bidders to estimate these costs reliably. The public authority also needs to estimate these costs reliably so as to make a comparison of the PPP option with the traditional PSC approach (see Section 5 on quantitative VfM assessment) and to assess the long-term affordability of the project.

The public authority's estimated costs should be based on reasonable assumptions, market information and historic data.

Response	Possible indicator
Yes	*Long-term operating and maintenance costs can be reliably estimated, building on historic data from similar projects.*
Partly	*A reasonable proportion of the long-term operating and maintenance costs can potentially be reliably estimated, but further work is required to provide these estimates.*
No	*Long-term operating and maintenance costs cannot be reliably estimated and there is limited historic data available from similar projects.*

- **Risk identification and allocation**

  During Phase 1 (project identification), the public authority should undertake a broad assessment of all the risks that might arise from the project requirements in order to start to identify, value and allocate them.

  This process of identifying and assessing risk should continue throughout Phase 2. A *risk register/matrix* is a useful tool to record and track information on the risks identified.

  Section 6 describes the risk identification, valuation and allocation process in more detail.

D.5 Can the long-term project risks be clearly identified and valued by the public and private sectors?

At the heart of the VfM rationale for the PPP option is the opportunity to allocate project risks between the public and private sectors in a more efficient way by allocating each risk to the party best able to manage it.

It is therefore necessary - as part of the quantitative VfM assessment - to be able to identity and value the relevant projects risks so as to realise the full potential of the PPP approach. This process can help to inform the qualitative VfM assessment.

The public authority should also consider examples of risk allocation in successful PPPs of a similar nature and scope and/or the availability of standard PPP contract documents to help guide its assessment. In general, the private sector is able to accept commercial risk, but not political risk, which should remain with the public sector. Some risks will be shared.

The response to this question also relies on other factors, such as the assessment of the appetite and capacity of the market for the project (C.6 and C.7).

Response	Possible indicator
Yes	*The main risks of the PPP project over the duration of the PPP contract can be reasonably identified and valued based on information available on the project to date, relevant standardised PPP contracts or successfully procured comparable PPP projects*
Partly	*It is expected that the main risks of the PPP project over the duration of the PPP contract can be identified and valued but further work is required to determine this.*
No	*The main risks of the PPP project over the duration of the PPP contract cannot easily be identified and valued.*

Reference guidance documents

See: *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets, Appendix B,* Farquharson, Torres de Mästle, Yescombe and Encinas (2011)

See: *Green Book*, *Annex 4,* UK (2003, latest update in 2018)

See: Government Guarantees: Allocating and Valuing Risk in Privately Financed Infrastructure Projects, Chapter 4 and 5, World Bank (2007)

D.6 Is there an opportunity to transfer a meaningful proportion of the expected project risks to the private sector?

Achieving VfM using a PPP relies on the opportunity to allocate those risks that can be managed more efficiently by the private partner. Clearly if these opportunities are limited, then the potential for VfM is reduced.

For example, a waste incineration project would typically involve a wide range of construction and long-term operating risks, including the potential for optimal combination of operating technologies embedded in the design and construction of the infrastructure. The complex operating nature of the asset may provide the opportunity for a sufficient level of risks, especially operational risks, to be managed more efficiently by the private partner than the relevant public waste authority.

Response	Possible indicator
Yes	*There is a wide range of project risks and the opportunity exists to allocate these risks optimally between the public authority and the private partner.*
Partly	*There are limited project risks but a number of these could be more efficiently managed by the private partner.*
No	*The range of the project risks is small with limited opportunity to allocate them to a private partner.*

D.7 Is the private sector's investment at risk to the long-term performance of the project?

In order to ensure potential for VfM as a result of effective risk allocation, the project should involve a sufficiently high level of construction cost. Recovery by the private partner of its initial, up-front expenditure is at risk if the project does not perform in accordance with the agreed service requirements or expected usage.

This risk to investor capital distinguishes PPPs from outsourced service contracts, where the private partner provides a service but makes limited capital investment of its own financial resources.

The required level of investment by the private partner is also a factor when assessing the potential for up-front public sector funding support for a PPP project or when considering the provision of financial guarantees to the lenders. If the level of private sector investment is too limited, then the incentive for it to manage the risks allocated is significantly weakened, reducing the potential for VfM.

Private financing therefore plays at least two important roles in a PPP arrangement:

- as a source of financing for projects other than government; and (equally importantly)
- as an incentive to ensure performance and meaningful transfer of risks.

Response	Possible indicator
Yes	*The project is expected to involve significant levels of up-front investment by the private party that will be exposed to the long-term performance of the project.*
Partly	*The project is expected to involve some up-front investment by the private party that will be exposed to the long-term performance of the project but the proportion of such investment is not yet determined.*
No	*The project is expected to involve limited levels of up-front investment by the private party that will be exposed to the long-term performance of the project.*

D.8 Does the project bring together a range of activities that requires the integrated delivery and operation of different components?

A PPP can provide the opportunity for the public authority to transfer project management and interface risks to the private sector in a project that combines a range of different but related components. The project might require, for example, civil engineering, electromechanical and IT activities to be commissioned and brought into use in an integrated manner.

A public authority can often be faced with a range of interface risks in a conventionally delivered project, which - if poorly managed and integrated - can lead to significant delay and cost overrun.

Response	Possible indicator
Yes	*The project is expected to involve bringing together and commissioning a wide range of different but interdependent components.*
Partly	*The project involves bringing together and commissioning a limited range of different but interdependent components.*
No	*The project is not expected to involve much complexity or difficulty in terms of managing different interfaces and the range of different activities is expected to be limited.*

D.9 Will future activities of the public sector be constrained or restricted because the project is delivered as a PPP (e.g. restrictions on availability of competing assets)?

The transfer of particular activities to a private partner under a PPP and the subsequent need to maintain the business environment that supports its viability may affect the ability of the public sector to implement future related projects.

Such limitations might not arise if the project were to be delivered using a traditional public contract. For example, for an airport PPP project that transfers demand risk, the private sector may require that the public authority be constrained from developing a competing airport nearby or within a defined period. The public authority needs to consider carefully the VfM of undertaking projects that risk introducing restrictions on related activities outside of the project.

Response	Possible indicator
Yes	*Limited constraints on the development of other infrastructure assets are anticipated as a consequence of the project being procured as a PPP.*
Partly	*No major constraints are currently anticipated but this is subject to further assessment of the requirements of potential private sector parties.*
No	*Major constraints with significant economic and financial impacts exist and are likely to limit the flexibility of the government to react to future changes in important areas of development.*

D.10 Will the technology and/or the technical methods of delivering the project remain stable over the period of the PPP contract?

A public authority could find itself committed under a PPP contract to paying more for a service than is necessary, if the delivery of the service can be made more efficient in the future. This is a particular risk for projects where changing technology plays a significant role in service delivery.

Response	Possible indicator
Yes	*The delivery of the service is based on processes that are not expected to change significantly over the duration of the PPP contract.*
Partly	*Some of the processes may change over the duration of the contract but there are incentives and provisions in the PPP contract for sharing gains resulting from more efficient processes becoming available.*
No	*Processes for delivering the service are expected to change significantly over the period of the PPP contract, due for example to its high technology content.*

- **Service requirements**

A distinctive feature of PPP projects is the focus on the purchase of a service not an asset. Accordingly, the service requirement should be stable and should be capable of being clearly identified and defined in the PPP contract as outputs expressed as minimum performance standards. It should be possible to measure (and therefore pay for) the delivery of the service in a clear and unambiguous manner.

D.11 Does the project address a long-term, predictable and stable public service need, which is not expected to change significantly over the duration of the PPP contract?

A PPP fixes the service requirements of the public authority in contractual terms for a long time. The extent to which these requirements can be changed during the contract are usually limited if additional costs are to be avoided. The risk of change and therefore of additional costs is higher the longer and/or more complex the PPP contract is. If the service is no longer required, the cost of contract termination can be very considerable.

While standard contract clauses are available to manage some limited changes, these are not suitable for dealing with major change. Clearly, even if an infrastructure asset is procured traditionally, changes cannot be made without cost. However, these costs may be less for the public authority than in a long-term PPP contract.

It is difficult to quantify the value of having additional flexibility in the contract so the issue cannot be captured in a quantitative VfM assessment. The need to manage change in the service requirements is therefore an important qualitative consideration when assessing whether or not a PPP has the potential for VfM.

Response	Possible indicator
Yes	*The demand for the service is predictable and expected to be stable over the duration of the PPP contract.*
Partly	*The extent to which demand for the service is expected to be predictable and stable over the duration of the PPP contract is not yet clear.*
No	*The demand for the service could change significantly over the duration of the PPP contract.*

D.12 Can the required service outputs be clearly identified and expressed in a contract with measurable performance standards?

The output-based nature of a PPP contract incentivises the private sector to innovate and develop efficient and cost effective approaches to design, construction and delivery of the asset and service.

By contrast, the detailed prescription of inputs by a public authority can limit the opportunity for private sector innovation.

In an availability-based PPP, the service requirements are measured against clear performance standards which are expressed in well-defined contractual terms. A performance-based payment mechanism is used to determine the financial penalties that are deducted when the service fails to reach the required standard.

Response	Possible indicator
Yes	*The required service outputs and performance standards can be expressed clearly in the PPP contract and there are clear limits to the nature of the service required.*
Partly	*It is anticipated that the required service outputs and performance standards can be expressed clearly in the PPP contract but these have yet to be developed and in a number of areas the public authority is required to be specific on the outputs required.*
No	*The nature of the services and performance standards required mean that it is difficult to express these clearly in output terms. The public authority's requirements are largely expressed in input terms.*

D.13 Is it clear that there are no obvious benefits or synergies to be gained from extending the public authority's existing management of operations?

There may be existing activities carried out by the public authority which it may be more cost effective to extend rather than having services provided separately by the private sector under a new PPP arrangement.

For example, the public authority may already have in place national service contracts for the provision of maintenance, security, or cleaning services for schools that would be more cost-effective than the services being delivered under an individual PPP contract.

Response	Possible indicator
Yes	*The provision of services by the private party is clearly additional to the capacity of the public authority and there are limited synergies to be gained by the public authority from providing such services itself.*
Partly	*The public authority expects to retain responsibility for a number of services that could otherwise be provided by the private party.*
No	*The public authority intends to continue to be responsible for almost all services associated with the project as it has a well-developed capacity available and/or there are synergies from extending such activities.*

5. Quantitative VfM assessment

This section discusses the objective, timing, methodology and practical use of quantitative VfM assessment.

5.1 Objective and approach to quantitative VfM assessment

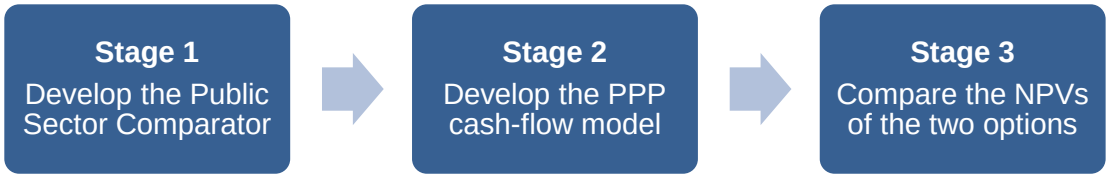
Quantitative VfM assessment is a significant contributor to the decision making process for determining the preferred delivery option.

The assessment determines how the *net present value* (NPV) of the traditional *public sector comparator* (PSC) delivery approach differs from that of the PPP mode to deliver the same set of service outputs (see Figure 11) from the perspective of the public authority. The assessment compares the combined relevant construction and long-term maintenance and operation costs (i.e. the *whole-life costs*).

The delivery option that is assessed as having the lower NPV is deemed to offer *better value for money* when compared to the alternative.

5.1.1 Three main stages of a quantitative VfM assessment

Figure 11 – Main stages of a quantitative VfM assessment



There are essentially three stages to the assessment process.

- **Stage 1: Development of a Public Sector Comparator (PSC)**: this involves the preparation of a risk-adjusted cash flow model of the traditional public procurement option, usually referred to as the *public sector comparator* (PSC) (or sometimes the *public sector benchmark*, PSB).

  The cash flow model includes all project costs, the timing of these inputs, and an estimated cost for the value of all the relevant project risks borne by the public authority. These inputs are adjusted to ensure neutrality between the public and private options, such as any difference in tax treatment.

  In the case of a PPP that involves charging user fees, the PSC is based on the risk-adjusted costs of building and operating the project asset that would be incurred by the public sector.

- **Stage 2: Development of a cash flow model of the PPP delivery**: this models the private PPP alternative that delivers the same service outputs over the same period. The model is used to estimate the expected availability

payment or user fees of the PPP option. It reflects the type of financial model that would be produced by the private partner in calculating its tender price.

This analysis might use many of the same cost assumptions that are used in the PSC (such as construction cost) but adjusted for the cost of public authority risks that are now allocated to the private partner. It may also include any assumed benefits of PPP (i.e. savings resulting from the innovation and efficiency gains derived from the private sector participation) and the costs of using private sector finance.

- **Stage 3: Comparison of the net present values of the PSC and PPP options:** the option which has the lower calculated NPV is considered to offer better VfM. For example, a PPP concession option could be assessed as offering better VfM if the NPV of the PSC is higher than the NPV of the estimated user-charge revenue.

The steps that are followed within each stage are described in Figure 12. (**Note**: when comparing the PSC with the bids received, then Steps 1 and 2 of Stage 2 are not needed. Instead, the NPV of the payments/revenues for bids is used.)

A quantitative assessment excludes NFBs. These are relevant to the VfM decision but cannot be reliably measured in financial terms or easily included in the assessment (see Section 3.2). The results of the quantitative VfM assessment should therefore not be the main or the sole criterion for the decision to use a PPP. Rather, the quantitative VfM assessment should be used to support the qualitative VfM assessment.

5.1.2 Conduct of a quantitative VfM assessment

To conduct a quantitative VfM assessment the public authority needs to have sufficient experience and skills:

- to carry out what can be complex risk-adjusted cost estimates;
- to model the private financing of the PPP option; and
- to calculate net present values using an appropriate discount rate.

It also requires access to reliable data to be able to estimate the main costs and revenues as well as to determine the allocation and pricing of relevant project risks. The lack of capacity and access to good data is a common constraint for public authorities when conducting such assessments, which can severely limit to their reliability and practical use.

Figure 12 – Overview of the quantitative VfM assessment process

Public Sector Comparator (PSC)

Stage 1	Challenges to VfM assessment	Stage 2
Step 1 Develop the *base PSC* cash flow model including expected capital and operating/maintenance costs (and revenues of the project where relevant).	*Lack of reliable cost information, especially operating costs, for PSC and PPP projects with the same service levels.*	**Step 1** Develop the PPP cash flow model based on expected capital and operating/maintenance costs and revenues for the PPP. Possible efficiency factors could be included.
Step 2 Develop the *risk-adjusted PSC* cash-flow model by adjusting project costs (and revenues) for risks.	*Lack of reliable risk valuation data (probability and impact). Process is based on assumptions.*	**Step 2** Develop the risk-adjusted PPP model by adding transaction and contract management costs, and financing requirements.
Step 3 Adjust model to ensure competitive neutrality between the PSC and PPP options (e.g. for taxation).	*Differences between theoretically assumed and actual tax arrangements.*	**Step 3** Determine the level of availability payments or end-user fees required by the private partner.
Step 4 Use a justified discount rate to discount the cash flows to get the NPV of the PSC.	*Discount rate: choice of appropriate rate. Rate chosen has a significant impact on the outcome (higher rates tend to favour the PPP option).*	**Step 4** Use a justified discount rate (usually but not always the same as the one used for the PSC) to discount the sum of the availability payments or end-user fees to get the NPV of the PPP option.

Public-Private Partnership (PPP)

Stage 3
Compare the NPVs of the PSC and PPP options

The difference in the NPVs can be small, limiting the reliability of the quantitative assessment as an input into the delivery option decision.

5.2 Stage 1 – Developing the public sector comparator (PSC)

The PSC is a theoretical risk-adjusted cost model of the most likely and efficient traditional public procurement option used by the public authority to provide the asset and deliver the required outputs.

The development of the PSC can be divided into four steps as described below.

- **Step 1: Developing the raw or base PSC cash flow model:** the *base PSC* cash flow model is developed using estimates of the planning, design, construction, operating and maintenance costs for the project together with any *third-party revenues* (e.g. revenue from making available a school's swimming pool to the public at evenings/weekends). Figure 13 lists some of the main types of costs that are considered.

Figure 13 – Main types of cost used in the cash flow models

Costs	Description
Capital expenditures (CAPEX)	*Costs for project preparation (planning, approval and environmental documents and design), procurement and construction.*
Operations expenditures (OPEX)	*Cost of operating the project during the life of the contract. The costs are either fixed or variable (depending on levels of usage) and the expected levels of usage will be important if variable costs are significant.*
Maintenance costs	*Costs to keep an asset in an appropriate condition to ensure proper performance / service delivery (no improvement or expansion).*
Reconstruction and rehabilitation costs	*Costs of replacement and rehabilitation of an asset.*

The costs used in the model:

- should be applied for the same period as the expected PPP contract;
- are usually expressed *in nominal terms*; i.e. they are adjusted for expected inflation;
- are only cash inflows and outflows, i.e. they do not include *economic* costs and benefits, depreciation or accruals estimates; and
- do not include the public authority's own management costs, contingencies or risk costs at this stage.

To be able to accurately estimate the likely costs, the public authority might require the development of a basic outline design, technical standards and output specifications for the project (sometimes called a *reference design* or *specimen design*).

The cash flow should be designed to achieve the same service outputs and performance specifications that will be expected of the PPP option. For example, the PPP option might involve the design, financing, construction and maintenance of a hospital but the provision of all medical services remain with the public authority. In this case, the private partner in the PPP would not be responsible for paying doctors, nurses and other operating costs of the hospital. Thus, neither the PPP nor the PSC cash flow models would include these operational costs.

- **Step 2: Developing the risk-adjusted PSC cash flow model:** the costs in the PSC model are adjusted to reflect the risks associated with each cost. Section 6 outlines approaches to adjusting costs to reflect risks.

  Simply described, the adjustment for risk might focus only on those risks that are planned to be transferred to the private partner under the PPP option. This assumes that the value of those risks that *remain* with the public sector will be the same in both the PSC and PPP options.

- **Step 3: Adjusting to ensure competitive neutrality:** this seeks to ensure a fair comparison of the PSC and PPP options by adjusting the costs in the PSC for any advantages (or disadvantages) available to the public authority but not to the private partner.

  For example, a public authority is not commonly subject to the same sales, payroll or property taxes (and therefore costs) as a private company. The PSC therefore needs to be increased to reflect the additional cost of the tax paid by the PPP private partner. (Note: it is not always easy to generalise on tax matters as, in reality, the private partner may be able to reduce its tax liabilities.) Alternatively, the public authority may face other costs (e.g. associated with reporting and other regulatory requirements) that the private partner is not exposed to, in which case such additional costs need to be deducted from the PSC.

  The public authority will incur costs in preparation, procurement and management of the contracts for designing, building and operating / maintaining the asset and delivering the service in a traditionally procured project. These costs will differ for the PPP option. Any difference in costs should be accounted for to ensure comparability between the costs to the public authority of both options.

- **Step 4: Discounting the cash flows to determine the NPV of the PSC:** once adjusted for risks and competitive neutrality, the cash flows of the PSC need to be discounted to a single number, expressed as the NPV for the total value of all the cash flows.

  Discounting the cash flow is necessary, as the cash flow profile over the lifetime of the traditional option is different from that of the PPP, namely:

  - within the PSC, there is a large upfront cost for the capital expenditure on the project, followed by the much reduced levels of cost associated with the subsequent maintenance and operation; and

- under the PPP option, there is usually no cost to the public authority during the construction phase, followed by a stream of higher (but regular) payments over the operating phase of the PPP contract to meet the availability payments (or end-user fees).

The calculation of the NPV follows the standard approach to discounting cash flows. The choice of discount rate can have a significant impact on the calculated NPV of these cash flows. See section 5.7 for a description of the different approaches to the choice of discount rate to use.

5.3 Stage 2 – Developing the PPP model

The PPP model estimates the payments (unitary charges/end-user fees) requested by the private partner so that it can deliver the PPP project and meet the performance standards and service outputs.

This requires an estimate to be made of the risk-adjusted costs and revenues that the private partner would assume for the duration of the PPP contract. It requires an assumption to be made on the potential financing structure, taxes and other PPP-specific cost assumptions that would be included in its model.

The development of the PPP reference model can be divided into four steps as described below:

- **Step 1: Developing the base cash flow model of the PPP reference-model:** the PPP model is usually based on similar cost and revenue assumptions as the PSC model, adjusted for assumptions on cost efficiency gains and higher revenue streams, if relevant (see Box 4).

Box 4 – Potential for efficiency gains in PPPs

The PPP option is, in general, assumed to be more efficient in respect of construction, operating, maintenance costs and the management of associated risks than the traditional option due to the operational efficiencies of the private sector and opportunities for innovation.

PPPs can incentivise innovation, as the private partner is made responsible for integrating the design, construction, financing, operation and maintenance of the project. Innovation might relate to the design, the use of better materials or construction techniques. However, the public authority should seek reliable empirical data on the probability and magnitude of such efficiency gains if applying such a factor in the assessment.

- **Step 2: Developing the risk adjusted PPP cash flow model:** the base costs of the PPP model are further adjusted by adding the PPP transaction and contract management costs, costs for risks and costs associated with private financing.

  Assumptions need to be made by the public authority regarding the expected financing structure of the PPP (e.g. the ratio of debt and equity finance, the

required return on equity investment, long-term interest costs and the required repayment profile of the debt financing) and lenders' fees (such as commitment fees and swap costs). These assumptions must be realistic and based on current market data. For this reason, it may be necessary for advisers who are familiar with PPP financing structures and market terms to assist the public authority during this stage. The costs of those risks that are transferred to the private partner under the PPP contract are also reflected in the PSC model, as these risks are borne by the public authority under the traditionally option. If the PSC model includes the cost of risks retained by the public sector in the PPP model, then the cost of these risks (as well as the risks allocated to the private sector) also needs to be identified separately and included in the PPP model. This is because the comparison between the PPP and PSC is made from the perspective of costs to the public authority. Section 6 outlines approaches to pricing and allocating risks.

- **Step 3: Determine the level of payments requested by the project partner:** the payments made by the public authority in respect of the availability payment (or from end-users in the case of a concession) are estimated based on the revenues calculated as being necessary for the private partner to cover all the project's costs (including the operating costs and debt servicing costs) and provide an adequate commercial return to the investor.

- **Step 4: Discounting the cash flows to determine the NPV cost of the PPP:** the revenue stream to the private partner (being the annual availability payments or end-user fees) is discounted at an suitable discount rate to calculate the NPV of the PPP option. A discount rate consistent with public infrastructure investment policy should be used for all present value calculations to ensure comparability with other assessments and integrity. Section 5.7 describes different approaches to determining the discount rate.

5.4 Stage 3 – Comparing the NPVs of the PSC and PPP options

Once Stages 1 and 2 are complete, the NPVs of both the PPP and PSC cash flow models can be compared. Based on a quantitative VfM assessment only, the option with the lower NPV has the potential to deliver better value for money.

The quantitative VfM assessment for both the PSC and PPP options are necessarily based on a series of assumptions (e.g. of the expected future value of costs, revenues and risks). The reliability of the cash flow models is consequently very dependent on the quality of the input data and the assumptions used by the public authority. When comparing the output of both models, the difference in NPV between the two options should, therefore, be sufficiently large (as a proportion of the total NPV) to be assured of a robust decision. A small proportionate difference is likely to fall within the margin of error of the cumulative assumptions used.

Figure 14 presents an example to illustrate the comparison of a traditional (PSC) and an availability-based PPP delivery option. In this example, the difference of EUR 26 million between the two NPVs of EUR 906 million and EUR 880 million is relatively small (3% of the lower NPV). This suggests a very small VfM advantage for the PPP

option; but such a small difference is likely to be within the margin of error in the estimation of the input costs and assumptions.

Figure 14 – Comparison of PSC and PPP delivery options

Estimated costs	PSC NPV (EUR m)	PPP NPV (EUR m)
Capital costs	720	
Life-cycle asset replacement costs	45	
Operating costs	90	
Base cash flow model[1]	**855**	
Transferred risks (capital and operating costs)	42	
Competitive neutrality (adjustment)	9	
NPV of estimated PSC costs (excluding retained risks)	**906**	
NPV of estimated PPP availability payments		**880**
Difference in NPVs (estimated saving from PPP option i.e. VfM)		26

The results of the quantitative VfM assessment remain very useful for the public authority in understanding the cost characteristics of the project and – when considering the tenders received – where value is being offered; but the comparison demonstrates that a qualitative VfM assessment should not be the main or only factor that determines the choice of delivery mode. As discussed previously, qualitative VfM considerations also play an important role in determining a preferred option.

Reference guidance documents

See: *Public Private Comparator Manual 2013,* Netherlands, (2014)

See: *Scottish Public Finance Manual,* UK (Scotland) (2006)

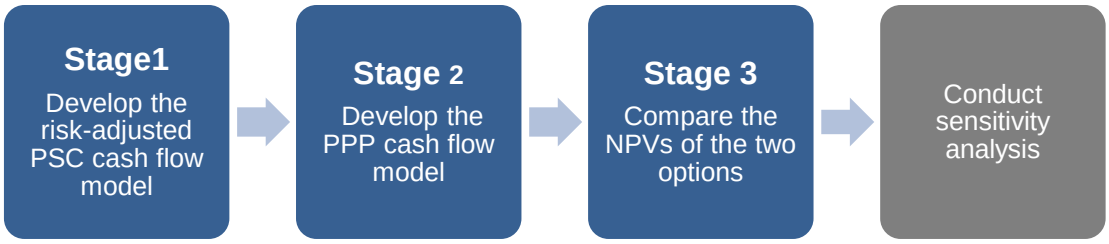
[1] The amounts shown in the PPP and PSC raw cash flow model typically differ to reflect, e.g., efficiency gains and transferred risks.

5.5 Conducting a sensitivity analysis for the cash flow models

A sensitivity analysis can be used as part of the quantitative VfM assessment process to examine the robustness of the results of the two cash flow models (see Figure 15).

The sensitivity analysis is done by making incremental, measured adjustments of key assumptions within the models to determine their individual effect on the model output.

Figure 15 –Stages of quantitative VfM assessment including a sensitivity analysis



The key assumptions that are tested in this way include:

- inflation;
- currency exchange rates;
- main input costs (e.g. construction, operation and maintenance);
- demand and revenue assumptions;
- delays in project completion (i.e. adjusting the timing of parts of the cash flow);
- the valuation of key risks;
- interest rates; and
- the discount rate.

Figure 16 shows the nature of the adjustment made to these assumptions that are more likely to reduce the VfM of a delivery option when compared to the other option (for example, increased capital costs or lower demand levels).

Figure 16 – Sensitivity analysis: change in assumption likely to have a negative effect on VfM

Assumed input value increases	Assumed input value increases or decreases	Assumed input value decreases
Capital costs Operating costs	Interest rates Currency exchange rates Inflation rates Discount rate	Demand (e.g. traffic) level Tariffs, tolls, service fees

- **Scenario analyses**

  A sensitivity analysis can also be complemented by a scenario analysis. In a demand-based PPP (concession) project, for instance, a key assumption will be the assumed demand for the concession services. The sensitivity analysis might test a number of scenarios, for example:

  - **a *base* case** using the most likely demand levels to be expected;
  - **a *down-side* case** that considers demand levels lower than the base case; and
  - **an *up-side* case** that considers demand levels higher than the base case.

  Whereas the sensitivity analysis will assess the effect of changing a key assumption, a scenario analysis will assess the effect of a group of (usually linked) assumptions changing at the same. This analysis typically focuses on those assumptions that, if changed, are expected to have the most significant effect on the project's cash flow. The scenarios analysed may be informed by an earlier sensitivity analysis.

  Both sensitivity and scenario analyses are useful for the public authority, creating a greater awareness of the risks and the potential challenges to the project. Furthermore, they can help plan risk mitigation strategies (see Section 6).

5.6 Using the PSC to assess the VfM of tenders

The PSC developed in Stage 2 of the quantitative VfM assessment can be used by the public authority to help it to assess the VfM of the tenders it receives during the procurement phase of the project.

In this type of assessment, the NPV of the PSC is compared against the NPV of the availability fees (or end-user fees) of each of the tenders received. Since the PSC continues to represent the public sector approach and not a private sector solution, no adjustment is made to its inputs once the procurement process has been launched or after the tenders have been received.

An adjustment may only be made to a PSC input after this time in the event that there has been a material change in the project scope (e.g. a road requires three lanes instead of two), service specifications or significant exogenous factors (e.g. an

unexpected and large increase in construction cost inflation or insurance costs during the procurement phase).

The PSC is based on the public authority's cost, revenue and risk assumptions at the time of the project preparation phase. These are best estimates made at the time of the PSC and will often subsequently be found to be inaccurate when compared to actual market values used in tenders. For this reason, a number of countries do not use the PSC during the procurement phase. Others, who will still make a comparative analysis, no longer require the NPV of the best PPP tender to be lower than the PSC as an absolute test of VfM.

The PSC remains a valuable tool for public authorities in judging the VfM of tenders. For example, an analysis of NPVs and the financial models might help to highlight a difference in the assumptions made by the public and private sectors, for example in the financing structure and costs or in the interpretation of the tender documents.

- **Confidentiality of the VfM assessment process**

  While most procurement processes maintain full confidentiality of the public authority's activities, an issue that does arise is whether there is a benefit to disclosing the PSC to tenderers.

  There is a risk that disclosure may cause a tenderer to increase its price if the PSC is seen to be higher than it might otherwise bid, but is otherwise affordable. The disclosure of the PSC in one competition might also influence prices in subsequent tenders for similar projects. In some jurisdictions, the PSC is never disclosed, even after the PPP contract has been awarded.

  However, disclosure of the PSC can help to inform tenderers and, more particularly, lenders of the affordability limit for the project. This can help to guide tenderers on the expected level of services to be provided and improve the value of the solutions offered within the affordability limit. This can be especially useful if the project has unique characteristics that are not easily priced or benchmarked.

  Disclosure also improves the transparency of the process, especially for other stakeholders. Where a public authority chooses to disclose the PSC (beyond a simple affordability limit), it is suggested that only the base costs assumptions in the PSC might be disclosed, but that the public authority's estimate of the value of the risks should not.

5.7 Choice of discount rate

As discussed, the timing of the cash flows in the traditional PSC and PPP options differ during the construction and operation phases. Discounting cash flows that have different profiles over a long contract period allows them to be compared on a more equal basis (i.e. accounting for the time value of money).

While the actual profile of the cash flow is important to the analysis, the discount rate used can also have a significant impact on the result of the comparison. Figure 17 shows the NPV of a nominal EUR 1 million at Year 0 at each of Years 1, 5, 10, 25 and 30 for two different discount rates: 5% and 8% respectively. (**Note:** The cash flows

shown in this example are expressed in nominal terms (i.e. adjusted for inflation). Consequently, the discount rate is also expressed in nominal terms.)

Figure 17 – Effect of the discount rate on the NPV over time

Discount Rate	Year 0	Year 1	Year 5	Year 10	Year 25	Year 30
5%	1,000,000	952,400	783,500	613,900	295,300	231,400
8%	1,000,000	925,900	680,600	463,200	146,000	99,400
Relative difference of the NPVs	-	3%	15%	33%	102%	133%

Given that the payments made over the operational phase of a PPP are higher than in a traditional contract (where the costs are much higher during the construction phase), using a high discount rate can result in significantly lower payments and therefore appear to favour the PPP option.

There is much debate on the choice of the discount rate used. This mostly reflects the public authority's (and wider government's) policy perspective when making the infrastructure investment decision. This perspective could be *financial* (e.g. as in France and Germany), *socio-economic* (e.g. as in UK) or *investment-related* (e.g. as in New Zealand).

- **Financial perspective**: the public authority makes *a comparable financing decision* when choosing whether to use the PPP option. Accordingly, the discount rate is based on the borrowing costs of the public authority (usually based on the cost of government bonds) with tenors that are similar to the period of finance required by the PPP option.

  In most cases, project risks are reflected in adjustments to the cash flows of the PSC and PPP models and not in the discount rate itself. This approach has the advantage of using transparent market data, where available.

  This approach has limited availability where there is no issue of long-term government bonds of equivalent tenor to the PPP option. Significant volatility in the cost of borrowing is another limiting factor (e.g. because of a financial crisis).

- **Socio-economic perspective**: the public authority makes a *public spending decision* when deciding whether to use the PPP option. The discount rate is based on economically derived assumptions. Project risks are reflected in adjustments to the cash flows of the PSC and PPP models and not the discount rate.

  This approach offers a single, stable rate that is calculated only periodically by the government and is applied consistently across all public spending decisions. However, if the rate used is significantly higher than the prevailing public cost of finance then this may lead to criticism that the higher rate unfairly favours the PPP option.

- **Investment perspective**: the discount rate is based on the cost of capital for the project, as would be the case for a typical investment decision. The discount rate is based on an approach such as the weighted average cost of capital.[2]

In most countries, the same discount rate is applied to the cash flows of both the PSC and the PPP options. The selection of the discount rate should be guided by:

- the ease of use and availability of underlying data to support the calculation;
- consistency with wider government policy;
- consistency in application across the public sector;
- transparency of approach;
- avoidance of an excessively high rate (to avoid possible criticism that the rate unfairly favours the PPP option, for the reasons stated above); and
- the results of sensitivity analyses to determine the effect of the choice of discount rate on the result of the assessment, highlighting this in the overall VfM assessment.Literature on quantitative VfM and risk allocation

[2] New Zealand Treasury (2015), The Public Sector Comparator and Quantitative Assessment (p.33) (http://www.treasury.govt.nz/statesector/ppp/guidance/public-sector-comparator)

6. Risk analysis and allocation in a quantitative VfM assessment

A comprehensive risk analysis involves:

- identifying all the relevant project risks;
- understanding the value (cost) of such risks;
- determining which party should be responsible for the risk;
- examining how each risk and its impact can be reduced or mitigated; and
- establishing how risks are monitored and managed over the duration of the project.

A five-step process to risk analysis is described in this section, together with an introduction to the use of a risk register as a tool to manage the risk process.

Having a good understanding of the nature, likelihood and impact of risks enables a public authority to make informed decisions on project costs and risk allocation. It also facilitates the development of the PPP contract, the dialogue with tenderers and the subsequent assessment of tenders and management of the PPP contract.

Reference guidance documents

See: *Allocating Risks in Public-Private Partnership Contracts,* Global Infrastructure Hub (2016)

See: *Risk assessment for Public-Private Partnerships: A Primer,* US Department of Transportation (2012)

6.1 Relevance of risk analysis to VfM assessment

Step 2 in the process for developing each of the PSC and PPP cash flow models requires the base project costs (and revenues) to be adjusted for the costs of the project risks. This requires the public authority to identify and value risks and, under the PPP option, to allocate them either to the public authority or the private partner.

The value of risks transferred to the private sector is one of the main differentiating factors between traditional public contracts and the PPP option. The value of transferred risks needs to be included in the calculation of the NPV of the two delivery options.

6.1.1 Practical challenges of risk analysis

Getting information for reliable assessment of risks, and especially of their cost, is often difficult. The depth of risk analysis carried out should reflect the quality of information available and the character (e.g. complexity and size) of the project.

For PPP projects that are of relatively low value and with limited information on risks, a practical approach for a public authority may be to consider only the primary risks to be transferred to the private partner.

For more complex and larger projects, the public authority should seek to conduct a more comprehensive analysis of the risks.

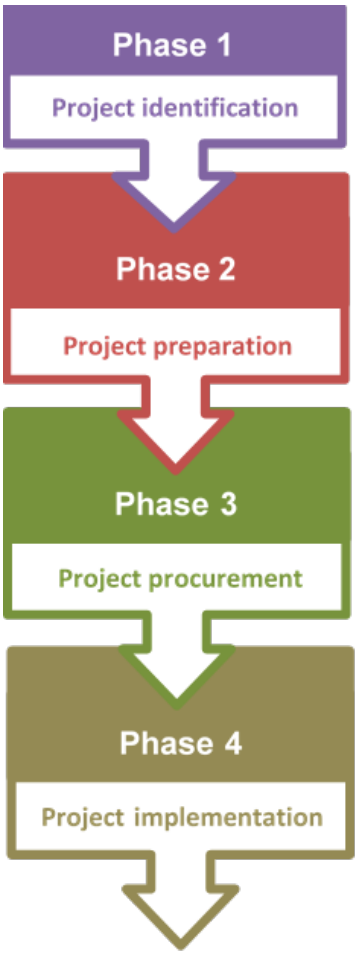
6.2 The five steps of the risk process

The risk management process presented here is divided into five steps, as outlined in Figure 18. Although shown in a sequential order in line with the project cycle, the analysis is an iterative process with activities in individual steps sometimes overlapping with others.

This section offers practical, high-level guidance on each of these steps, while highlighting the link to the VfM assessment. Each step will help in the development and updating of the *project risk register*.

Additional literature sources are included for further guidance at the end of the section.

Figure 18 – Risk process following a probability analysis approach



1. ***Identify and prioritise risks:*** *identify all risks relevant to the project during the preparation, procurement, construction and operational phases. The identified risks are recorded in a risk register.*

2. ***Assess and value risks:*** *determine the probability of the identified risks occurring and their impact value. Prioritise risks based on their probability and impact.*

3. ***Risk allocation:*** *allocate responsibility for dealing with each risk to the different entities within the public and private parties.*

4. ***Risk mitigation:*** *identify ways to reduce the probability of risks occurring and their level of impact, including through further risk allocation during the procurement process.*

5. ***Risk monitoring and review:*** *monitor, review and manage risks (and manage new risks that might arise). This process continues throughout the duration of the PPP contract*

6.3 Timing of the different risk process activities over the project cycle

The risk analysis is a continuous and iterative process throughout the duration of the project as shown in the figure above:

- **during the project identification phase**: an initial risk identification is made. The process of identifying risks will continue into and throughout the project preparation phase. The risks are recorded in the risk register;
- **during the project preparation phase:** the project risks identified are assessed, valued and allocated between the public and private partners;
- **during the procurement phase**: any new risks identified are assessed. The initial risk allocation may be adjusted during a dialogue with tenderers. At the end of this phase, the agreed allocation of relevant risks will be reflected in the PPP contract; and
- **during the implementation phase:** the parties are responsible for monitoring, reviewing and most importantly managing their allocated risks.

6.4 Risk identification

Risk identification allows the public authority to develop an understanding of all relevant risks that could affect the success of the project.

In Phase 1 this might focus initially on only the main project risks, with more detailed information and further risks being added during Phase 2.

It is good practice to record the identified risks in a *project risk register* (see Section 6.8 on risk management).

Approaches commonly used to identify risks include one or more of the following:

- **risk workshops:** these are commonly used during Phases 1 and 2 to identify the main risks, their level of probability and likely impact value (if valuing the risks using a probability analysis). To get different perspectives from relevant project stakeholders on the risks to the project, these workshops will often include the project team and their advisers, external stakeholders and user.

  A brainstorming of the main risks might be organised around a pre-prepared list of potential sources of risk (based on previous experience) and examined over each phase of the project cycle. Expert advisers might facilitate this process;
- **risk checklists:** these can facilitate the identification of risks based on prior experience (see Figure 19). Examples of checklists can be found from a number of public sources; however, it is important that the specific circumstances of the project be taken into account;
- **experience from similar projects:** this can provide empirical data on actual risks and their cost. While the number of past projects available might be

insufficient to supply reliable data, they can provide guidance on these risks and might highlight any unidentified risks; and

- **related documents and guidance**: while not designed as risk lists *per se*, other forms of guidance such as standardised PPP contracts and the EPEC/Eurostat guidance on statistical treatment of PPPs are also useful sources of information on risks (and their allocation).

Figure 19 – Overview of relevant risks in PPPs

Risk category	Risk might include:
Site risks	
Land acquisition/use	Availability and suitability of the site to be used for the project; property title and associated obligations; loss of land value due to project works (injurious affection)
Planning and permitting	Approvals based on subsequent detailed designs, risks of objections from protestors opposed to use of the site for the project
Access, rights of way and easements	Cost and delay risks as a result of permissions needed from adjacent land-owners
Geological conditions	Ground conditions that may lead to additional costs, including as a result of inaccurate land surveys
Environmental and social risk	Latent environmental site conditions (such as previous contamination) and any subsequent risk of damage to the environment or local communities
Connections and interface risks	Risks that the government / a third party responsible for connections to network/utilities fails to fulfil its obligations, risks associated with temporary diversion of utilities during construction or damage to existing utilities (e.g. existing pipes and cables under the project site)
Heritage, archaeological conditions	Risks associated with costs and delays due to unexpected archaeological finds
Disposal of surplus land	Risk associated with the timing and value of surplus land (especially if this is required to part-fund the project, risks associated with moving users from an old to a new site
Construction risks	
Design	Risk that the asset has not been designed adequately for the required services, delays in design approvals, changes to design
Construction and completion	Risk that construction faces cost overruns or completion/commissioning is delayed due to project-specific factors (e.g. labour disputes, poor project management and supervision, defects, unmet quality standards, subcontractor disputes and damages, technical competence and financial health of sub-contractors, obtaining operating permits). May also include latent defects (e.g. as result of refurbishing an existing facility)

Risk category	Risk might include:
Technology	Risk that technologies (especially if new or untested) are applied in the construction (or operation) of the assets which might lead to delays or performance issues, risk of the applied technology becoming obsolete or changes in nature of use of the project asset due to a new emerging technology
Supply risk	Risk that the private party (SPV or sub-contractors) fails to deliver its obligations, other risks associated with the quality, cost and timing of supply inputs
Revenue risk during construction	Risk of lower than expected revenues (if any) used to help fund project costs if the project involves taking over and operating an existing facility as part of the overall project (e.g. rehabilitation/expansion of an existing toll road or airport)
Operational risks	
Availability risk	Risk of interruption in asset availability and services delivery to the agreed performance indicators, quantity and price/costs
Operation, performance and maintenance risk	Risks of cost overruns associated with providing the service and maintaining the asset to the required performance standards and specifications over its operational phase and the price/cost of doing so, accidents, pollution during operation, higher operating costs due to higher than anticipated levels of use or types of user
Demand risk	Risk that the usage levels of the services are less than anticipated. For availability payment- based PPPs the public authority risks paying more for a higher level of service than is actually required. For many user-pay PPPs, this leads to revenue risks (see below). Demand levels may reflect demographics, user ability to pay or network effects. Demand risks are often under-estimated/difficult to assess or allocated inappropriately
Revenue risk	Risks that revenue levels are lower than expected (for user-pay PPPs) due to lower demand, ability/willingness to pay or changes in prices. For availability–based PPPs, risk of the public authority's long-term willingness/ability to pay for the contracted service
Network and interface risks	Risks associated with the dependence of the PPP project on other services provided by the public authority that have an impact on the delivery of the PPP project service (e.g. provision of IT services or security that remain with the public authority) or compatibility of the PPP project services with other services that need to be provided
Definition of output specs, changes	Risks of poorly defined service requirements and payment mechanisms, changes to service requirements
Supply risk	Risk of availability or price increase of inputs required to operate the asset (e.g. availability/price of energy for a facility) availability and/or cost of insurance, risk that the private party (private partner or its sub-contractors) fails to meet its obligations, changes in composition/participation of the private partners (e.g. loss of partner with key technology)
Hand-over and residual value	Risks associated with the quality and residual value of the project assets at the end of the PPP contract

Risk category	Risk might include:
Main economic/financial risks	
Exchange rate risk	Risks as a result of a fluctuations/unanticipated mis-match between foreign currency debt service requirements/other costs and local currency revenues
Financing risk	Risk of accessing debt and equity financing on reasonable terms before financial close
Interest rate risk	Risks associated with fluctuations/unanticipated changes in interest rates. PPP project financing usually requires fixed rate financing for the tenor of the loan but this may not be readily available in some markets
Inflation rate risk	Risk that the input costs of the project increase more than expected inflation rates
Political, regulatory, *force majeure* and other risks	
Political risk	Risks of adverse government intervention, such as expropriation, acts of omission, interference, general strikes
Regulatory/change of law risk	Risk of changes in law which are discriminatory to the private partner/project, sector-specific or affect capital expenditure, general changes in law that affect operational costs (i.e. affect the market generally)
Force majeure	Risk of unforeseen events beyond the control of either party, such as natural disasters, war and civil disturbance, which delay or impede service delivery; unknown risks with insufficient contingency for these
Termination	Financial consequences of PPP contract termination due to public authority default or private party default

Reference guidance documents

For more information on contractual clauses for risk allocation and their impact on the statistical treatment, please see *A Guide to the Statistical Treatment of PPPs*, EPEC/Eurostat (2016)

For more information on risk allocation, please see *Allocating Risks in Public-Private Partnership Contracts*, Global Infrastructure Hub (2016)

6.5 Risk valuation and prioritisation

Risk valuation is one of the most challenging exercises in the risk analysis process. Various approaches, with different levels of complexity, may be used. Each requires reliable information and the application of a reliable and robust risk valuation process.

It should be recognised that not all risks can be valued in quantitative terms; but the process should record all risks, which may include an assessment in qualitative terms.

6.5.1 Using a single-point estimate and categories of probability and impact

The most common approach to valuing risks determines the value of each risk based on estimating the probability of the risk occurring and multiplying this value by the expected impact value of the risk. The impact value may be either the direct consequences (in terms of cost and/or time) or the indirect impact (such as a delay in the availability of a facility requiring additional costs of temporary accommodation). This is often referred to as the single-point or deterministic approach.

A simple range of probabilities (e.g. measured against ranges in a scale such as 0 to 5% etc.) and scale of impact (e.g. less than 10% of construction cost) can be used when assessing each risk (see example in Box 5 and in Figure 20). Alternatively, they can be described in qualitative terms *(*e.g. very high). The product of probability and impact may be expressed in a similar way.

The determination of both probability and impact can be assessed using either a workshop, a checklist of risks and/or data from past projects. Certain risks can also be aggregated to help simplify the process, especially where groups of risks are expected to be inter-dependent or affected by common factors, or the individual risks are too small or difficult to value individually. Care should be taken to avoid double counting such risks.

Certain risks, such as those with a high value (i.e. that are either indicated as having a (very) high probability of occurrence or a (very) high impact value) can be prioritised for more detailed assessment and management.

Risks which are expected to be retained by the public authority in both the PSC and the PPP options, might not be assessed.

Box 5 – Example of approach used by U.S. Department of Transportation

An example of the single-point estimate approach is set out in guidance prepared by the U.S. Department of Transportation (DOT) where the probability of occurrence and the impact value of a risk are each described in five categories:[3]

- *Probability: greater than 70% (and below 90% - a risk with a probability of above 90% is perceived as an actual cost); 40% to 70%; 20% to 40%; 5% to 20% and 0% to 5%.*

[3] U.S. Department of Transportation (2012), *Risk Assessment for Public-Private Partnerships: A Primer*

- *Impact value as a percentage of the base cost: greater than 25%; 10% to 25%; 3% to 10%; 1% to 3%; and less than 1%.*

- *Duration impact (additional option to assess risks): greater than 52 weeks; 16 to 52 weeks; 4 to 16 weeks; 1 week to 4 weeks; and 0 to 1 week.*

The results can be portrayed in a table and colour coded to prioritise the various risks – see Figure 20.

Figure 20 – Example of a risk prioritisation matrix

			Cost Consequence				
			> 25%	*10% to 25%*	*3% to 10%*	*1% to 3%*	*< 1%*
Scale			**5**	**4**	**3**	**2**	**1**
Probability	*> 70%*	**5**	Very High	High	High	Medium	Low
	40% to 70%	**4**	High	High	Medium	Medium	Low
	20% to 40%	**3**	High	Medium	Medium	Low	Low
	5% to 20%	**2**	Medium	Medium	Low	Low	Low
	0% to 5%	**1**	Low	Low	Low	Low	Very Low

Source: Virginia DOT (2011), PPTA Risk Analysis Guidance

6.5.2 Using weighted average risk values

This approach determines approximate risk values by multiplying the probability with a weighted average of the estimated minimum (*Min*), most likely (*ML*) and maximum (*Max*) impact values of the risk (the same approach may also be used to determine the time impact).[4]

Thus: $$Risk\ value\ =\ probability\ of\ occurrence \times \frac{(Min + (ML \times 4) + Max)}{6}$$

This approach should be combined with a sensitivity analysis to test the results by determining the impact of changes to critical assumptions.

Reference guidance documents

See: *Risk assessment for Public-Private Partnerships: A Primer*, U.S. Department of Transportation (2012)

6.5.3 Using probability distributions and a Monte Carlo analysis

This more sophisticated approach is based on the use of probability distributions for cost outcomes (instead of a single-point estimate as described above). It depends on the availability of reliable data to construct the distribution curves. This can be defined through data from past projects or based on expert opinion.

[4] U.S. Department of Transportation (2012), *Risk Assessment for Public-Private Partnerships: A Primer*

A Monte Carlo analysis is a simulation-based risk modelling approach whose outputs are the result of many simulations. It aims to model the collective impact of a number of individual risks.

Using probability distributions of expected values, a risk value can be determined at a required confidence threshold chosen by the public authority (e.g. 95% confidence, sometimes referred to as level of *risk tolerance* or *risk averseness*).

This type of approach may be used to assess a number of variables jointly with significant uncertainties jointly (with appropriate probability distributions). It is relatively complex and may need the support of an external adviser. Required inputs are information on correlation between individual or groups of risks, the probability distribution, including mean, standard deviation and the distribution curve.

6.5.4 Optimism bias

Optimism bias (OB) is the tendency for public authorities to be over-optimistic about the key project parameters, including capital costs, operating costs, project duration and expected benefits. Empirical evidence of the performance of past projects in terms of *actual* versus *expected* outcomes can be used to establish *OB factors* for different sectors. These can then be applied to the project costs and timing assumptions for future projects.

This approach has the benefit of being evidence-based and of capturing the impact of those risks that might otherwise be ignored. As the preparation of the project develops, and more accurate and reliable assessment of specific project costs takes place, adjustments for optimism bias may be reduced.

Use of OB factors can simplify the process of adjusting costs for risk. It depends on the availability of the factors themselves, the quality of the analysis that underlies the determination of the factors, the appropriate application of the factors to the given project, project-specific circumstances and the extent to which the OB factors available in one market (such as the UK) are appropriate in other markets (such as the Western Balkans).

Box 6 - Use of Optimism Bias in the UK

Figure 21 below provides indicative figures for optimism bias factors as per the UK central government guidance on project appraisal and evaluation. It has been prepared by taking into consideration the results of the study and reductions in optimism bias levels observed to provide upper (U) and lower (L) bounds for optimism bias.

At the later stage of project preparation, sufficient project risks should have been identified and effective risk management strategies developed so that the lower bound values for optimism bias can be used at this point.

Figure 21 – Optimism Bias by project type (%) (UK)

Project type / OB Impact	Duration		CAPEX	
	Upper	Lower	Upper	Lower
Non-standard Buildings	39	2	51	4
Standard Buildings	4	1	24	2
Non-standard Civil Engineering	25	3	66	6
Standard Civil Engineering	20	1	44	3
Equipment/Development	54	10	200	10

Source: Review of Large Public Procurement in the UK, Mott McDonald (2002)

Reference guidance documents

For additional information on optimism bias, see *The Green Book: Central Government Guidance Document on Appraisal and Evaluation,* UK Treasury, (2018)

See: *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, Farquharson, Torres de Mästle, Yescombe and Encinas, (2011)

6.6 Risk allocation

An appropriate allocation of risks is a key driver for achieving value for money in a PPP. A risk should be allocated to the party that is better able either to influence or manage the likelihood of its occurrence, or to the party who is better able to control or absorb the impact of the risk.

The party bearing the risk should understand the risk. When facing a potential financial loss, the party bearing the risk has a strong incentive to reduce the likelihood of occurrence and therefore the potential impact of a risk. Optimal risk allocation therefore helps to ensure that risks are managed cost-effectively and increases VFM.

The private partner requires to be paid for bearing a transferred risk. The public authority should therefore assess if the private partner can manage the risk for less cost than the public sector. Transfer of a risk that the public authority is better able to manage at a lower costs might otherwise reduce VfM.

Allocating the wrong risks to the private partner can also affect bidder interest in the project and reduce competition in the bidding process. On the other hand, if the public authority retains too many risks this could also limit VfM and the private sector's incentives to deliver the project to the agreed quality, quantity and cost. The rationale for using a PPP in this instance may therefore be weak.

[5] Note that these values are indicative starting values for calculating optimism bias levels in current projects. The upper bound (U) does not represent the highest possible values for optimism bias that can result and the lower bound (L) does not represent the lowest possible values that can be achieved for optimism bias. The study was based on a detailed assessment of 50 major projects with costs exceeding GBP 40 million.

Within the PPP contract, a risk can either be retained by the public authority, transferred to the private partner or shared between both. The aim of risk allocation is to achieve an *optimal* allocation of risks, not to transfer as much risk as possible to the private partner.

Optimally allocating risk depends ultimately on how well the PPP contract is subsequently managed. Inadequate contract management can result in risks transferred to the private partner falling back on to the public authority. This could be due to poor contract management, ignoring the terms of the contract, or a subsequent change to the contract terms.

The Annex B presents an example of potential risk allocation in a PPP. Risk allocation depends, however, on the specific nature of the project, the selected PPP mode, and sector and country characteristics.

Reference guidance documents

See: *Allocating Risks in Public-Private Partnership Contracts*, Global Infrastructure Hub (2016)

6.7 Risk mitigation and reduction

Risk mitigation involves reducing the probability of a risk occurring or reducing the consequences if it materialises. The public authority could seek to reduce the probability of a risk occurring by, for example, undertaking detailed geological, environmental and social studies during project preparation, preparing high quality contract documents or adopting a staged approach to development of the project (without prejudicing the underlying needs for the project).

Risk mitigation can also involve reducing the level of *exposure* to the risk. This might mean transferring the risk to another partner as opposed to reducing it *per se* (e.g. allocating the risk to an insurer).

6.8 Risk monitoring and management

To ensure service performance and VfM, all parties need to monitor and manage risks throughout the life of the project. Monitoring and managing risks is often supported by a risk management plan.

A *project risk register* is a standard project management tool to help monitor and manage risks throughout the project cycle. It offers a structured overview (often in the form of a spreadsheet) of all relevant risks of the project and their expected impact. It identifies who is responsible for managing each of the risks and any relevant mitigation actions.

The risk register should be initiated during Phase 1 and continue to be developed durig Phase 2, even if only basic information on risks is available. The risk register is continuously expanded/updated as risks are identified and allocated (or mitigated) over the project cycle.

The *project risk register* might contain the following headings for each risk:

- name and identification number of the specific risk;
- description of the nature of the risk;
- expected cause of the risk;
- project phase(s) where the risk arises/materialises;
- expected probability of occurrence (quantitative or qualitative);
- expected impact value of the risk (quantitative or qualitative);
- identification of which party is expected to be responsible for the risk (this might also include how the risk is handled in the PPP contract, where relevant); and
- outline of any risk mitigation and reduction strategy in relation to the risk.

Using a colour code can help to highlight and prioritise risks that need particular attention due to their impact, likelihood of occurrence or timing.

The risk register seeks to capture as many of the risks as possible over the project cycle. It may include a wider set of risks than those that are directly relevant to the PPP contract, such as those risks that need to be managed before the PPP contract is signed and project interfaces for which the public authority is responsible.

For the PPP contract (and the quantitative VfM assessment), the term *risk matrix* is often used to describe a tabulated definition of the risk allocation in the contract.

Table A in the Appendix presents an example of a *risk matrix* for a EUR300 million road project. The example also shows estimated risk values and the final value of the risks transferred to the private sector, which would feed into the calculation of the risk-adjusted NPV of the PSC.

Reference guidance documents

See: *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets,* Farquharson, Torres de Mästle, Yescombe and Encinas, (2011)

See: *Public-Partnership Partnerships Reference Guide, Version 3*, World Bank, (2017)

Annex A – Summary of approaches to VfM assessment processes in selected EU countries

This section presents a summary of VfM assessment approaches in a number of EU countries.[6] The table summarises the application of the assessment (*i.e.* which projects must be assessed), and institutional responsibility for preparing the assessment and approving the procurement mode. The stages, importance and content of the qualitative and quantitative assessments are also described.

Table A – Comparison of VfM assessment approaches in selected EU countries

	France	Germany	Netherlands	United Kingdom*
VfM assessment (legally required)				
	Mix of quantitative and qualitative criteria.	Predominantly quantitative with some qualitative criteria.	Predominantly quantitative with some qualitative criteria.	Qualitative considerations frame approach with quantitative assessment to support overall assessment.
Timing of assessments				
Identification phase		Yes	Yes	Yes
Preparation phase	Yes	Yes		Yes
Procurement phase	Yes	Yes	Yes	Yes (qualitative)
Approach				
Perspective	Authority financing perspective.	Authority financing perspective.	Socio-economic perspective.	Socio-economic perspective.
Quantitative VfM assessment				
	Cash flows of options differentiated by efficiency factors and risks. May also include economic benefits of earlier service delivery.	Cash flows of options largely differentiated by efficiency factors and risks.	Cash flows of options largely differentiated by efficiency factors.	Cash flows of options differentiated by risks and efficiency factors.
Risk analysis	Value of risks reflected in the cash flow items. Use of probability distributions of risk and 'Value at Risk' approach.	Assessment of probability and impact of risks using qualitative factors followed by more detailed quantitative assessment of priority risks. Focus on the risks that can potentially be transferred to the private partner.	Adjustment to the cash flows for 'pure' risks (such as additional unforeseen requirements /costs) and technical risks but not market risks which are reflected in discount rate.	Adjustment to the cash flows of procurement options to reflect risk. Use of 'optimism bias' factors to capture unknown uncertainties on costs and revenues based on empirical evidence

[6] For more information, see EPEC (2015a), Value for Money Assessment: Review of approaches and key concepts.

	France	Germany	Netherlands	United Kingdom*
Discount rate	Based on cost of financing for authority with a maturity equal to the expected PPP project contract duration. Same rate applied to all procurement options.	Based on cost of financing for government with an average maturity of the expected PPP project financing, and for sizeable projects (e.g. motorways) rates from the government borrowing yield curve for each year of discounting. Same rate applied to all procurement options.	Based on (private sector) weighted average cost of capital. Same rate applied to all procurement options.	Based on socio-economic time preference rate established by HM Treasury applicable to all public investment decisions. Same rate applied to all procurement options.
Qualitative / non-valued effects	Preliminary Assessment (EPMR - évaluation préalable du mode de realisation) to include qualitative comparison covering, in particular, service quality and environmental performance to supplement quantitative assessment.	Preliminary test of project suitability as PPP prior to detailed quantitative assessment. Subsequently, all relevant non-valued effects assessed (e.g. socio-economic effects). Supplements quantitative Assessment.	Evaluation of a number of qualitative factors during the initial project identification phase. Guidance on key areas for assessment that includes focus on flexibility of service provision, priority of service to government, budgetary flexibility and innovation.	Qualitative assessment considers viability, desirability, and achievability factors throughout process. At procurement stage, strong focus on quality of market competition.
Institutional responsibilities				
	Carried out by any authority planning to implement a project as a 'contrat de partenariat' (*i.e.* authority-pay PPP), in accordance with the national guidance issued by the central PPP unit (Fin Infra). Fin Infra required to review and validate the EPMR within 6 weeks of submission.	Carried out by the public authority in charge of procuring the project, which may be at federal, Länder or local government level. For PPPs in certain sectors at the federal level (transport/highways and public buildings), dedicated federal entities are involved.	Authorities have a responsibility to carry out VfM assessments for their projects.	Authorities responsible for carrying out VfM assessments for their projects in line with central or regional VfM guidance. Regional governments responsible for developing their own VfM guidance and applying the related assessment and approval processes.

Note: * Following the introduction of the PF2 model, HM Treasury plans to update its guidance on appraising PF2 procurement options.

Source: EPEC (2015), Value for Money Assessment: Review of approaches and key concepts, as updated

Annex B – Example of how risks might be allocated in the PSC and PPP options.

Risk	PSC	PPP
General risk		
Specific change in law	Public sector	Public sector
General change in law	Public sector	Shared
Force majeure events	Public sector	Shared
Political risk	Public sector	Public sector
Financial risk		
Interest rate risk	Public sector	SPV / Concessionaire
Exchange rate risk	Public sector	Shared or Concessionaire
Financing risk	Public sector	SPV / Concessionaire
Design risk		
Design delay	Public sector/ Contractor	SPV / Concessionaire
Inappropriate specification of requirements	Public sector	Public sector
Fitness for purpose	Public sector	SPV / Concessionaire
Site Risks		
Ground conditions	Public sector	SPV / Concessionaire
Unforeseeable contamination	Public sector	Shared risk
Archaeological artefacts	Public sector	Public sector
Right of way acquisition	Public sector	Shared risk
Approvals, permits and permissions	Public sector	Shared risk
Construction risk		
Inaccurate cost estimates	Public sector	SPV / Concessionaire
Interruption and delay	Public sector	SPV / Concessionaire
Prime contractor financial distress	Public sector	SPV / Concessionaire
Commissioning (Operational Readiness)	Public sector or Contractor	SPV / Concessionaire
Operational risk		
Cost escalation above CPI/LCI	Public sector	SPV / Concessionaire
Performance and availability risk	Public sector	SPV / Concessionaire
Demand risk	Public sector	Public sector, SPV or shared
Monitoring and oversight	Public sector	Public sector
Change in specific operating standards	Public sector	Public sector
Interface risk to other projects (electricity, water or other utility:		
Upstream	Public sector	Public sector or Shared
Downstream	Public sector	SPV / Concessionaire
Maintenance and asset management	Public sector	SPV / Concessionaire

Annex C – An example of a PPP project risk matrix

The table below presents an example only of a risk matrix for a toll road project in a European country. The risks included in the table below are not exhaustive and the importance and allocation of risks is project specific.

Note: A public authority is advised to engage experienced advisors when developing the risk matrix.

The total *base costs* of the project (column 2) is assumed at EUR 300 million.

The *risk value* (column 5) is calculated by multiplying the *base cost* (column 2) with the estimated *impact value* (column 3) and *probability of occurrence* (column 4).

The *Allocation to the private partner [%]* (column 6) defines the percentage of the particular risk identified in the row that is to be transferred to the private partner (i.e. 100% means the complete transfer of the risk to the private partner). This percentage is multiplied by the *risk value* (column 5) to get the financial value of the risk allocated to the private sector (shown in column 7).

The value of the risks allocated to the private partner (total at bottom of column 7) is added to the costs in the cash flow model of the PSC to enable a comparison with the PPP financial model.

In this example, the sum of all risks amounts to EUR 130.65 million, which represents 43.6% of the original base costs. In a PPP procurement, the private sector would bear risks with an accumulated value of EUR 90.53 million or 69.3% of the identified and valued risks.

Table C – Risk (Allocation) Matrix

Risk	Base cost EUR m	Impact value %	Probability of occurrence %	Risk value EUR m	Allocation to private partner %	Allocation to private partner EUR m	Comments
Column 1	2	3	4	5	6	7	8
Construction phase							
Financing risk	300	25%	10%	7.5	100%	7.5	The private partner is responsible for raising the necessary equity and debt
Land acquisition, availability and rights of way	300	5%	1%	0.15	0%	0.0	The government will need to ensure that it owns the site and that the land is available in time for financial close.
Site Conditions	300	5%	1%	0.15	50%	0.075	Site condition risk might be transferred to the private sector but certain major risks might be excluded (such as contamination).
Design	300	10%	25%	7.5	100%	7.5	Design risk is the risk that the asset will not perform and deliver the services to the expected quality and quantity.
Design changes requested by Gov	300	10%	25%	7.5	0%	0.0	Cost overruns due to design changes requested by the government are retained by the government
Construction cost overrun	300	50%	5%	7.5	100%	7.5	The risk of construction cost overruns should be allocated to the private partner.
Delay in completion	300	10%	25%	7.5	100%	7.5	The private partner should bear the risk of delays with the exception of relief events, which would trigger an extension of the completion time.
Utilities outside the boundary	300	1%	5%	0.15	0%	0.0	In most cases, the government is responsible for providing these utilities, such as connectors to the network.
Operational phase							
Maintenance, repair and life-cycle costs	300	10%	20%	6.0	100%	6.0	Risk of higher maintenance costs due to higher labor costs or required input goods.
Operating costs not as anticipated	300	10%	1%	0.3	100%	0.3	The allocation depends on the asset/sector. Operational risks, such as supply of input in electricity generation assets, might be allocated to the public sector.
Failure to meet service quality standards	300	10%	10%	3.0	100%	3.0	The private partner is obliged to ensure the asset and services comply with the agreed output specifications and performance standards.
Availability risk	300	20%	10%	6.0	100%	6.0	Usually allocated to the private partner.

Risk	Base cost EUR m	Impact value %	Probability of occurrence %	Risk value EUR m	Allocation to private partner %	Allocation to private partner EUR m	Comments
Column 1	2	3	4	5	6	7	8
Changes in end-user fee levels	300	10%	50%	15.0	80%	12.0	Private partner sets the toll levels building on a toll formula included in the PPP contract, subject to a maximum level determined by the government. Government takes political risk on the level of the toll.
Demand / traffic risk	300	40%	25%	30	20%	6.0	The private sector is in general reluctant to accept demand risks, especially in the road sector.
Liability to third parties	300	10%	5%	1.5	90%	1.35	The operator should be usually liable for third partner property damages or injuries.
Default of grantor / government	300	100%	1%	3.0	0%	0.0	The government bears the risk
Default of operator or private partner	300	100%	1%	3.0	100%	3.0	Private partner bears the risk.
Default of subcontractor	300	40%	0.5%	0.6	100%	0.6	Private partner/contractor/operator is responsible for acts of its subcontractors.
Legislation changes: - General legal - Sector specific - Tax legislation	 300 300 300	 20% 20% 20%	 1% 1% 1%	 0.6 0.6 0.6	 100% 0% 100%	 0.6 0.0 0.6	Common approach: - Private partner bears risk on changes applying to all - Government bears risk onsector specific changes - Private partner bears risk on tax changes (unless sector specific).
Inflation risk	300	10%	25%	7.5	80%	6.0	Private partner risk but the toll (end-user fee) formula should include an indexation mechanism.
Interest rate risk	300	10%	25%	7.5	100%	7.5	Private partner bears this risk which might be mitigated using swaps.
Exchange rate risk	300	50%	5%	7.5	100%	7.5	Exchange rate risk might be of less importance in the Western Balkans due to currency pegs or limited volatility. Banks often request the private partner to hedge.
Force Majeure	300	100%	1%	3.0	50%	3.0	Force Majeure risks are usually shared equally between the private and public sector.
Total	**300**			**130.65**		**90.525**	

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Glossary of main terms and expressions

Affordability

Affordability relates either to the ability of the public authority to make performance-based payments to the private partner from the public budget (in *a government-pay PPP*) or the ability and willingness of users to pay the tariffs/tolls charged by the private partner (in a *concession*).

Availability payment (and availability-based PPP)

In an availability-based PPP (a type of *government-pay* PPP), the public authority pays the private partner for the provision and use of public infrastructure and related public services. Payment is linked to the availability of the asset and/or the services for the duration of the PPP contract (the *availability payment* or *unitary payment/unitary charge*). The availability standards and service requirements of the public authority are defined in the PPP contract.

In most contracts of this type, payment to the private partner only starts once the construction phase is complete and the services can be delivered.

Bankable (and bankability)

A PPP project is considered bankable if lenders are willing to finance it.

Candidate

A company or group of companies (usually in the form of a consortium or joint venture) that submits a response to an invitation to pre-qualify for a project as part of the procurement process.

Concession

A concession (sometimes called a *user-pay PPP*) is a type of PPP in which the public authority grants a private partner the right to generate revenues from the provision of a service. The private partner is paid by the users of the service and normally assumes the risk of any change in the users' demand for the service. The service requirements of the public authority are defined in the concession contract. (e.g. keeping a bridge open to traffic, collecting tolls from users of a bridge).

Conditions precedent

Conditions that need to be fulfilled before the PPP contract becomes effective or before drawing on the debt. Either party might be responsible for fulfilling the conditions in a particular PPP contract, but the private partner usually has a greater responsibility in this respect.

Contract close (and commercial close)

Contract close (sometimes called *commercial close*) is the point at which the PPP contract is signed by the public authority and the private partner. The main terms of the PPP contract will be completed at financial close.

Credit enhancement

The credit profile of a project finance structure can be improved by various forms of credit enhancement; for example:

- **credit support** in the form of guarantees by the sponsors relating to the performance of the SPV's obligations, financing facilities that provide temporary liquidity to deal with specific risks and insurance against certain project related risks.
- **public sector support** such as direct funding through a capital contribution (e.g. from national, regional or other funds) or contingent support or guarantees for certain types of risks which cannot otherwise be effectively managed or mitigated by the SPV, lenders or subcontractors.

Default (and event of default)

A material breach of contract by one party (including persistent breach) which entitles the other party to terminate the contract. The PPP contract will often define defaults by reference to precise contractual provisions.

Direct agreement

A direct agreement is a contract, linked to the PPP contract, which creates a contractual relationship between participants in the project whose main contractual relationships are with the private partner. The principal direct agreement is between the public authority, private partner and lender and allows the lender to exercise step-in rights to the PPP contract. The public authority may also have direct agreements with the private partner's sub-contractors that allow it to step-in to the sub-contract in an event of private partner default.

Economic Cost Benefit Analysis (ECBA)

The ECBA assesses whether the benefits brought to society by a particular public investment justify and outweigh the implementation costs. It will usually consider the social, environmental, and economic advantages and disadvantages of the investment as well as to the actual monetary costs and revenues generated by the project.

Equity (and equity investors)

The equity in a PPP is the portion of the project's CAPEX that is contributed as share capital in the SPV (i.e. pure equity) and subordinated debt (usually through shareholder loans and sometimes also called *junior debt*). The equity investors (also sometimes

called *equity providers*, *sponsors* or *shareholders*) usually hold both the pure equity and subordinated debt and generally control the SPV. Some equity investors may not take an active role in the management of the PPP contract.

The public authority may sometimes provide equity to the SPV, either directly or through a public investment fund. Public participation in the equity of the SPV (including any rights of control) can influence the statistical treatment of the PPP contract.

Financial close

Financial close is the point at which the financing documents for the PPP contract (including the direct agreement between the lenders and the public authority) are signed and the financing becomes available for the project. It is usually the point at which the interest rate for the project is fixed using an *interest rate swap*. Financial close usually happens at either the same time as or shortly after contract close.

Fiscal risk

PPPs create long-term financial commitments that could (over time and when considered with other commitments) challenge the coherence of the public budget process and ultimately a country's fiscal sustainability and macroeconomic stability. Fiscal risks can exist when the actual and contingent commitments on PPPs are not clearly recognised or understood and where they have not been reported and budgeted for centrally.

Lenders

The term *lenders* in these WBIF EPEC Guides generally refers to the organisations who provide finance to the PPP in the form of senior debt to the private partner. They can include commercial banks, multilateral and bilateral development banks and finance institutions, and institutional investors such as pension funds and insurance companies.

Life-cycle costs (and whole-life costs)

This is the total cost of creating an asset and managing it to the end of its useful life (or for the duration of the PPP contract). It includes the initial cost of construction and the cost of all subsequent maintenance works that ensure that the asset continues to perform at an acceptable or minimum standard. The PPP contract defines the minimum standard of performance to be met by the private partner.

Needs assessment

Assessment of the gap between an agreed set of objectives and existing arrangements that the investment aims to address.

Net Present Value (NPV) and discount rate

The NPV is the discounted value of a project's cash inflows minus the discounted value of its cash outflows. It is calculated based on a *discount rate*. This subject is discussed more fully in the *WBIF EPEC Guide to the qualitative and quantitative assessment of Value for Money in PPPs*.

On and off balance sheet (statistical) treatment of PPPs

A public contract is recorded as either on or off the central government's balance sheet according to the national system of accounts (commonly referred to as the *statistical treatment* of a contract). The treatment of a PPP contract within the government's balance sheet can be an important consideration in the preparation of the project.

Optimism bias

Optimism bias is the systemic behaviour of public authorities (based on project experience) to both i) underestimate the duration of the construction phase of a project and its CAPEX and OPEX and ii) to overestimate the benefits/revenues it will produce.

Output specification (and user requirements)

These are the public sector's requirements defined as a clear set of outputs that are directly measurable in accordance with quality performance standards. The output requirements (sometimes also *user requirements* or *authority requirements*) can include technical requirements and service requirements. They are a distinctive feature of PPP projects in comparison to the input requirements normally used in traditional project procurement.

Payment mechanism

The payment mechanism is the principal means or mechanism within the PPP contract for remunerating the private partner. In a government-pay PPP the two main types of payment mechanism are

- *availability-based*, in which the payments made by the public authority to the private partner are linked to the infrastructure being available for use and services being performed as defined by the PPP contract. The *availability payment* is subject to deductions if the infrastructure is unavailable or where the services are performed poorly. The public authority takes the risk of variation in the demand for the services; and
- *demand-based*, where the payments to the private partner are linked to the level of usage of the infrastructure.

In a concession, the payment mechanism might regulate the basis on which the private partner is entitled to charge users and otherwise generate revenues.

Persistent breach

A persistent breach occurs when the private partner consistently fails to observe provisions of the PPP contract, e.g. fails to comply with the same provision on a repeated number of occasions or accumulates financial or contractual penalties over a defined period.

PPP contract

This is the main contractual document between the public authority and the private partner. It sets out the responsibilities of the private partner for the design, construction, finance, operation and maintenance of the asset and the delivery of the associated public services. The PPP contract allocates project risks between the parties and contains the payment mechanism.

The PPP contract is described more fully in the WBIF EPEC *Guide to the main provisions of an availability-based PPP contract.*

PPP unit

A specialised public organisation that provides PPP expertise in the public sector. This can include advice and support to public authorities in devising and implementing PPP projects and/or PPP policy. It may also have an assurance or approval role. It is usually a part of a government ministry or central public agency, such as the ministry of finance.

Preferred tenderer

The tenderer who has submitted the best compliant tender for a PPP project and with whom the public authority intends to sign the PPP contract. The preferred tenderer becomes the *private partner* when the PPP contract is signed.

Private partner

The private sector company that enters into the PPP contract, with responsibility for delivering and maintaining the public infrastructure and related public services for the duration of the contract. It usually takes the form of an SPV.

Procurement procedure

EU Directive 2014/24/EU (the 2014 Directive) provides four procurement procedures:

- the open procedure;
- the restricted procedure;
- the competitive dialogue procedure; and
- the competitive procedure with negotiation.

The 2014 Directive reforms and supersedes Directive 2004/18/EC (the 2004 Directive). It covers public procurement in general, laying down the principles that should apply to all works, supplies or services contracts. Legislation addressing public procurement within the Western Balkans Region conforms, in large part, to the 2004 Directive.

Procurement process

The WBIF EPEC guides use this expression to describe the steps and activities that the public authority adopts to implement its chosen procurement procedure. In defining the procurement process the public authority will consider matters such as timetable for the procurement (including key milestones), numbers of tenderers to pre-qualify, number and format of meetings with tenderers.

Project cycle

The project cycle is used in the WBIF EPEC guides to describe the series of steps that is followed by a typical PPP project from the time that the project scope is initially defined, through to its completion and delivery of the related services. The project cycle is divided into four phases:

- Phase 1: Project identification phase
- Phase 2: Project preparation phase
- Phase 3: Project procurement phase
- Phase 4: Project implementation phase

Project finance (and project finance structures)

PPP projects are generally financed using *project finance* structures. A project finance structure seeks to optimise the availability of finance and underpin the allocation of risks to the parties best able to manage those risks.

The project assets and revenues are usually ring fenced within an SPV. The SPV's lenders and investors rely either exclusively (i.e. *non-recourse* financing) or mostly (i.e. *limited recourse* financing) on the cash flow generated by the project as their security for the repayment of their loans or to earn a return on their investment. This is in contrast to corporate finance where lenders rely on the strength of the borrower's balance sheet as security for repayment of their loans.

Project identification phase

The identification phase is the first phase of the *project cycle*. At the end of this phase the public authority determines whether the selected project can (and should) be further developed as a PPP and whether to proceed to the project preparation phase.

Project implementation phase

The implementation phase is the fourth and final phase of the *project cycle*. It follows financial close and includes the management of the PPP contract and regular monitoring of the private partner's performance.

Project preparation phase

The preparation phase is the second phase of the *project cycle.* It includes the development of the potential project in readiness for the project procurement phase. The public authority will establish the project's governance structure (i.e. project team and steering committee), conduct further detailed assessments of the project and prepare relevant documents for the procurement phase. The assessments include the detailed affordability analysis, risk allocation and VfM assessment. The public authority defines the preferred procurement procedure and process, evaluation criteria and draft PPP contract.

Project procurement phase

The procurement phase is the third phase of the *project cycle.* It follows the preparation phase and starts with the publication of the procurement notice. It includes all the activities associated with the procurement process up to the award of the PPP contract through to contract close, and ends with financial close.

Public authority

The public sector body (sometimes called the *procuring authority* or *contracting authority*) that plans to enter into a PPP contract with a private sector partner. In an availability-based PPP, it is also the public body who is responsible for paying the availability payment to the private partner.

Public-Private Partnerships (PPP)

The term PPP describes a long-term contractual arrangement in which a public authority and a private partner collaborate to deliver public infrastructure (or assets) and related services. Under a PPP contract, the private partner bears significant risks and management responsibilities. The two main types of PPP contract are a *government-pay* PPP (which includes *availability-based and demand-based* PPPs) and a *concession* (sometimes called a *user-pay* PPP).

Public sector comparator (PSC)

The PSC is a risk-adjusted cash flow model of delivering a project using a traditional public procurement option (sometimes called the *public sector benchmark, PSB*). A comparison of the net present values of the PSC and PPP options for a particular project may be used as part of a quantitative VfM assessment.

Qualitative and quantitative VfM assessments

A *qualitative VfM assessment* often involves testing the PPP project delivery option against a set of pre-defined suitability (i.e. qualitative) criteria to determine the potential for the PPP option to provide VfM.

A *quantitative VfM assessment* usually involves estimating and comparing the costs of a PPP project delivery option with a traditional public project delivery option (i.e. a PSC) where the project risks have been valued. The estimated cost of each delivery option is calculated on a present value basis using an appropriate discount rate.

This topic is discussed more fully in the WBIF EPEC *Guide to the qualitative and quantitative assessment of Value for Money in PPPs.*

Risk management

Risk management is a process that helps to identify, analyse, price and allocate project risks. It starts during the project identification phase and continues for the duration of the PPP project (including the monitoring and review of risks during the implementation phase). This topic is discussed more fully in the WBIF EPEC *Guide to the qualitative and quantitative assessment of Value for Money in PPPs.*

Senior debt

This is the main form of debt raised by the private partner and ranks above other forms of debt (e.g. junior or subordinated debt). The senior debt lenders usually have first priority for loan repayment by the private partner and (in an event of default) over its assets or revenues. The senior debt lenders also have priority of decision-making powers if they exercise rights to step in.

Suitability (as a PPP)

Suitability refers to the appropriateness of using the PPP option to deliver a particular project. A project is, in principle, considered suitable as a PPP if it possesses certain project specific characteristics and the national legal, institutional and market environments are supportive. This topic is discussed more fully in the WBIF EPEC *Guide to the qualitative and quantitative assessment of Value for Money in PPPs.*

Special Purpose Vehicle (SPV) or Special Purpose Company (SPC)

See *private partner.* A legal corporate entity whose sole purpose is to implement the PPP project and which is generally incorporated in the country where the project is located.

Step-in rights

A step-in right is a contractual provision that allows someone to step into the place of a party that has defaulted on is obligations so that the party *stepping in* may rectify the default (and prevent termination of the contract). The two principal types of step-in

rights in a PPP are those given to the public authority and those given to the project's lenders.

Subordinated debt

Debt that is generally provided by the shareholders of the SPV and in the same proportion to their respective shareholdings. This debt is subordinated to other debt (i.e. ranks below senior debt).

Supervening event

A supervening event is an event that occurs during the course of the PPP contract that is outside the control of either party. Such events are treated in the PPP contract as either a *compensation event*, a *relief event* (or *delay event*) or as a *force majeure event*. These events are described more fully in the WBIF EPEC *Guide to the main provisions of an availability-based PPP contract.*

Tenderer

A company or group of companies (usually in the form of a consortium or joint venture) that has been pre-qualified (and perhaps also shortlisted) by the public authority as a candidate in the procurement process for the PPP project with the intention of being invited to submit a tender.

Traditional public procurement or delivery

A traditional public procurement or delivery approach involves the provision and funding of public infrastructure and related services by the public authority. The public authority is responsible for the long-term operation and maintenance of the infrastructure. The public authority also bears most of the risks associated with the integration and optimisation of the various activities within the project.

The most commonly-used traditionally procured contracts are:

- a build (or construction) only contract (usually with a separate contract for the design of the infrastructure);
- a design-build contract;
- an engineering, procurement and construction (EPC) contract; and
- an operations and maintenance only contract.

Value for Money (VfM)

VfM is considered as the relative balance between the *value* and the *cost* of the different delivery options that are available (i.e. as between a traditional delivery approach and a PPP approach), where:

- the *value* aspect comprises the quality and quantity of the service (i.e. the performance level) of the different options, delivered over the period of the PPP; and
- the *cost* aspect usually represents the cost to the payer (i.e. the public authority and/or end-user) over the same period to deliver the different options (including the cost of managing the risks).

A *VfM assessment* will identify the delivery option that represents the best balance of long-term risk-adjusted value and cost.

This topic is discussed more fully in the WBIF EPEC *Guide to the qualitative and quantitative assessment of Value for Money in PPPs.*

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