KINGDOM OF CAMBODIA

Nation Religion King

GOVERNMENT OF THE KINGDOM OF CAMBODIA

STANDARD OPERATING PROCEDURES FOR PUBLIC-PRIVATE PARTNERSHIP PROJECTS

GUIDELINES

October 2022

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងសេដ្ឋកិច្ច និង ហិរញ្ញវត្ថុ
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ប្រកាស
ស្តីពី
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ឧបនាយករដ្ឋមន្ត្រី
រដ្ឋមន្ត្រីក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ

- បានឃើញរដ្ឋធម្មនុញ្ញនៃព្រះរាជាណាចក្រកម្ពុជា
- បានឃើញព្រះរាជក្រឹត្យលេខ នស/រកត/០៩១៨/៩២៥ ចុះថ្ងៃទី៦ ខែកញ្ញា ឆ្នាំ២០១៨ ស្តីពីការតែងតាំងរាជរដ្ឋាភិបាលនៃព្រះរាជាណាចក្រកម្ពុជា
- បានឃើញព្រះរាជក្រឹត្យលេខ នស/រកត/០៣២០/៤២១ ចុះថ្ងៃទី៣០ ខែមីនា ឆ្នាំ២០២០ ស្តីពីការតែងតាំង និងកែសម្រួលសមាសភាពរាជរដ្ឋាភិបាលនៃព្រះរាជាណាចក្រកម្ពុជា
- បានឃើញព្រះរាជក្រមលេខ នស/រកម/០៦១៨/០១២ ចុះថ្ងៃទី២៨ ខែមិថុនា ឆ្នាំ២០១៨ ដែលប្រកាសឱ្យប្រើច្បាប់ស្តីពីការរៀបចំនិងការប្រព្រឹត្តទៅនៃគណៈរដ្ឋមន្ត្រី
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- បានឃើញព្រះរាជក្រមលេខ នស/រកម/០៥០៨/០១៦ ចុះថ្ងៃទី១៣ ខែឧសភា ឆ្នាំ២០០៨ ដែលប្រកាសឱ្យប្រើច្បាប់ស្តីពីប្រព័ន្ធហិរញ្ញវត្ថុសាធារណៈ
- បានឃើញព្រះរាជក្រមលេខ នស/រកម/១១២១/០១៨ ចុះថ្ងៃទី១៨ ខែវិច្ឆិកា ឆ្នាំ២០២១ ដែលប្រកាសឱ្យប្រើច្បាប់ស្តីពីភាពជាដៃគូរវាងរដ្ឋ និងឯកជន
- បានឃើញអនុក្រឹត្យលេខ ៤៣ អនក្រ.បក ចុះថ្ងៃទី២៨ ខែកុម្ភៈ ឆ្នាំ២០២២ ស្តីពីការរៀបចំនិងការប្រព្រឹត្តទៅនៃក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ
- បានឃើញអនុក្រឹត្យលេខ ៤១ អនក្រ.បក ចុះថ្ងៃទី២៥ ខែមីនា ឆ្នាំ២០២២ ស្តីពីការគ្រប់គ្រងវិនិយោគសាធារណៈ
- បានឃើញអនុក្រឹត្យលេខ ១៧៤ អនក្រ.បក ចុះថ្ងៃទី៣១ ខែសីហា ឆ្នាំ២០២២ ស្តីពីការដាក់ឱ្យប្រើនីតិវិធីគ្រប់គ្រងប្រតិបត្តិការរួមសម្រាប់គម្រោងភាពជាដៃគូរវាងរដ្ឋ និងឯកជន
- យោងតាមតម្រូវការចាំបាច់របស់ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ

សម្រេច

ប្រការ១ .-

ត្រូវបានដាក់ឱ្យប្រើគោលការណ៍ណែនាំ ចំនួន ០៣ សម្រាប់គាំទ្រដល់ការអនុវត្តអនុក្រឹត្យលេខ ១៧៤ អនក្រ.បក ចុះថ្ងៃទី៣១ ខែសីហា ឆ្នាំ២០២២ ស្តីពីការដាក់ឱ្យប្រើនីតិវិធីគ្រប់គ្រងប្រតិបត្តិការរួមសម្រាប់គម្រោងភាពជាដៃគូរវាងរដ្ឋ និងឯកជន (ភ.រ.ជ.) ដូចមានខ្លឹមសារភ្ជាប់មកជាមួយប្រកាសនេះ ដែលរួមមាន:

១- គោលការណ៍ណែនាំស្តីពីការសិក្សាសមិទ្ធិលទ្ធភាពសម្រាប់គម្រោង ភ.រ.ជ.

២- គោលការណ៍ណែនាំស្តីពីការវិភាគហិរញ្ញវត្ថុសម្រាប់គម្រោង ភ.រ.ជ.

៣- គោលការណ៍ណែនាំស្តីពីការវិភាគតម្លៃនៃលុយសម្រាប់គម្រោង ភ.រ.ជ.។

ប្រការ២ .-

ប្រកាសនេះ មានវិសាលភាពអនុវត្តចំពោះក្រសួង ស្ថាប័ន និងរដ្ឋបាលរាជធានី ខេត្ត ដែលមានសមត្ថកិច្ចក្នុងការចូលរួមរៀបចំអភិវឌ្ឍគម្រោង ភ.រ.ជ.។

ប្រការ៣ .-

នាយកខុទ្ទកាល័យ អគ្គលេខាធិការ អគ្គនាយកនៃអគ្គនាយកដ្ឋានភាពជាដៃគូរវាងរដ្ឋ និងឯកជន អគ្គនាយកនៃគ្រប់អគ្គនាយកដ្ឋាន អគ្គាធិការនៃអគ្គាធិការដ្ឋាន និងប្រធានគ្រប់អង្គភាពពាក់ព័ន្ធក្រោមឱវាទក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ ត្រូវទទួលបន្ទុកអនុវត្តប្រកាសនេះឱ្យមានប្រសិទ្ធភាពខ្ពស់ ចាប់ពីថ្ងៃចុះហត្ថលេខានេះតទៅ។

ថ្ងៃចន្ទ ១៤កើត ខែភទ្របទ ឆ្នាំខាល ចត្វាស័ក ព.ស.២៥៦៦

រាជធានីភ្នំពេញ ថ្ងៃទី៣១ខែតុលា ឆ្នាំ២០២២

ឧបនាយករដ្ឋមន្ត្រី

រដ្ឋមន្ត្រីក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ

អគ្គបណ្ឌិតសភាចារ្យ អូន ព័ន្ធមុនីរ័ត្ន

កន្លែងទទួល:
- ទីស្តីការគណៈរដ្ឋមន្ត្រី
- ខុទ្ទកាល័យសម្តេចអគ្គមហាសេនាបតីតេជោនាយករដ្ឋមន្ត្រី
- ខុទ្ទកាល័យសម្តេច ឯកឧត្តម លោកជំទាវ ឧបនាយករដ្ឋមន្ត្រី
- គ្រប់ក្រសួង ស្ថាប័ន
- សាលារាជធានី ខេត្ត
- ដូចប្រការ៣
- រាជកិច្ច
- ឯកសារ-កាលប្បវត្តិ

[Unofficial Translation]

KINGDOM OF CAMBODIA

NATION RELIGION KING

Ministry of Economy and Finance

No: 815 MEF-Prk

Prakas

On

Promulgating the Guidelines

to Support the Implementation of the Sub-decree No.174 ANKr.BK dated August 31, 2022

on Promulgating the Standard Operating Procedures for the Public-Private Partnerships Projects

Deputy Prime Minister

Minister of Economy and Finance

- Having seen the Constitution of the Kingdom of Cambodia;
- Having seen the Royal Decree No. NS/RKT/0918/925, dated September 6, 2018, on the Formation of the Royal Government of Cambodia;
- Having seen the Royal Decree No. NS/RKT/0320/421, dated March 30, 2020, on the Formation and the Amendment of the Members of the Royal Government of Cambodia;
- Having seen the Royal Kram No. NS/RKM/0618/012, dated June 28, 2018, on Promulgating the Law on the Organization and Functioning of the Council of Ministers;
- Having seen the Royal Kram No. NS/RKM/0196/18, dated January 24, 1996, on Promulgating the Law on the Establishment of the Ministry of Economy and Finance;
- Having seen the Royal Kram No. NS/RKM/0508/016, dated May 13, 2008, on Promulgating the Law on the Public Finance System;
- Having seen the Royal Kram No. NS/RKM/1121/018, dated November 18, 2021, on Promulgating the Law on the Public-Private Partnerships;
- Having seen the Sub-Decree No. 43 ANKr.BK, dated February 28, 2022, on the Organization and Functioning of the Ministry of Economy and Finance;
- Having seen the Sub-Decree No. 41 ANKr.BK, dated March 25, 2020, on the Management of Public Investments;
- Having seen the Sub-Decree No. 174 ANKr.BK dated August 31, 2022 on Promulgating the Standard Operating Procedures for the Public-Private Partnerships Projects;
- Pursuant to the necessity of the Ministry of Economy and Finance;

Hereby Decides

Article 1 .-

Promulgate three (3) Guidelines to support the implementation of the Sub-decree No.174 ANKr.BK dated August 31, 2022 on promulgating the Standard Operating Procedures for the Public-Private Partnerships Projects (SOP for PPP Projects) as attached to this Prakas consisting of:

1. Guidelines on Feasibility Study for PPP projects;
2. Guidelines on Financial Analysis for PPP projects; and
3. Guidelines on Value for Money Analysis for PPP projects.

Article 2 .-

This Prakas applies to all Line Ministries, Institutions, the Municipality/Provincial Administration, which are under their own purview to prepare and develop PPP Projects.

Article 3 .-

Cabinet Director, General Secretariat, Director General of the General Department of Public-Private Partnerships, Director Generals of all General Departments, Inspector General of the General Inspectorate, and Heads of all relevant Units under the Ministry of Economy and Finance shall implement this Prakas from the date of signature.

Phnom Penh, October 31, 2022

Deputy Prime Minister

Minister of Economy and Finance

Signature and Seal

AKKA PUNDIT SAPHEACHA **AUN PORNMONIROTH**

Receiving Places:

- Cabinet of the Council of Ministers
- Cabinet of Samdech Akka Moha Sena Padei Techo HUN SEN, Prime Minister
- Cabinet of Deputy Prime Ministers
- All Line Ministries and Institutions
- Municipality and Provincial Administration
- As Article 3
- Royal Gazette
- Archives-Chronicles

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ABBREVIATION

BEC	Bid Evaluation Committee
DSCR	Debt Service Coverage Ratio
DSRA	Debt Service Reserve Account
EIA	Environment Impact Assessment
ENPV	Economic Net Present Value
FIRR	Financial Internal Rate of Return
FS	Feasibility Study
FNPV	Financial Net Present Value
GDPPP	General Department of Public-Private Partnerships
GSM	Government Support Measures
IA	Implementing Agency
IDC	Indefinite Delivery Contract
IRR	Internal Rate of Return
LLCR	Loan Life Coverage Ratio
MEF	Ministry of Economy and Finance
MRA	Maintenance Reserve Account
NPV	Net Present Value
PDF	Project Development Facility
PIC	Public Investment Committee
PPP	Public-Private Partnerships
PRC	Procurement Review Committee
PSC	Public Sector Comparator
RGC	Royal Government of Cambodia
SCBA	Social Cost Benefit Analysis

SOE	State-owned Enterprise
SPC	Special Purpose Company
TA	Transaction Advisors
TAS	Transaction Advisory Services
TOR	Terms of Reference
USP	Unsolicited Proposal
VfM	Value for Money
WACC	Weighted Average Capital Cost

GUIDELINES ON FEASIBILITY STUDY

1. Introduction

1.1. The Guidelines on Feasibility Study are intended to provide a standard reference for the tasks and activities that are normally carried out when conducting a feasibility study for a potential PPP Project (hereafter referred to as the Project). The scope and level of various studies undertaken during the feasibility study will largely depend on the nature, size and complexity of the Project. While most of the tasks provided in the Guidelines will normally be required for a feasibility study, there may be small and less complex Projects that may not need the full scope of the tasks outlined in these Guidelines.

1.2. The purpose of these Guidelines is therefore to provide guidance to the IA when developing the Terms of Reference (TOR) for the Transaction Advisors (TA). The starting point will include all the tasks outlined in these Guidelines and removing those which are not relevant for the Project for which the feasibility study is required. It is also possible that the TA may identify some of the studies which may not be required, or additional studies which may be necessary. The IA will therefore be assisted and guided by the TA in ensuring that all the necessary studies are undertaken.

1.3. There may be some very complex and high-quality infrastructure Projects where the Private Partner would be required to introduce and incorporate state-of-the-art technology and innovative digital solutions. For such types of PPP Projects, there may be additional tasks that would be required to be carried out in the feasibility study. The IA will need to examine international best practices and examples for such types of Projects before developing the TOR.

2. Purpose

2.1. The main purpose of the feasibility study is to determine if PPP Project provides Value for Money (VfM) outcome for the Royal Government of Cambodia (RGC - hereafter referred as the Government) and whether it is technically, economically, financially and commercially viable, if structured as a PPP.

2.2. The decision to undertake the feasibility study is taken after the PPP Project has been identified and prioritized under Step 1 and 2 of the PPP Project Cycle and the allocation of the necessary funds under the PPP Window of the PDF for PPPs in Step 3 have been approved by the PIC. The Feasibility Study is conducted in Step 4: Preparation stage of the PPP Project Cycle as prescribed in the **SOP for PPP Projects, Vol. I: Policies and Procedures**.

3. Objectives of the Feasibility Study

3.1. The full Feasibility Study is carried out to determine if there is sufficient basis for the development of the Project as a viable and bankable PPP Project. The Feasibility Study of the Project is undertaken to determine if the following key PPP criteria are met:

- Technical solution for the implementation of the Project is feasible and cost-efficient.
- Environmental and social impacts are acceptable and can be mitigated.

- Legal and regulatory framework of the Kingdom of Cambodia have been conducive for undertaking as a PPP project.
- There is value addition where the economic benefits of the Project outweigh the economic costs.
- Proposed PPP arrangements are more efficient than a non-PPP option.
- Proposed PPP arrangements are bankable, that is, if the Project is able to attract investors and lenders to finance the investment costs of the Project.
- Project is commercially and financially viable, that is, if the Project is able to generate sufficient revenues to cover investment costs and provide an adequate return to investors.
- There is a balanced sharing of risks between the Government and the Private Partner.
- Services provided are affordable to users (also to low-income users, if relevant).
- Project is financially sustainable for the Government, both in the short and in the long term.
- Institutional capacity is adequate for implementing the PPP arrangement.

3.2. The Feasibility Study will provide the necessary analysis and the basis on which the Government can make three key informed decisions:

- The decision to proceed with the approval, procurement and implementation of the Project as a PPP
- The choice of the optimal PPP Model
- The decision to provide government support measures where necessary.

3.3. The Feasibility Study will also constitute the basis for the structuring of the PPP project and the preparation of the bidding documents including the technical and financial terms, and the draft PPP Contract.

3.4. In some exceptional cases where the Project is of complex technical nature or very large, there may be a need for the IA to conduct a Pre-Feasibility Study before undertaking the full Feasibility Study. This will provide a cost-effective solution as the cost for conducting a full Feasibility Study is very high and it would be a waste of funds only to find out at the end that the project is not feasible and bankable as a PPP. The Pre-Feasibility Study will provide the basis of whether to proceed with the full Feasibility Study.

3.5. Such Pre-Feasibility Studies are required to undertake in much more in depth analysis than the simple desk study carried out by the IA during the project identification, selection and prioritization of the PPP projects. The Pre-Feasibility Study, where required, will carry out an initial assessment to determine whether the Project has sufficient potential as a PPP Project and justifies carrying out a full Feasibility Study. The Pre-Feasibility Study may be financed from the PDF for PPPs on an exceptional basis. The indicative scope of the studies carried out under the Pre-Feasibility Study and the necessary guidance are provided in the section below.

4. Pre-Feasibility Study

4.1. A pre-feasibility study may be required to be carried out under the following circumstances:

(i) Where a Project has passed the selection criteria and is being considered as a priority PPP Project but there still remains significant doubts about its viability and bankability.

(ii) Where there are a number of technical alternatives for implementing the Project. The alternatives may relate to scale, scope, phasing, choice of technology, or other considerations, which are dependent on the project type. In such cases, the Pre-Feasibility study will carry out a preliminary assessment of the alternatives and determine the preferred alternative, which can be studied in-depth during the feasibility study stage.

4.2. The IA shall submit the request for undertaking a Pre-Feasibility Study at the same time as the application for funding of the Feasibility Study from the PDF for PPPs after the Project has passed the Prioritization stage. The GDPPP shall review the request for the inclusion of the Pre-Feasibility Study in the application and evaluate if any one of the above reasons is applicable. The GDPPP submit its recommendation to the PIC. The PIC shall make the final decision on the matter.

4.3. The TA will be recruited to undertake both the Pre-Feasibility Study and the full Feasibility Study with the Pre-Feasibility Study undertaken as the 1st stage of the assignment. The TA will only proceed with the full Feasibility Study after the Pre-Feasibility Study has established the potential of the Project as a PPP and approved by the IA and GDPPP. In very exceptional cases, the IA may request for funding to undertake the Pre-Feasibility Study on a stand-alone basis, and if approved by the PIC, a consulting firm from the IDC Panel shall be recruited to undertake the Pre-Feasibility Study.

4.4. Where the source of funding is not from the PDF for PPPs, the IA shall need the concurrence of the GDPPP prior to conducting the Pre-Feasibility Study. The IA shall submit the request to the GDPPP which reviews and evaluates the request as prescribed in Paragraph 4.2 above. The consultants for the Pre-Feasibility Study shall be from the IDC Panel. Where the funding is provided from a Development Partner (DP), its guidelines for the recruitment of consultants shall be permitted if the DP does not agree to use TA from the IDC Panel.

4.5. The scope of assessment under the Pre-Feasibility study shall include, but not limited, to the following:

(i) Needs and options analysis
(ii) Legal feasibility
(iii) Technical feasibility

(iv) Market assessment
(v) Scoping of environment and social impacts
(vi) Preliminary financial viability assessment and identification of necessary government support measures
(vii) Risk assessment and choice of PPP model
(viii) Qualitative Value for Money (VfM) analysis.

4.6. Illustrative areas of analysis and coverage for the above scope are described in **Appendix 1** which shall serve as a guidance. The actual scope will need to be determined based on project specific dynamics and appraisal requirements.

5. Full Feasibility Study

5.1. A wide range of tasks are required to be carried out by the TA which will be specified in the terms of reference (TOR) for the Transaction Advisory Services (TAS). The scope of the studies and analysis undertaken during the Feasibility Study will generally comprise of the following tasks:

(i) Legal and institutional analysis

(ii) Technical studies as follows:

a) needs and options analysis
b) project objective, scope and description
c) technical feasibility
d) estimation of Project cost
e) output specifications

(iii) Demand study

(iv) Market interest assessment

(v) Financial analysis

(vi) Economic analysis

(vii) Risk assessment

(viii) Assessment of the Government Support Measures (GSM)

(ix) Environmental and social impact assessments

(x) Quantitative VfM analysis and

(xi) Commercial principles of the PPP Contract.

5.2. Illustrative areas of analysis and coverage for the above scope are described below as a guidance. The actual scope will need to be determined based on project specific dynamics and appraisal requirements. The following sections provide *general guidelines* for the IA to understand the nature and type of tasks that need to be carried out for the preparation of the Feasibility Study.

5.2.1. Legal and institutional analysis

(i) The *legal analysis* shall normally include, but not limited to, the following:

- Compliance of the proposed Project with the relevant laws and legislations and regulations of the Kingdom of Cambodia related to the following:
  - PPPs
  - Investment
  - Public Financial System
  - Land
  - Secured Transactions
  - Taxation
  - Government Securities
  - Issuance and Trading of Non-Government Securities
  - Expropriation of Land
  - Accounting and Auditing
  - Customs
  - Environmental Protection and Natural Resource Management.
  - Social Security
  - Labor
  - Other relevant areas where a PPP project needs to comply with.
- Identification of potential legal risks and obstacles
- Action plan to resolve or manage the potential legal risks and obstacles (e.g., action plan for managing the compliance with labor laws during construction of the Project)
- Identification of licenses and approvals that are required for the implementation of the Project, and identification of the responsible entity for obtaining the licenses and approvals – i.e., whether the IA or the Private Partner.

(ii) The *institutional analysis* will normally include, but not limited to, the following:

- Establishing the legal authority of the IA to undertake the proposed Project
- Mapping of the public stakeholders of the Project and definition of their roles and responsibilities during construction and operations
- Determining the institutional arrangements for the Project:
  - Project Management Unit within the IA
  - Review and reporting arrangements
  - Project monitoring arrangements

5.2.2. Technical studies

(i) Needs and options analysis

(a) Where a needs and options analysis has been undertaken during the Pre-Feasibility Study stage, were relevant, this analysis will be updated in greater detail during the Feasibility Study stage. Where no Pre-Feasibility Study was undertaken, a needs and options analysis will be normally be conducted following the same steps as outlined for the Pre-Feasibility Study (*see* **Appendix 1**) in more detail and based on more accurate studies and surveys.

(b) The needs assessment will be based on in-depth studies to establish the service gap accurately. This will normally include the following types of studies depending on the nature of the Project:

- household surveys
- traffic surveys
- willingness to pay surveys.

(c) Based on the detailed needs assessment, options for meeting the service gap will be identified (similar as prescribed for the Pre-Feasibility Study). However, the following additional studies/analysis are carried out during the Feasibility Study stage:

- alternative technological options will be considered, where relevant
- the options will be normally evaluated based on specific criteria as given below which will need to be modified on a project-to-project basis:
    - lifecycle costs
    - replacement cycles
    - economic life
    - efficiency and effectiveness in meeting the service need
    - capacity of the local/national/international market to meet the service needs in each of the options.

(ii) Project objective, scope and description

(a) The objective(s) of the Project will need to be clearly articulated to demonstrate that the Project meets the broader policy goals of the Government and user needs. These shall normally include, but not limited to, the following:

- project dimensions
- project capacity
- service output

- output standards
- service area
- service population
- peak demand
- economic life of the project
- phases of development
- other relevant project specific information.

(iii) Technical feasibility assessment

(a) The objective of the technical feasibility assessment is to analyze the design and engineering options that could be applied to the PPP Project. The coverage of the technical feasibility assessment is dependent on the sector and hence, these will vary. For example, in the case of roads, railways, urban transport systems, bulk water supply systems and water distribution projects, it will be necessary to study *network alignment* options, in addition to the *design and engineering* options. Similarly, in projects to develop industrial infrastructure such as logistics complexes, special economic zones, or the development of transport projects like airports, ports, transport terminals, or the development of landfill facilities, it will be necessary to analyze various *site suitability options*.

(b) Determination of the key technical elements/components of the Project (for example, in a water supply project, the pumping station, the treatment plant, the total length of the distribution network etc.) for the purpose of determining the Project costs. All the components of the project must be clearly identified.

(c) Assessing the suitability of the site for the proposed Project which will normally include, but not limited to, the following:

- geotechnical investigations to assess suitability of land for the proposed Project
- assessment of the need for land development (e.g. levelling) and estimated costs
- need for coordination with other departments for approvals, utility shifting etc.
- assessing the connectivity of land in terms of transport connections, connections to utility networks (electricity, water, gas, etc.).

(d) *Indicative* technical studies required in PPP projects across illustrative infrastructure sectors are given in the box below for reference.

Indicative Technical Studies

1. **Roads**
    a. Alignment studies
    b. Topographic studies
    c. Traffic study including origin-destination surveys, willingness to pay survey, willingness to shift survey, junction traffic assessment etc. The traffic study would generally be carried out for a 7-day period to screen out outlying conditions
    d. Infrastructure requirement based on the alignment, topography and traffic studies is determined
2. **Solid Waste Management**
    a. Quantum of waste generation
    b. Source-wise waste generation
    c. Waste characterization (types)
    d. Assessment of calorific value
    e. Mapping of waste management system
    f. Landfill site assessment
3. **Water Supply**
    a. Base network map, setting out the assets (bulk and distribution) and their respective locations, location of any other utility lines
    b. Quality checks of the water samples
    c. Soil characteristics
    d. Hydraulic testing
    e. Unaccounted for water assessment
    f. Inventory and status of assets (sub and super-surface) including source details, length of transmission and distribution networks, type of material, water treatment plants (capacity, type and current status)
4. **Ports**
    a. Equipment Requirement Assessment
    b. Traffic studies
    c. Bathymetric & Seismic studies
    d. Sub-surface investigation surveys
    e. Geo-technical surveys
    f. Topographic surveys
    g. Wave analysis
    h. Navigational channel, turning circle survey, navigation requirement surveys

(iv) Estimation of project cost

(a) The total lifecycle project cost shall be estimated, based on a detailed breakup of the construction cost and operating and maintenance cost for the Project components identified in the technical feasibility assessment. The estimation of the Project cost will be based on costs in similar projects, inputs from suppliers and studies undertaken by the TA for defining the Project. A typical project will comprise of the cost components shown in the Table 1 below. All such components must be estimated to arrive at the estimated cost of the Project.

Table 1: Project Cost Items

Construction costs	Operating and maintenance costs
• Cost of site development • Cost of civil construction • Cost of plant and machinery • Installation costs • Costs of technical studies • Land Acquisition and Resettlement costs • Project management costs • Interest during construction • Provision for cost escalation • Provision for contingencies	• Cost of consumables (chemicals, fuel, power) • Cost of spares • Repairs and maintenance • Replacements • Salaries • Administrative costs • Communication costs

(v) Output specifications

(a) The Private Partner shall be evaluated based on performance against the contractually agreed output specifications during the operations of the Project. Defining the output specifications is critical which will normally include, but not limited to, the following:

- volume of service
- quality of service
- availability of services
- efficiency of providing services.

(b) The output specifications will also be sector specific and should meet the following considerations:

- directly attributable to the project objectives
- independently verifiable by the IA or other government agencies, as necessary
- comparable across projects
- comparable over the project lifecycle
- material to the user experience.

5.2.3. *Demand study*

(i) ***Establishing the demand forecast for the Project*****:** the demand forecast refers to the demand volume (initial volume and growth rate expectations), the willingness to pay (price) and, in the case of services to private users, the price elasticity of demand. Where relevant, the impact of the quality of the service on the volume of demand and the willingness to pay will need to be determined.

(a) Where similar projects have recently been delivered or where similar services are being offered in Cambodia, these may be used as a reference for estimation of demand and willingness to pay. The demand study will explain how demand data from the reference projects and services have been adjusted to account for the difference

between the specific conditions and characteristics of the Project and the reference projects or services.

(b) If no suitable reference projects or services can be found, then the demand forecasts will be based on the *representative user surveys* and quantitative demand models. Both the surveys and the models will be clearly documented in the demand study.

(ii) ***Developing the demand forecasts*** for all relevant alternatives and scenarios. These will include for:

(a) different Project alternatives

(b) different demand growth scenarios.

(iii) Defining the required quality of the services based on analysis of user needs.

(iv) ***Estimating and projecting alternative revenue scenarios***, including:

(a) determining the charging base (based on user pay volume, government pay on availability, a mix of both options, etc.)

(b) differentiation of tariff, as a function of quality, user category or usage volume (banding)

(c) initial tariff

(d) periodic adjustment of tariff, as a function of inflation.

5.2.4. *Market interest assessment*

(i) The likely interest from the potential bidders and lenders for the proposed PPP Project in the market will need to be assessed.

(a) Where similar (reference) projects have recently been delivered as a PPP in Cambodia or other countries, especially in the region, these may provide useful evidence of the market interest. In such instances, it may be assumed that the proposed Project is likely to attract similar types and number of bidders. The market analysis will demonstrate that differences between the reference projects and the proposed PPP Project may not have a major impact on market interest.

(b) If no suitable reference project exists, the market interest must be ascertained by conducting project-specific market consultations of prospective bidders and of financial institutions (national and international, where relevant). In the case of large projects with sufficiently large funding requirements the prospective Project needs to be attractive to foreign lenders.

(c) In the market consultations, the views of prospective investors on the feasibility and the risks of the Project, including the need for government support measures, will be determined and assessed. The views of financial institutions on their willingness to finance the Project and the extent of institutional loans likely to be granted to the Project will be assessed.

(d) The evidence collected from the market interest assessment will help demonstrate sufficiency of, or a lack of, market interest that ensures, or prevents, a competitive bidding process, based on which strategies will need to be developed to increase market interest for the Project.

5.2.5. Financial analysis

(i) The Feasibility Study will include a detailed financial model that will assess the financial feasibility of the Project. The key characteristics and use of the financial model are summarized below, and the **Guidelines on Financial Analysis** provides more detailed guidance.

(ii) A detailed financial model will include:

(a) projection of project investment and operating cash flows over the duration of the PPP Contract

(b) modelling of the financing structure, including debt (subordinate and senior debt) and equity

(c) projection of financing cash flows on the basis of the financing structure

(d) modelling of cash waterfall

(e) projection of income statement and balance sheet

(f) calculation of key financial ratios, including return to shareholders, Financial Internal Rate of Return (FIRR) and Debt Service Coverage Ratio (DSCR).

(iii) The project will be considered financially feasible if:

(a) the return to shareholders (equity and subordinated debt) is at least equal to the required rate of return

(b) the minimum DSCR exceeds the level usually used in the international market for PPPs (the TA will propose ratio based on sound international practices)

(c) the debt can be repaid on schedule

(d) the cash balance remains positive.

(iv) A sensitivity analysis will be carried out to assess the effect of (i) uncertainty about important assumptions in the calculation of expenses and revenues and (ii) project risks on the financial feasibility of the Project, including:

(a) increase of costs due to uncertainty in the cost estimates (usually around 20%)

(b) low demand scenario

(c) any important project risks that have been identified in the other parts of the Feasibility Study (e.g. delay during the project implementation due to delays in receiving licenses or approvals)

(v) The detailed financial model will be used to investigate the impact of government guarantees and government support on the financial viability of the Project.

5.2.6. Economic analysis

(i) Economic assessment or Social Cost Benefit Analysis (SCBA) is used for evaluating the costs and benefits of investment projects from the point of view of the society as a whole. A SCBA will be the basis for the assessment of the net economic benefits of the proposed Project to society, based on which the government decision whether to proceed with the implementation of the Project, and for the granting of any government support, would be taken.

(ii) The SCBA will meet the contents and quality requirements set out below.

Table 2: Requirements of a SCBA

Task	Activities
Need Assessment	As prescribed and discussed under the Pre-Feasibility Study section
Identification of Options	As prescribed and described under the Pre-Feasibility Study section, one of the options to be considered is the do-nothing option. The costs and benefits of the Project alternatives are calculated as differences compared to the 'do nothing' alternative.
Costs	1. The costs to be considered include: – cost of construction or acquisition of the assets – cost of mitigation and compensation measures – loss of present use of the land that will be occupied by the Project (land acquisition cost may be used as a proxy) – maintenance and operating cost – other costs of the Project. 2. The costs will be determined in comparison to the 'do nothing' alternative. Only costs that occur in the project alternatives but not in the 'do nothing' alternative will be included. 3. The costs will be expressed in constant price level. 4. The costs will be measured by their economic value or opportunity cost. Where appropriate, financial prices will be converted into economic price or shadow price, for e.g., unskilled labor (shadow wage factor) and imported goods that are valued at border prices (shadow exchange rate factor). 5. The cost estimates will be clearly documented and explained. The sources of cost data need to be indicated, assumptions and calculations will need to be explained. The explanation for the cost estimates may refer to the cost estimates in the technical study. Important costs for which no reliable quantitative estimates can be made (for lack of data or calculation models) will be described in qualitative terms, so that they can be taken into account by the decision-maker.
Benefits	1. The benefits of the Project alternatives will be estimated. The value of the benefits may be derived from:

	– the willingness to pay for the services delivered by the Project; or – the cost savings realized by the users of the Project compared to the 'do nothing' alternative. 2. The benefits will be expressed in constant price level. 3. The estimates of the benefits will be clearly documented and explained. The sources of data will be indicated, assumptions and calculations explained. With respect to the assumptions on the demand volume, the explanation in the cost-benefit analysis may refer to the demand study. 4. Important benefits for which no reliable quantitative estimates can be made (for lack of data or calculation models) will be described in qualitative terms, so that they can be taken into account by the decision-maker.
Assessment of economic return	1. The net present value (NPV) of the stream of costs and benefits during the lifetime of the Project will be calculated (economic net present value or ENPV). Future costs and benefits will be converted into their present value using the social discount rate. – Unless other guidelines apply, a social discount rate of 6% per annum will be used.[1] – On the basis of the NPV, the economically preferred Project alternative is determined. The preferred Project alternative is the alternative with the highest ENPV, provided that this ENPV is greater than zero (otherwise the 'do nothing' alternative is the preferred alternative). 2. If there are important costs and benefits that have not been quantified (because the required data and calculation methods are not available), then these should be taken into account, in addition to the ENPV in the judgement on the preferred alternative. 3. An alternative metric for the net economic benefits of a Project is the economic internal rate of return or EIRR. Using this metric, the economically preferred Project alternative is the alternative with the highest EIRR, provided that this EIRR exceeds the social discount rate. In almost all projects the EIRR and the ENPV result in the same ranking of project alternatives. However, for some projects the ENPV and the EIRR may yield different outcomes, in which case the ENPV criterion is used.
Sensitivity analysis	A sensitivity analysis will be carried out to assess the effect of (i) uncertainty about important assumptions in the calculation of costs and benefits and (ii) project risks on the economic feasibility of the Project, including: – increase in costs due to uncertainty of the cost estimates – low demand scenario – important project risks that have been identified in the other parts of the feasibility study (e.g. delay in project implementation due to delays in securing permits or licenses, etc.).

[1] This rate is in line with recent recommendations of the World Bank (Marianne Fay, Stephane Hallegate, Aart Kraay and Adrien Vogt-Schilb, *Discounting Costs and Benefits in Economic Analysis of World Bank* Projects, February 18, 2016). The determination of the social discount rate is grounded in welfare theory. Future benefits and costs should be valued at their marginal contribution to welfare, which will be lower the higher is growth and the richer are future project beneficiaries. The authors of the World Bank note suggest using 3% as an estimate for expected long-term growth rate in developing countries. Given reasonable parameters for the other variables in the standard Ramsey formula linking discount rates to growth rates, this yields a discount rate of 6% per annum.

5.2.7. Risk assessment

(i) Project risks will be examined in detail, based on the PPP model adopted for the Project, and the risk allocation determined accordingly. Project risks are presented in the form of a risk matrix and normally include the following elements:

(a) name of risk

(b) description of risk

(c) consequence of the risk occurring (qualitative description)

(d) estimation of the probability of occurrence (low/moderate/high)

(e) estimation of the consequences on costs or revenues (low/moderate/high)

(f) grade of risk: product of probability and consequence

(g) proposed allocation: public, private or shared

(h) proposed management and mitigation measures (for risks categorized as high)

(i) additional remarks (if any).

(ii) The information for the risk matrix will be collected from the studies and analysis carried out for the Feasibility Study, specifically the legal analysis, the technical analysis, the analysis of user demand, the environmental impact analysis and the social analysis.

(iii) The probability of occurrence of risk and financial impact when the risk occurs will need to be analyzed.

(iv) A generic risk matrix with a list of typical risks in PPP projects and their preferred allocation is given in **Appendix 2**.

5.2.8. Assessment of Government Support Measures

(i) The criteria for the consideration and approval of government support measures are set out in the **Guidelines on Government Support Measures**. The outputs of the assessment of government support measures in the Feasibility Study are used as input for the fiscal risk management given in the **Guidelines on Fiscal Management**. A summary of the approach is given hereunder.

(ii) For PPP Projects that are financially unviable, the financial model will estimate the quantum of government support required for the project to be made financially viable. Financial viability will be achieved if:

(a) in the preliminary financial analysis, the FIRR is equal to the weighted average capital cost (WACC).

(b) in the detailed financial analysis: the rate of return of shareholders is equal to the required return, and the conditions in financial covenants/ratios are satisfied. (e.g., sufficiency of DSCR for the Project).

(iii) A number of government support measures may need to be examined such as the following:

(a) Viability Gap Financing

(b) Availability Payment

(c) Guarantees

(d) Asset Contributions

(e) Investment incentives.

(iv) Prior to approving government support, other alternatives to achieve financial viability should be considered and compared first. The following illustrative measures may be considered:

(a) increasing the duration of the PPP Contract

(b) increasing the user charges

(c) reducing the scope of the PPP Contract

(d) utilizing opportunities for indirect revenues (for example - commercial utilization of a part of the Project land).

5.2.9. Environment and Social Impact Assessment

(i) The proposed Project normally have some degree of environmental impacts arising from construction and operation, which can be both positive and negative. The impacts may also include follow-on effects beyond the immediate project area, as well as beyond the people directly associated with the project (secondary impacts).

(ii) An *Environment Impact Assessment (EIA)* must be carried out during the Feasibility Study to identify the potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socio-economic and physical cultural resources in the Project's area of influence. A mitigation plan to address all the impacts must be developed to make the project environmentally feasible. The assessment will include climate change impacts and the proposed mitigation measures to make the project sustainable and green. The EIA must follow the codes, guidelines and regulations set by the Ministry of Environment.

(iii) The identification of all legal and regulatory aspects relevant for obtaining the environmental approvals in Cambodia and the analysis of the institutional arrangement will need to be caried out. Some of the questions asked will include:

(a) At what stages are environmental approval required?

(b) What agencies are involved in granting of the approvals?

(c) What is the content of the environmental assessment needed for the approvals?

(d) What is the sector-specific requirements?

(e) How long will the process take, given the size of the proposed Project?

(f) What is the estimated time to obtain full environmental licensing?

(iv) An *initial social assessment* of the proposed Project's impact on the lives of people that live and work in the proposed Project's area of influence is a very important part of the Feasibility Study. The social impact analysis (or social feasibility assessment) is important as the project should not cause severe adverse impacts on communities living in surrounding areas of the Project site from ***land acquisition and involuntary resettlement.*** The social assessment should ensure that impacts are mitigated, to the extent possible, and fully considered prior to the proposed Project moving to procurement. The estimated cost of land acquisition and resettlement will need to be determined. The following is an illustrative list of social issues, which should be addressed as a part of the social assessment.

(a) Will the proposed Project produce any population or demographic movement, such as the change in size of the communities affected by the Project?

(b) Will people be physical or economically displaced?

(c) What is the legal framework for land acquisition and involuntary resettlement?

(d) How will the affected people be compensated?

(e) Will the proposed Project significantly alter the economic structure of the local economy or generate any significant change in relative prices, such as land value? What kind of social impacts can these economic changes produce?

(f) Will there be a significant change in the general access that the communities have to natural resources, such as drinking water and energy sources?

(g) Are there effective governance mechanisms to deal with concerns and complaints by the affected communities?

(h) Will the proposed Project increase or decrease the demand for public goods or services, such as education or health?

(i) Are vulnerable groups like the indigenous groups, women and ethnic minorities impacted by the proposed Project?

(j) Will an influx of newcomers seeking opportunities associated with the proposed Project disrupt traditional social structures and create undesirable effects, such as crime, violence, disease, or conflict due to religious and ethnic rivalries?

(k) How will the long-term social impacts be addressed to ensure livelihoods of the affected people are restored?

(v) The identification of all legal and regulatory aspects relevant for obtaining the social safeguard approvals in Cambodia and the analysis of the institutional arrangement will need to be carried out. In particular, the legal framework for expropriation of land and the agencies of the Government responsible for the implementation of land acquisition and resettlement clearly identified.

5.2.10. Quantitative Value for Money analysis

(i) A Value for Money analysis is an essential part of the Feasibility Study. The procedure and detailed instructions for undertaking a Value for Money analysis is set out in the **Guidelines on Value for Money Analysis**.

5.2.11. Key commercial terms of the PPP Contract

(i) Based on the selected PPP Model and risk allocation, the key commercial principles for the PPP Contract will be developed. The key commercial terms will form the basis for developing the PPP Contract to govern the relationship between the IA and the Private Partner. The following table lists the key commercial terms that are normally essential to be defined at this stage. A more comprehensive set of terms and conditions is provided in the PPP Contract Template in the **SOP for PPP Projects, Vol. III: Procurement Manual in the Annexure 5: Sample Template of the Bidding Documents to the Section III: Selection of Private Partner**.

Table 3: Primary sections of a PPP Contract

Term	Description
Parties to the contract	Identifying the parties to the contract, including the IA and the Private Partner, and any other relevant party (for e.g. If the MEF is providing guarantees or fiscal support). In case the PPP Contract requires the Private Partner to form a Special Purpose Company (SPC) for the Project, the SPC would be a party to the contract and not the Private Partner.
Duration of the contract	The period for which the contract would be in force.

Term	Description
Responsibilities of the parties	The responsibilities of both the parties during the following phases of the PPP Contract will need to be defined in clear and precise terms: • after PPP Contract signing, but before commencement of construction • from commencement until the completion of construction • from commencement of operations • on expiry of PPP Contract/PPP Contract termination.
Rights of the Private Partner	The rights of the Private Partner in terms of access to the site, use of land, use of existing assets, making structural changes to existing assets, etc. (as relevant and applicable).
Project assets and ownership	• Who owns the existing assets? • Who owns the new assets being created? • When will the ownership of the Project assets transfer?
Payment terms	• Who will pay to whom? • How much shall be paid? • When will the payments be made? • Which account(s) should be the payments routed from?
Performance management framework	• Output standards • Framework for measuring actual performance against output standards • Consequence of actual performance falling short of output standards
Dispute management framework	• What happens when there is a dispute? • How will the dispute get resolved?
Force majeure events and consequences	• What are force majeure events for the Project? • What happens when a force majeure event occurs?
Termination and consequences	• Who can terminate the PPP Contract and why? • What happens when one of the parties terminates the PPP Contract?
Handover	Responsibilities at the time of handover of the Project assets
Jurisdictional issues	Courts that will have jurisdiction on matters related to the PPP Contract
Liabilities	Liabilities of each party, including liabilities to third parties
Protection of users' interests	Framework for protection of the rights of the users and beneficiaries of the Project- including redressal of their grievances, framework to ensure that the services are not disrupted, etc.

6. Other Studies

6.1. The Feasibility Study Tasks provided in Section 5 above represent the key studies that are normally undertaken. However, they may not present an exhaustive list of all the studies that require to be undertaken. Other studies may be required or some of the studies may not be relevant depending on the nature of the project. The TOR for the TAS will attempt to provide the comprehensive list of tasks and where any required task has been missed out, the TA, based on its experience and expert knowledge, will ensure additional studies and analysis

are carried out to ensure the Feasibility Study Report is complete in all aspects. An illustrative template of contents for the Feasibility Study Report is given in **Appendix 3**.

ANNEXES

Appendix 1: Illustrative Coverage for the Pre-Feasibility Study

(i) Needs and options analysis

(i) The needs analysis and options assessment shall:

- demonstrate the need of the Project and estimate the required level of service.
- determine alternative options that serve the demonstrated need and recommend the preferred option(s) for further assessment and/or development as PPP Project.

(ii) The need for the Project will be established by taking into consideration, but not limited to, the following aspects:

- the Project is within the IA's mandate and conforms to the policy, development strategy and sectoral plan of the Government.
- level of service currently being provided is inadequate for current and future levels of demand.
- economic, social and other benefits from the proposed Project are expected to be considerable.

(iii) The options assessment shall find the most advantageous option for delivering the required services and may include as assessment of the following options (as relevant):

- **Do nothing option**: consequences of a continuation of business as usual.
- **Non-asset option**: option to improve the service delivery that does not require investments in assets.
- **Improvement option**: option to improve the service delivery by improving existing assets.
- **New asset option**: option that involve investments in new assets to meet the identified service needs.

(iv) The identified options will be assessed based on their costs and benefits and their effectiveness in meeting the identified service need. No detailed quantitative analysis is required at this stage and the analysis can be based on comparison of the available qualitative and quantitative indicators.

(ii) Legal feasibility

(i) The legal feasibility of the proposed Project will involve addressing the following questions:

- Is the proposed Project within the legal/administrative mandate of the IA?
- Is the IA authorized to enter into commercial contracts for a PPP Project with the private sector?
- Are there any thresholds for contract value beyond which the IA is not allowed to enter into a PPP contract?
- Can the IA legally allow to the Private Sector to construct structures and operate commercial activities on government land?

- Is the IA allowed to acquire land?
- Are private sector entities permitted to invest in the sector?
- Are international investors permitted to invest in the sector?
- Are private sector entities permitted to borrow long term funds for investment in infrastructure/ land development?
- What are the legislations and regulations that the project must conform to?
- Are private sector entities permitted to collect user charges/ fees from users of a public service?
- Other relevant questions related to the legal boundaries within which a possible PPP arrangement is permitted to operate.

(iii) Technical feasibility

(i) Assessment of the technical feasibility shall include, but not limited to the following:

(a) Detailed technical scope of the project - Based on the options analysis, a specific solution for meeting the identified service need will be developed. As part of the technical feasibility assessment, the complete technical scope of the Project, including but not limited to the following, will be detailed:

- Project dimensions
- Land requirements
- Project capacity
- Quality requirements
- Broad service levels and output standards
- Applicable design and construction standards.

(b) Estimation of the lifecycle costs of the project - Estimation of total project lifecycle costs shall be undertaken within a reasonable range of accuracy. This will form the basis for the preliminary financial analysis. The following sources can be used as reference points for the purpose:

- costs of similar projects that the IA or other government agencies have undertaken
- adjusted for the physical characteristics of the proposed Project
- inputs from sector experts
- inputs from suppliers and contractors (using private sector contacts of the IA)
- Estimation of the main components of the lifecycle costs:
  - construction cost
  - land acquisition and resettlement costs
  - installation/operationalizing costs
  - operation costs including cost of consumables, fuel, power, salaries.
  - maintenance costs including cost of regular repairs, major repairs, replacements
  - replacement costs of specific components.

(c) Indicative timeline of the Project based on identified technical solution - An indicative timeline of the Project shall be established in terms of the construction period, major repair points, economic life of the project, replacement cycles, etc.

(iv) Market assessment

(i) The market assessment shall involve the sounding of domestic and/or international companies in the relevant sector to assess if there are a reasonable number of private sector entities:

- with the capacity to implement the Project
- interested in investing in the Project.

(ii) The market assessment can be undertaken with the assistance of domestic industry associations and the international networks.

(v) Scoping of social and environmental impacts

(i) The environmental and social impact analysis shall comprise of identification of possible social and environmental impacts of the Project, to determine whether the impact is likely to be significant. In addition, options for mitigating the environmental and social impacts of the Project and the costs of the mitigation plan would be identified.

(ii) The analysis of the environmental and social impacts of infrastructure projects will comply with the relevant laws and regulations in Cambodia.

(vi) Preliminary financial feasibility analysis

(i) The preliminary financial feasibility analysis will need to demonstrate the existence of a business model, with adequate financial returns for the private sector. The following steps will be undertaken to assess the preliminary financial feasibility. Further guidance on the approach of the financial analysis is provided in the **Guidelines on Financial Analysis**.

(a) Identifying sources of revenues - All possible sources of revenues that can be generated by the Project will need to be identified, including:

i. **Direct revenues**: revenues generated from the users of the facility (for example revenues from toll charges collected from the users of a highway project).

ii. **Indirect revenues**: revenues generated from indirect beneficiaries of the Project. Indirect beneficiaries are entities other than the users of the services of the Project and include businesses that benefit from the Project (for example operators of food and beverage counters in the service areas of the highway, advertisers, etc.).

iii. Based on identified revenues, projections of the total revenues of the proposed Project will be made, including direct and indirect revenues. Key inputs to be considered for projecting the revenues shall include:

- growth rate assumption for demand of the services from the proposed Project
- growth rate assumption for revenues
- expected inflation indexation
- projected increase in the rate of user charges and other tariffs.

(b) Financial feasibility assessment - The financial feasibility assessment, with estimated costs and revenues, require the development of a financial model and will analyze the following at different stages of the project development cycle.

i. Determination of required returns of the Private Partner - The minimum financial return required by a Private Partner for the proposed Project will be determined, based on its risk profile. The minimum returns required by the Private Partner will be estimated based on:

- returns in similar projects (based on the financial quote of the winning bidders in these projects)
- premium expected for a project with the risk profile of the proposed Project
- inputs received from preliminary contacts with banks, rating agencies
- Inputs received from preliminary contacts with potential investors.

ii. Estimation of expected returns based on the financial model - The financial model will calculate the expected financial return of the proposed Project, based on the estimated costs and revenues as described above. The comparison of the return predicted by the financial model with the required return of the Private Partner will indicate the financial viability of the proposed Project.

iii. Determination of required government support - Based on the shortfall of financial returns indicated by the financial model, in comparison to the minimum requirement of the Private Partner, the extent and nature of financial support required from the government for the proposed Project will be determined. Further guidance on the determination of government support is provided in the **Guidelines on Government Support Measures**.

(vii) Risk assessment and selection of PPP model

(i) The identified risks carried by the Government and the Private Partner shall be allocated to the contract party best able to manage each specific risk identified. The risk allocation shall help determine the appropriate PPP model for the proposed Project. The annex to these guidelines contains a generic risk matrix, that can be used for the identification and allocation of risks, and the choice of the PPP model.

(viii) Qualitative Value for Money analysis

(i) Value for Money (VfM) analysis shall be undertaken to ascertain whether the Project developed through a PPP modality offers good value for money to the IA and the general public.

(ii) In the Pre-Feasibility Study, a qualitative VfM analysis shall be performed, which will assess the feasibility and desirability of implementing the proposed Project as a PPP on the basis of a number of qualitative criteria. Further details and guidance on the approach to be followed for the qualitative VfM analysis is provided in the **Guidelines on Value for Money Analysis**.

Appendix 2: Generic Risk Matrix

Risk	Description	Consequence	Preferred allocation
Site risks			
Land acquisition and resettlement	The land access and use rights of the designated project site are not obtained in time and on the expected conditions.	Additional construction time and cost	Government (unless the project is to be realized on a site chosen and acquired by the Private Partner)
Ground conditions	Unanticipated adverse ground conditions are discovered	Additional construction time and cost	Private Partner (possibly only up to a specified amount, with the government assuming the costs above that amount)
Approvals	Necessary approvals are not obtained in time or only subject to unanticipated conditions	Additional construction time and cost	Government (unless the project is to be realized on a site chosen and acquired by the Private Partner, or if the delays in obtaining the approvals are due to negligence or errors by the Private Partner)
Political risks			
Discriminatory and specific change of law (incl. tax)	A change in law/policy which could not be anticipated at contract signing, which is directed specifically at the project or the services, and which has significant adverse cost or revenue consequences for the private party.	Additional capital and/or operating costs, or reduced revenues	Government (unless the costs can be passed on to end-users)
General change in law	A change in law/policy which could not be anticipated at contract signing, which is general (i.e. not project specific) in its application, and which has significant adverse cost or revenue consequences for the Private Partner.	Additional capital and/or operating costs, or reduced revenues	Private Partner (unless the Private Partner, due to the PPP Contract, cannot respond to the change in law in the same way as the average company in the rest of the economy, so that is affected significantly more than the average company in the rest of the economy)
IA's default	The IA fails to meet its payment obligations	Revenue loss	Government

Risk	Description	Consequence	Preferred allocation
Regulatory consent	The regulator revokes the operating permit. The regulator imposes conditions on pricing or on other aspects of the project or the services, which were not expected in the business plan of the Private Partner.	Additional costs or revenue loss	Private Partner (unless there has been a change in the regulations that could not be anticipated at contract signing)
Design and Construction			
Design risks	The design of the infrastructure incapable of delivering the services at anticipated cost and quality	Additional operating costs and/or inadequacy of service quality resulting in revenues losses	Private Partner
Construction risks	Events occur during construction which prevent the facility being delivered on time and on cost	Additional construction time and cost	Private Partner
Operational risks			
Input quantity, quality and price	Required inputs cost more than anticipated, are of inadequate quality or are not available in required quantities	Additional operating costs and/or inadequacy of service quality resulting in revenue losses	Private Partner
Output quantity and quality	The outputs cannot be produced in required quantities and with adequate quality.	Revenue loss	Private Partner
Interface risk	The delivery of contracted services adversely affects the delivery of core services in a manner not anticipated in the contract, or vice versa	Increased costs of contracted services and/or core services	Private Partner (unless the government has made unanticipated changes)
Revenue risks			
Tariff adjustment breach	The regulatory authority fails to approve tariff adjustments anticipated in the business plan of the Private Partner (in user-pays projects)	Revenue loss	Government

Risk	Description	Consequence	Preferred allocation
Demand risk	Demand for the service is lower than expected in the business plan of the Private Partner (in user-pays projects)	Revenue loss	Private Partner (if the demand risk is very large, the government may reduce or eliminate the revenue risk at the contracting stage through an availability-based payment scheme)
Network connectivity risk: complementary route	A complementary government network, on which the project relies, is not provided as planned.	Demand loss, resulting in revenue loss (in projects relying on payments in function of usage)	Government
Network connectivity risk: competing route	A competing network created, extended or re-priced so as to increase competition for the facility	Demand loss, resulting in revenue loss (in projects relying on payments in function of usage)	Private Partner (unless the changes to the competing network are the result of unanticipated, discriminatory acts of the government)
Sponsor and financial			
Financial risks	Debt and/or equity required by the Private Partner for the project is not available then and in the amounts and on the conditions anticipated	Delays and increased costs	Private Partner (unless the government agrees to bear the interest rate risk till financial close)
Sponsor risks	The Private Partner does not have the financial, managerial or technical capacity to provide the required services	Cessation of service to government and possible loss of investment for equity and debt providers	Government (cessation of services) and Private Partner (investment loss)
Force majeure			
Force majeure risk	A force majeure event damages the infrastructure and/or causes a temporary or permanent inability for the private party to provide the contracted services.	Loss or damage to the asset, service discontinuity for government and loss of revenue for private party	Shared - Private Partner (asset loss, revenue losses) and government (service interruption)

Appendix 3: Illustrative Contents of the FS Report

Section	Indicative content
Executive Summary	• Key Summary of the FS Report
Introduction	• Project context • Methodology used for the FS • Structure of the FS Report • Limitations for the FS
The Project	• Project rationale and needs • Key drivers and project considerations • Proposed project functional specifics and services considerations
Technical Studies	• Needs and options analysis • Project objective, scope and description • Technical feasibility • Estimation of Project cost • Output specifications • Other technical considerations
Demand Study	• Establishing the demand forecast for the Project • Developing the demand forecasts • Defining the required quality of the service based on analysis of users' needs • Estimating and projecting alternative revenues scenarios
Market Interest Assessment	• Where similar projects have recently been delivered as a PPP • Market consultations • Views of prospective investors on the feasibility and the risks of the Project • Collective evidence to increase market interest for the Project
Economic Analysis	• Conducting of the Economic assessment or Social Cost Benefit Analysis (SCBA) • Presenting the main assumptions of the economic analysis and the results of the economic analysis
Financial Analysis	• Conducting of the financial analysis • Presenting the main assumptions of the financial model and the results of the commercial feasibility assessment • Further guidance on the financial analysis can be found in the Guidelines on Financial Analysis of the SOP for PPP Projects
Risk Assessment	• Details of the Project risks • Risk Matrix of the Project • The probability of occurrence of the risk and financial impact when the risk occurred
Assessment of the Government Support Measures (GSM)	• The criteria for the consideration and approval of the support measures are set out in the Guidelines on GSM of the SOP for PPP Projects • For PPP Projects that are financially unviable, the financial model shall estimate the quantum of government support required
Environmental and Social Impact Assessments	• Conducting of the Environmental and Social Impact Assessment • The Identification of all legal and regulatory aspects relevant to obtaining the environmental approvals • An initial social assessment of the proposed Project's impact • The identification of all legal and regulatory aspects relevant to obtaining the social safeguard approvals

Section	Indicative content
VfM Analysis	• Indicating the level of accuracy obtained in the VfM estimation, and it should highlight the main drivers that add value to the project in quantitative and qualitative terms • The procedures and detailed instructions for undertaking a VfM analysis is set out in the Guidelines on VfM Analysis of the SOP for PPP Projects
Legal and Institutional Analysis	• Compliance with the relevant laws and legislations and regulations • Identification of potential legal risks and obstacles • Action plan to resolve or manage the potential risks and obstacles • Identification of licenses and approvals that are required
Principles of the PPP Contract	• Selection of PPP model for the Project • Risk allocation between the Government and the Private Partner based on the result of the FS study • Determination of benefits in the PPP Contract
The procurement strategy and Project plan	• Indicating the procurement route chosen and its main characteristics • Presenting the time schedule and the recommended aspects/next steps
Conclusions	• Key conclusions on the Project
Appendices	• Relevant data and information to support the FS Report

GUIDELINES ON FINANCIAL ANALYSIS

1. Introduction

1.1. The Guidelines on Financial Analysis provide the standard reference on the scope of the analysis and the methodology used in conducting a financial analysis of a potential PPP Project (hereafter referred to as the Project). The Implementing Agency (IA) shall be guided by these standards.

2. Objective of Financial Analysis

2.1. The objective of the financial analysis is to assess the financial viability of the Project. The financial viability refers to the Project's ability to earn sufficient revenues, whereby:

- the internal rate of return (IRR) of the Project equals or exceeds the cost of capital
- debts and interest relating to the debts can be repaid on time
- debt covenants and security package demanded by the lenders are satisfied.

3. Purpose of the Financial Analysis

3.1. The financial analysis is normally carried out by a specialized financial expert who is a member of the team of the Transaction Advisor (TA). In some cases, the expert can be an individual or from a separate consulting firm from the TA. The financial analysis is required for both a solicited as well as an unsolicited PPP Project. The main purpose of the financial analysis are as follows:

- In the case of a *user pays/revenue-based PPP project*, the financial analysis will enable forecasting the amount of tariff that will have to be collected from the users of the Project services (e.g., the users of a toll road), for the Project to be financially viable. In this case, the fees are paid by the users of the services provided by the PPP Project. The user tariff required to make the Project viable will also be assessed in the context of its *affordability to pay* by the users (especially for low-income groups). If the tariff that is required for financial viability is too high (i.e. it is considered to be unaffordable for some social groups, or will result in low volume of demand), then the Project may need to be implemented with some government support measures to make it financially viable. The financial analysis will determine if and to what the extent government support measures may be required to make the Project financially viable.
- In the case of an *availability-based PPP projects* (government pays for the public services) the financial analysis of the Project will forecast the *amount of the bid* and the *amount of the availability/service fee* that will need to be specified in the draft PPP Contract. This fee amount will be quoted by bidders izn their bids (with some variation,

depending on each bidder's specific costs) and the fee quoted by the winning bidder will be prescribed in the PPP Contract.

- The financial analysis serves as a benchmark (a "shadow bid") for the bids submitted by the bidders. If the bid price forecasted by the financial model deviates strongly from the prices in the submitted bids, the reasons for the differences must be identified and investigated and addressed during the negotiation stage to find an optimal solution.

3.2. In the case of an *unsolicited proposal (USP),* the financial analysis is undertaken by the Proponent/Private Sponsor. However, the IA/GDPPP will need to conduct its own independent financial analysis of the unsolicited proposal for a deeper understanding of the proposal and for negotiating a balanced deal. The availability fee or user tariff calculated by the financial analyst or firm and as agreed by the IA and the MEF will serve as a benchmark for negotiating with the Proponent/Private Sponsor.

4. Source of Data and Types of Financial Analysis

4.1. The financial analysis is an integral part of the Feasibility Study and is based on the inputs collected from the other areas of studies/analysis during the Feasibility Study, specifically from the:

- technical studies: relating to capital and operating/maintenance expenditures
- land acquisition and resettlement plan: relating to cost of land acquisition and resettlement
- demand analysis: relating to demand volume, tariffs and revenues
- risk assessment: relating to cost overruns, delays and revenue shortfalls
- environmental analysis: relating to cost of mitigation and preventive measures.

4.2. The primary inputs for the financial analysis will come from the technical study (costs) and the demand study (demand volume, tariff and revenues). Inputs for the cost estimates of environmental management measures, land acquisition and resettlement will be prepared as part the environmental and social impact assessment which will be taken into account in establishing the total cost estimate.

4.3. The risk analysis will provide inputs on the risks regarding the costs and revenues. For the financial feasibility assessment, the downward risks that could occur and assessing pessimistic scenarios are important. The risk analysis will draw on the technical, demand and environmental and social impact assessment for data on the probability and impact of Project risks (cost risks, demand risks, delays in obtaining of environmental license, land acquisition, etc.).

4.4. Two types of financial analysis are required to be carried out:

- a preliminary financial analysis
- a detailed financial analysis.

4.5. The preliminary analysis focuses on the real Project cash flows (i.e. capital expenditures, operating/maintenance expenditures and revenues) and determine the overall Project return. The objective of the preliminary financial analysis is to assess whether the Project can generate a sufficiently high overall return to cover the costs of capital (equity and debt). The preliminary financial analysis is undertaken during the Pre-Feasibility Study stage to verify the potential financial viability of the Project. Where a Pre-Feasibility Study is not carried out, the preliminary analysis will be undertaken at the initial stage of the Feasibility Study prior to undertaking a detailed financial analysis.

4.6. If, based on the findings of the preliminary financial analysis, the IA decides to proceed with the preparation of the Project, a detailed financial analysis will be conducted. In the detailed financial analysis, the financing cash flows (i.e. the drawdown, redemption and remuneration of equity and various types of debt, reserve accounts) will be evaluated, in addition to the real Project cash flows. The detailed financial analysis will produce a more comprehensive assessment of the financial viability of the Project and is used to optimize the financial structure of the Project. The detailed financial analysis will yield a more reliable shadow bid price to serve as a benchmark for the submitted bids.

5. Preliminary Financial Analysis

5.1. The purpose of a preliminary financial analysis will be to gain a quick insight into the financial feasibility of the Project. The analysis will include assessment of:

- alternative scope or phasing of the Project
- demand scenarios as a function of expected economic growth
- whether required and extent of government support measures
- impact of risk events, resulting in higher investment costs and delays.

6. Undertaking the Preliminary Financial Analysis

6.1. The preliminary financial analysis is based on the cash flows from investing and from operations. A cash flow statement is prepared which is divided into three components:

- **cash flow from investing**: cash spent on the construction or acquisition of property, infrastructure, superstructure and equipment that is needed to implement the PPP Project.

- **cash flow from operations**: cash flow deriving from the operations of the PPP Project, consisting of revenues from the sale of services, maintenance and operating costs and taxes.
- **cash flow from financing**: cash flow from the raising of capital (equity injections and loan drawdowns), the repayment of capital (loan repayments, equity redemption) and the remuneration of capital providers (dividends, interest, bank fees).

6.2. The cash flow components from investing and operations are included in the preliminary financial analysis but the cash flows from financing are not taken into account. The cash flows from investing and operations on the one side, and the cash flow from financing on the other side mirror each other. The financing cash flow is needed to cover the *funding gaps* in the cash flows from investing and operations. The surpluses from the cash flows from investing and operations are distributed to the investors in the form of repayments, interest, and dividends. In the preliminary financial analysis, the financing conditions (interest rate and required rate of return on equity) are included in the weighted average cost of capital (WACC) formula.

7. Project Cash Flows

7.1. The Project cash flows consist of the cash flow from investing (capital expenditures) and the cash flow from operations (revenues, maintenance and operating expenditures and corporate tax)[2]. In determining the Project cash flows, the following must be kept in mind:

(i) Only the expenses incurred, and revenues earned by the Private Partner are included in the financial analysis.

(ii) The expenses and revenues are expressed in nominal terms, i.e. inclusive of expected price increases due to inflation.

(iii) The forecasts of the expenses and revenues are obtained from other parts of the Feasibility Study. The forecasts will need to be clearly documented and explained so that the reliability and robustness of the financial analysis can be assessed. In particular:

a. the sources of data are indicated, assumptions are clear, and calculations are explained.

b. the documentation of the forecasts may refer to the cost estimates in the technical studies and to the demand forecasts in the analysis of user demand.

c. assumptions on macro-economic variables (exchange rates, inflation) will be, to the extent possible, based on data and

[2] Any other business taxes (special excise taxes on particular goods, local taxes on business activities, land taxes) must be included in the capital or operating expenditures. This also applies for the non-recoverable part of VAT.

forecasts of authoritative institutions in Cambodia (central bank, national statistical institute, etc.).

8. Corporate Tax

8.1. The estimate of the taxes that will be payable by the Private Partner is calculated on the basis of a simple profit and loss statement. Profit before tax equals revenues less cash costs (maintenance and operating expenditures) and less non-cash costs (depreciation). For example, the depreciation amount for an operational period of 15 years is obtained by taking 1/15th of the value of capital expenditures. The amount of corporate tax is determined by multiplying the profit before tax by the corporate income tax rate.

8.2. The impact of interest charges on profit before tax and on corporate tax is ignored in the calculation of corporate tax. The corporate tax amount is determined as if the special purpose company will be established and there are no interest charges. The impact of leverage on the return of the Project is taken into account through the WACC formula which is discussed below.

9. Weighted Average Cost of Capital

9.1. The project financial internal rate of return (FIRR) is a metric of the financial return of the Project. The internal rate of return is equal to the discount rate that makes the net present value (NPV) of all cash flows from the Project equal to zero. The FIRR is calculated by solving the following equation:[3]

$$\sum_{t=1}^{T} \frac{PCF_t}{(1+FIRR)^t} = 0$$

in which:

t	=	year
T	=	end year
PCF_t	=	project cash flow in year t

9.2. To establish whether the Project is financially feasible, the FIRR will be compared to the WACC. The Project is potentially financially feasible if the FIRR exceeds the WACC.[4] As the term indicates, the WACC is the average cost of the sources of financing, debt, and equity.[5] The WACC is determined with the following formula:

$$WACC = S_E \times R_E + S_D \times R_D \times (1 - T_C),$$

[3] This calculation is performed by the Excel IRR-function.

[4] The term "potentially" is included in this sentence, because the preliminary financial analysis focuses only on one aspect of financial feasibility: the project return. In the detailed financial analysis other dimensions of financial feasibility are also taken into consideration. But the return is arguably the most important factor of financial feasibility and therefore sufficient for a preliminary analysis.

[5] As a refinement more sources could be distinguished, for instance subordinated debt or various types of senior debt. In that case the same formula to calculate the WACC applies, only with more terms.

in which:

S_E	=	share of equity in the financing of the project
RE	=	required return on equity
SD	=	share of debt in the financing of the project = 1 – SE
RD	=	required return on debt (i.e. interest rate)
T_C	=	corporate tax rate

9.3. The assumptions with respect to the parameters in the WACC formula must be clearly documented and based on published market data, findings from market consultations, or parameters from recent projects with similar risk characteristics. An alternative way is to express this by calculating the *project financial net present value* (FNPV). The FNPV is calculated by the following formula:

$$FNPV = \sum_{t=1}^{T} \frac{PCF_t}{(1+WACC)^t}$$

9.4. The project is financially feasible if the FNPV is positive. In particular:

- if FIRR > WACC, then FNPV > 0 and the project is (potentially) financially feasible; and
- if FIRR < WACC, then FNPV < 0 and the project is (likely) not financially feasible.[6]

10. Using the Preliminary Financial Analysis

10.1. The results of preliminary financial analysis will be used to determine the conditions under which the Project is (potentially) financially feasible, as explained below:

(a) The break-even availability fee or user tariff need to be determined:

- In the case of a *user pays/revenue-based* Project, raising the user tariff may not be sufficient to increase revenues. The negative impact of the higher user tariff on the demand volume must also be taken into account (e.g. suppose the demand study has established that the price elasticity of demand equals –0.5. This means that for every 1% price increase, demand falls by 0.5%). The government must decide whether the Project is still worth doing if the number of users is reduced and the services are only affordable for higher income groups who can pay the higher price.[7]

[6] FIRR and FNPV are therefore equivalent measures of the project return. In some relatively rare cases, the FIRR equation has no or multiple solutions and the equivalence between FIRR and FNPV breaks down. In those cases, the FNPV must be used.

[7] The government should also check whether an increase of tariffs is feasible. A price elasticity estimate is only reliable for limited price changes above or under the base tariff level used in the demand study. If the price is pushed ever higher, at some point most potential users may drop out and demand is likely to fall steeply.

- In the case of *an availability-based* PPP Project, the Availability Payment must simply be increased for profitability. The government must then decide whether, at this higher price, the Project is still affordable.

(b) Alternatively, the financial analysis can determine the level of government support measures that will be required to achieve financial feasibility at the proposed user tariffs. The government must then assess whether this public subsidy is justified by the social and economic benefits of the Project.

(c) A preliminary financial analysis can be used to determine if the Project can be made financially feasible through a different project configuration (e.g., a scaled-back project, use of a less expensive technology or implementation in a phased manner, etc.).

(d) The preliminary analysis is used to assess the robustness of the financial feasibility of the Project by making changes to uncertain assumptions or risks. A preliminary financial analysis should include a *sensitivity analysis* to assess the impact on the financial return due to (i) uncertainty of important assumptions in the calculation of expenses and revenues and (ii) project risks on the financial feasibility of the Project. The usual sensitivity tests include:

- increase in costs due to the uncertainty margin of the cost estimates (usually around 20%)
- low demand scenario
- key Project risks identified in the other parts of the feasibility study (e.g., delay of the project implementation due to license delays, higher than expected land acquisition costs, etc.).

10.2. If the preliminary financial analysis shows that the expected return on the Project is negative, the Government will need to consider the following:

- proceed with the Project to the Feasibility Study stage, but with the understanding that government support may be required
- revise the Project (scope, scale, revenue sources, etc.) in order to increase revenues or decrease costs
- abandon further development of the Project if none of the two preceding options are feasible.

11. Detailed Financial Analysis

11.1. The objective of a detailed financial analysis is to determine a *precise estimate* of the financial return on the Project, including assessment of other dimensions

of financial feasibility. It will establish whether the project can be implemented as a PPP, estimate the availability fee or user tariff likely to be demanded by the winning bidder, and the level of government support measures, if any, needed in order to make the Project financially viable. The detailed financial analysis yields detailed and more precise answers for these variables to enable an informed decision by the Government.

11.2. A detailed financial analysis extends the preliminary financial analysis in the following ways.

(i) All cash flows will be modelled in a detailed financial analysis, including the cash flow from *investing, operations, and financing*. As a result, the financing structure can be simulated and optimized with different types of debt instruments with varying costs modelled in a detailed manner. While in the WACC, only *interest charges* are taken into account, in the modelling of financing cash flows, *all types of financing costs* are included such as arrangement fees, commitment fees and bank agency fees. In addition to interest rates and fees, other financing conditions affecting the return to equity investors will be included in the analysis, in particular the obligation to establish a *debt service reserve account* and a *maintenance reserve account*, and restrictions on the *distribution of dividends* to shareholders (dividend lock-up), and other similar conditions.

(ii) A detailed financial analysis will yield a complete set of financial statements, including:

- a cash flow statement, containing a full cash-flow waterfall from revenue streams to distributions to equity holders
- a profit & loss statement
- a balance sheet.

(iii) A detailed financial analysis will also come up with a broader set of financial feasibility ratios, which are normally used by equity investors and lenders to decide on the financing of the Project:

- the return on equity
- the debt service coverage ratio (DSCR)
- the loan life coverage ratio (LLCR)
- the gearing ratio.

(iv) The financial models may have a timeline with high frequency during the development and construction period (monthly) and a timeline with lower frequency during the operational period (quarterly, semi-annual or annual). The timeline must be adapted to the schedules of the financial

flows. If loans are drawn on a monthly basis, then the financial model would have a monthly frequency during the construction period.

12. Detailed Financial Model, Financial Statements and Financial Ratios

12.1. **Appendix 1** provides the information of the following for guidance purposes:

- modules of a detailed financial model
- structure of financial statements - cash flow waterfall, profit and loss statement and balance sheet
- definition of the financial ratios that are commonly used to assess the financial feasibility of a PPP Project.

13. Using the Detailed Financial Analysis

13.1. The detailed financial analysis addresses all aspects of the financial feasibility to determine if the Project is financially feasible, subject to the fulfilment of the following minimum parameters:

- the return to shareholders (equity and subordinated debt) is at least equal to the required rate of return
- the minimum DSCR exceeds the level prescribed in the loan covenants[8]
- the gearing ratio does not exceed the maximum prescribed in the loan covenants
- the loans can be repaid in time
- the cash balance remains positive.

13.2. Where the detailed financial analysis show that the Project is not financially feasible, alternative solutions may be explored, including:

- increasing the user tariff
- reducing the scope of the Project
- implementing the Project in phases
- extending the PPP Contract period to enable the Private Partner to recover the investment costs
- providing government support measures including fiscal support.

[8] A loan covenant is a condition in the financing agreement that requires the borrower (in this case the SPC) to fulfill certain conditions, or which forbids the borrower from undertaking certain actions unless other conditions are met. One of the conditions usually imposed concerns the minimum level of the DSCR.

13.3. The financial model enables the use of the measures mentioned in Paragraph 13.2 to the extent necessary to achieve financial feasibility of the Project. Other aspects that may be considered in the financial model are as follows:

(i) **Implication of performance deductions** – to ensure that the *penalty and performance deductions* of the Private Partner for not meeting its contractual obligations are *sufficient but not excessive*, the financial model is used to assess the impact of *plausible scenarios of performance shortcomings* of the Private Partner. The penalties and performance deductions are intended to provide a strong signal that non-performance will lead to financial pain. In general, the performance deductions reduce the return to shareholders, but should not affect the debt service obligations, unless in case of severe shortcomings of the Private Partner.

(ii) **Estimating termination payments** - the PPP Contract will specify the compensation payments in case of early termination of the PPP Contract (i.e., a termination prior to the contractually defined end date of the PPP Contract). The amount of compensation will depend on the cause of the early termination. Termination could be as a result of (i) IA default or voluntary termination by IA, (ii) Private Partner (i.e., SPC) default and (iii) force majeure. The financial model is used to:

- estimate the expected termination payment, in specific termination scenarios (by applying the compensation formulas proposed in the PPP Contract) and
- assess the financial impact of the termination on the Private Partner.

(iii) **Need for financial support from the Government** - the financial analysis will determine the extent of the need for government support measures. The financial model will calculate the shortfall of revenues to achieve financial feasibility. This shortfall will be the value of government support measures that will be required. The financial model will simulate the impact of government support measures that are proposed. Through this, the effectiveness of the proposed measures to achieve financial feasibility of the PPP Project will be assessed. The procedures for the assessment and approval of government support measures are given in the **Guidelines on Government Support Measures**.

(iv) **Fiscal commitments** – where fiscal support is required, the financial model will forecast the following cash flow items which must be funded from, or accrue to, the budget of the Government. The fiscal commitments relate to direct fiscal commitments and contingent liabilities. For contingent liabilities, the financial model will estimate the fiscal expense that will occur in the case of particular risk or termination events. To obtain an estimate of the expected fiscal

expense, this information must be combined with the estimates of probability that the risk or termination event under consideration will occur. While the general types of fiscal commitments are illustrated below, the procedures for fiscal management are given in the **Guidelines on Fiscal Management**:

- Direct Commitments:
  - availability fee paid by the IA
  - capital grants (upfront grants to defray part of the capital expenditures as part of Viability Gap Financing)
  - grants in kind (for instance grant of land use rights to build the Project, valued at market price)
  - operating grants (fixed annual subsidy, ad valorem subsidy, or specific subsidy per unit of output as part of Viability Gap Financing)
  - fees paid by the SPC to IA under the PPP Contract (upfront, fixed per annum, ad valorem or per unit)
  - tax deductions.
- Contingent Liabilities:
  - compensation in case of risk events
  - pay-out under loan guarantees (if relevant)
  - early termination payments.

14. Sensitivity Analysis

14.1. Sensitivity analyses are undertaken to conduct stress test on the financial model to simulate worst case scenarios due to risks that may impact the Project cash flows. Lenders are especially concerned about downward risks, i.e. risks that increase costs or decrease revenues that could impact on the ability of the Private Partner to service the debt. Stress tests will need to be carried out by means of sensitivity analyses with the financial model for the following scenario:

- upper value of cost estimates (capital expenditures, operating expenditures and maintenance expenditures)
- pessimistic demand forecast (low economic growth scenario, low uptake of services)
- enhanced Project risks identified in the other parts of the feasibility study (e.g., delay of the Project implementation due to securing license or delays in land acquisition).

14.2. The lender will require the financial ratios to exceed minimum levels specified in the loan covenants, even under the most adverse conditions. As a minimum, it must be possible to pay the interest on senior debt and repay the principal over the lifetime of the Project. The risk allocation in the PPP Contract may need to be changed if certain risk events increase the probability of the Private Partner becoming financially unviable.

Appendix 1: Financial Model, Financial Statements and Financial Ratios

Financial model

For model clarity, the modules must be placed in separate tab sheets of an Excel file.

Inputs	All input parameters, divided into sections: project dates, capital expenditures, operating expenditures, revenues, financing, taxes, etc.
Time and escalation	Time schedules (model period, construction period, operating period) and price indices
Capital expenditures	Development and construction costs phased in time on accrual basis
Operating expenditures	Maintenance and operating costs, phased in time on accrual basis
Revenues	Revenue streams, phased in time on accrual basis
Funding	Allocation of the developing and construction costs to equity and the various types of debt (equity, equity bridge loan, subordinated debt, concessional loans, bank loans, etc.). Every form of financing with different conditions (interest, fees, etc.) must be modelled separately
Financing	Modelling of cash flow related to the debt service: interests, fees, repayment of debt
Reserve accounts	Establishment and mutations of debt service reserve account (DSRA) and maintenance reserve accounts (MRA)
Working capital	Modelling of payment delays of costs and revenues, resulting in accounts receivable and payable balances
Accounting and tax	Modelling of accounting items, in particular: • creation and depreciation/amortization of assets • profits and corporate tax • dividends • value added tax. The accounting items must be modelled according to national accounting standards and tax rules. Where national accounting standards are not available, international accounting standard must be followed (IAS and IFRS).
Financial statements	In this module the results from the preceding modules are brought together in three financial statements: • cash flow waterfall • profit & loss statement • balance sheet.
Ratios	Calculation of financial ratios (project internal rate of return, equity internal rate of return, DSCR, LLCR, PLCR, gearing ratio, etc.)

Financial statements

Cash flow waterfall

Revenues (+)
Operating expenditures (–)
Corporate tax (–)
Operating cash flow
Capital expenditures (–)
Cash flow before funding
Equity injections (+)
Debt drawdowns (+)
Cash flow after funding
Mutations of maintenance reserve account (MRA) (withdrawals + ; deposits –)
Cash flow available for debt service (CFADS)
Senior debt service: interests and fees, repayment of principal (–)
Mutations of debt service reserve account (DSRA) (withdrawals + ; deposits –)
Cash flow available for shareholders
Sub debt interests and repayment (–)
Distributions to equity: dividends and equity redemption (–)
Net cash flow

Profit & loss statement

Revenues (+)
Operating expenditures (–)
EBITDA (earnings before interests, taxes, depreciation and amortization)
Depreciation and amortization (–)
EBIT (earnings before interests and taxes)
Interests on senior debt and sub-debt (–)
Interest income on cash balances (+)
PBT (profits before taxes)
Corporate income tax (–)
PAT (profit after tax)
Addition to legal reserves (–)
Profits available for dividends
Dividend payments (–)
Retained earnings

Balance sheet

Work in Progress (WIP)	Equity capital
Fixed assets	Legal reserve balance
Financial assets	Retained earnings balance
Accounts receivable	Subordinated debt
VAT receivable	Equity Bridge Facility
MRA and DSRA	Senior debt
Cash balance	Accounts payable
Total assets	**Total liabilities**

Financial ratios

Equity internal rate of return (EIRR)	The equity IRR (EIRR) is found by using the following formula:[9] $$\sum_{t=1}^{T} \frac{CFE_t}{(1+EIRR)^t} = 0$$ in which: CFE_t = cash flow to equity (equity injection, equity repayment, dividends, sub-debt investment, sub-debt repayment, sub-debt interests) in period t. The return to shareholders is the sum of the return to pure equity and the return on investments in the form of subordinated debt (which is often fiscally more advantageous). The shareholders have requirements with respect to the return on their total investment. Therefore, the CFE term in the EIRR formula also includes sub-debt.
Debt service coverage ratio (DSCR)	$$DSCR_t = \frac{CFADS_t}{DS_t}$$ in which: $CFADS_t$ = cash flow available for debt service in period t (see definition in the Financial statement) DS_t = debt service in period t (interests and repayment of principal).
Loan life coverage ratio (LLCR)	$$LLCR_t = \frac{\text{present value of CFADS from period t onwards}}{\text{outstanding debt balance at beginning of period t}}$$ The present value of the CFADS is computed using the interest rate on the debt, with the formula: $$PV(CFADS)_t = \sum_{j=t}^{T} \frac{CFADS_j}{(1 + r_j)^{j-t}}$$ in which: r_j = effective interest rate in period j (interest charge in period j divided by outstanding debt balance at beginning of period j.

[9] In practice by using the IRR or XIRR function in Excel.

Gearing ratio	$\text{Gearing}_t = \frac{\text{outstanding debt at end of period t}}{\text{sum of outstanding equity and debt at end of period t}}$ The outstanding equity is the sum of all shareholder investments, i.e. the sum of pure equity, equity bridge loan, subordinated debt, legal reserves and retained earnings balance.

GUIDELINES ON
VALUE FOR MONEY ANALYSIS

1. Introduction

1.1. A Value for Money (VfM) assessment is commonly used as a decision-making tool to determine whether the use of a PPP modality for the delivery of an infrastructure and services would provide better value (in terms of public and financial benefits) when compared to the traditional public delivery method or known as the public procurement method.

1.2. Under the Law on PPPs a project must be capable to allocate risks between the State and Private Partner to ensure benefits based on the principal of VfM before it could be considered for eligibility as a PPP Project.

1.3. The **Guidelines on Value for Money Analysis** provide an explanation of the concept of VfM and the methodology for undertaking VfM analysis.

2. Concept of Value for Money (VfM)

2.1. VfM seeks to capture the relationship between *cost* and *value*. The cost usually represents all the costs incurred over *the lifetime of the project* to deliver the associated value, including the costs of managing the associated risks, the value on the other hand comprises of *the quality and quantity of services* or *performance level* over the same period.

2.2. A project represents VfM when the *whole-of-life costs* of the project procured through a PPP modality provides *higher net economic benefits* to the community, compared to a traditional public sector procurement option. The VfM analysis indicates if a project would be more efficiently implemented under a PPP procurement option or under a public procurement option, from the perspective of the procuring authority and considering the best interests of the community.

2.3. A PPP may provide VfM compared to traditional public procurement model if the advantages of risk transfer combined with private sector incentives, experience and innovation (in terms of improved service delivery or efficiencies over the project life-cycle period) outweigh the increased costs of contracting and financing.

2.4. The following factors are taken into consideration when undertaking the VfM assessment and analysis to determine if the project should be procured through the PPP modality:

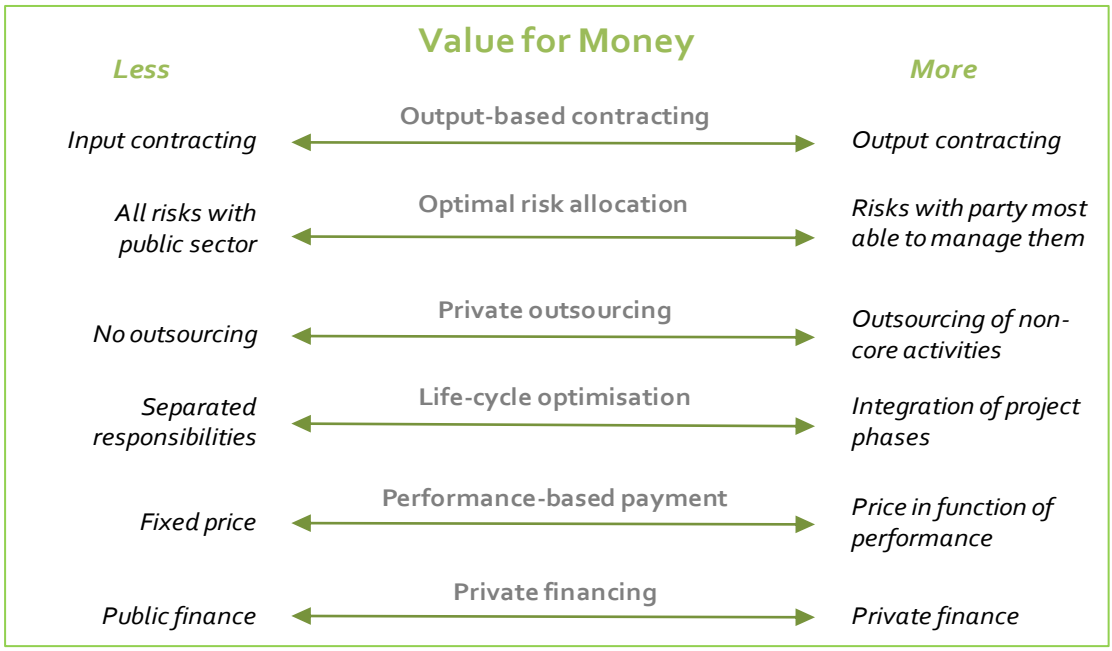
- **Cost efficiency** - Through a better risk allocation, whole-of-life cost and stronger incentives to perform, the PPP option should be able to contribute to increasing *cost efficiency* of delivery of the project.
- **Enhanced quality of services delivered** – A better integration of services with supporting assets, improved economies of scale and scope, introduction of innovation in service delivery, a higher responsiveness of the private sector to users' needs, etc. should contribute to enhanced *quality of service* provision. The incentive and

disincentives incorporated in the PPP Contract should help achieving these goals, since it is an important reason for the private sector to perform well.

- **Timely implementation** - The use of the PPP modality should enable the *implementation capacity* of the Private Partner through the timely mobilization of human and financial resources, which are the issues often faced by Implementing Agencies (IA).
- **Enhanced commercial value of public sector assets** – The private sector participation should enable unlocking of commercial value of public sector assets to its *full commercial potential* of the project thereby optimizing the project's use for the government and end-user, and in generating additional revenues that can be used to provide additional public services.

2.5. VfM is achieved from several factors (referred as *drivers*) as a result of 'less' of government involvement in key aspects of the project and shifting of 'more' responsibility and accountability to the Private Partner. These factors are provided in **Figure 1** and how they contribute to achieving the VfM are discussed below:

Figure 1: Value for Money drivers



(i) Output-based contracting

The use of performance-oriented (or outcome-based) specifications is an important lever for creating value in PPP Contracts. In traditional procurement contracts, the technical specifications as well as the engineering and design are defined by the IA for delivery by the contractor. In a PPP Project, the Private Partner is provided output requirements in terms of the services required (with minimum performance standards) and

the “how to deliver the good or service” is left to the Private Partner. This allows the Private Partner to deploy unique technical skills and creative methods that offer *better value for money* than what may have been possible under a public procurement option. Performance-oriented specifications enable the IA to harness the innovative and creative capabilities of the Private Partner, resulting in the delivery of public services at a lower cost to the user with better quality outputs.

(ii) Optimal risk allocation

The principle of *optimal risk allocation* requires that a risk should be held by the party best able to manage it. In a construction contract, the contractor has the strongest control over the management of construction risks to ensure delivery on time and within budget. Therefore, the contractor should assume the construction risk and be liable for a financial penalty in case delivery is late or over budget. Optimal risk allocation ensures that the parties to the PPP Contract have maximum incentives to control risks (i.e., to reduce the likelihood and/or the consequences of risks), resulting in lower project costs. In the traditional public procurement model, most of the project risks are in the hands of the IA. In PPP Projects, most risks (in particular, design and construction risks, operating risks and, in revenue-generating PPP Projects, also revenue risks) are transferred to the Private Partner. In light of this, the PPP Project achieves a risk allocation that is more optimal than in the case of traditional public procurement.

(iii) Private outsourcing

The PPP procurement enables the IA to mobilize human and technical resources of the Private Partner to complement the resources of the public sector. This creates various benefits, including:

- access to skills and expertise of the Private Partner that may not be available with the IA
- reduction in cost for the government and/or the end-user due to enhanced efficiency in project implementation
- freeing up of financial and human resources of IA to pursue other priority projects, and thereby, speeding up project implementation
- better collection of revenues as the Private Partner is strongly incentivized to pursue and collect revenues to meet financial obligations under the PPP Contract.

(iv) Lifecycle optimization

Integrating the design, construction and operating stages of the project reduces interface problems. A Private Partner responsible for all stages of

the project life cycle has an incentive to minimize life-cycle costs. As the project stages are bundled in a single PPP Contract, the Private Partner will suffer the consequences during the maintenance phase for any compromises on quality or cost minimization. The Private Partner in the PPP project will therefore have an incentive to *balance quality and costs* across the entire lifecycle of the project.

(v) Performance-based payments

The Private Partner will be paid upon delivery of the project assets as per agreed condition and provision of services according to the agreed quality standards. Since payments are performance-based, the Private Partner will be strongly incentivized to complete the facilities in time and deliver the services according to the contractually specified output specifications and quality standards. The PPP Contract will thus ensure timely delivery and consistent quality of delivery by the Private Partner.

(vi) Private financing

Private financing mobilizes *additional financial resources* to complement public resources, thus accelerating project implementation. It pushes the Private Partner to deliver on time and according to specifications, as every delay will increase the financial cost of the PPP Project because the revenues needed to service the debt are postponed. It brings additional project monitoring capacity as *the equity investors and lenders* have strong incentives and are often better placed to monitor the operational and financial performance of the project than the IA. If the lenders detect shortcomings in performance, they will request the Private Partner to take remedial actions in order not to endanger the debt service payments.

2.6. VfM analysis must be undertaken during the following stages of the PPP Project cycle:

- **Pre-Feasibility Study stage** - this assessment will take the form of a *qualitative* VfM assessment. The qualitative VfM assessment will examine if enough drivers of VfM are present in the project to justify consideration of a PPP model of implementation, based on which a decision to proceed to Feasibility Study stage may be taken.
- **Feasibility Study stage** - this assessment will take the form of a detailed *quantitative* VfM assessment. The quantitative assessment estimates the positive VfM that the Government will derive from implementing the project on a PPP modality, rather than on a traditional public funded/procurement basis. The findings of the quantitative VfM analysis are part of the project appraisal process and will form the basis on which the Government will approve the Project.
- **Contract negotiation stage** – the results of the quantitative assessment also provide a basis for the evaluation of the bid received for the project and will facilitate negotiations with the preferred bidder.

3. Qualitative Value for Money (VfM) Analysis

3.1. The qualitative VfM analysis is undertaken to:

(i) determine if sufficient VfM elements are present in the Project to justify consideration of a PPP mode of procurement for the Project

(ii) justify further cost and time for a Feasibility Study

(iii) guide the selection of the PPP contracting model during the Feasibility Study to select the preferred PPP model for implementation of the Project.

3.2. The following table provides an overview of the roles and responsibilities of the relevant stakeholders involved in the qualitative VfM analysis:

Table 1: Responsibilities in qualitative VfM analysis

Institution	Responsibility
TA	The qualitative VfM analysis is prepared by the TA on behalf of the IA or carried out by the IA.
IA	The IA evaluates the VfM carried out by the TA, where applicable and determines whether to proceed to a full Feasibility Study.
GDPPP	Based on the IA's determination, the GDPPP will review the qualitative VfM analysis performed by the TA or the IA, and communicate its findings to the IA.

3.3. The qualitative VfM analysis requires the following inputs related to the PPP Project:

(i) Project scope in terms of facilities to be developed and the services to be delivered, including the potential volume of the service to be delivered

(ii) Estimated lifecycle costs, including the capital expenditure, operating and maintenance expenditure, replacement costs, financing costs and other estimated costs that would be spent on development of the project facilities and delivery of services

(iii) Identification of project risks and their broad allocation between the two parties to the contract

(iv) Preliminary understanding of the market in terms of the availability of required technical skills and expertise in the private sector, private sector capacity to arrange the financial resources needed for the project, private sector capacity to manage project risks, etc.

3.4. The parameters for qualitative VfM analysis are based on the drivers of value in PPP Contracts, including:

- **Scale of Project:** The transaction costs of PPP Projects, including the cost of project development and competitive tendering is substantially high. Therefore, unless the Project is of a minimum threshold value and size, the possibility of achieving a positive VfM for the IA is low.

- **Bundling of services:** The Project structure should allow for capital investment in the public facilities bundled together with operations of facilities and provision of services over the contract period to maximize VfM outcomes.

- **Possibility of whole-of-life costing:** The VfM estimation is based on predictable lifecycle costs of project delivery by the Private Partner in comparison to the IA implementing it under a traditional public procurement model. Therefore, it is essential that the lifecycle costs should be predictable over the tenure of the PPP Contract to enable assessment of VfM with a fair degree of certainty.

- **Risk allocation:** There should be an opportunity for the IA to allocate substantial risks, e.g., demand risk or performance risk to the private sector, to justify a positive VfM for the IA.

- **Output standards:** The IA should be able to define the specific output standards that it expects the Private Partner to deliver, on which the revenue of the Private Partner is dependent.

- **Scope to innovate:** Given the output standards, and compliance with regulations, the Private Partner should be allowed to select the technology/design/solution and plan the operations independently. This will enable the Private Partner to innovate, the benefits of which will result in efficiencies to generate positive VfM.

3.5. A template for qualitative VfM analysis is provided in **Appendix 1**. Qualitative assessment is based on the expertise and judgment of the TA (or the IA) in regard to the advantages and disadvantages of a PPP procurement in comparison to a traditional public procurement. As every PPP Project has unique characteristics, it is not possible to determine in advance the relative weight and scores of the factors outlined in the template. These would need to be assessed by the TA on a project-to-project basis.

4. Quantitative Value for Money (VfM) Analysis

4.1. Quantitative VfM analysis compares the *risk adjusted cost* of delivering the project facilities and services by the Government through the traditional public funded route with the risk adjusted cost of delivering the same project as a PPP. If the risk adjusted cost of the PPP is lower than the risk adjusted cost of traditional procurement through public funding, then there is positive VfM in the PPP modality.

4.2. The objectives of the quantitative VfM analysis are as follows:

(i) to estimate the value that the Government will derive by implementing the project as a PPP

(ii) to justify the decision to select the procurement model as a PPP (over the public procurement option) based on an informed process that will also facilitate communication to relevant stakeholder groups

(iii) to evaluate tenders during the procurement stage by comparing the bids received against the benchmark costs established for delivering the PPP Project

(iv) to use the value expected to be delivered by the PPP Project as a benchmark for negotiation with the preferred bidder

(v) to evaluate the actual project performance against the value that was expected to be delivered for measuring the value that was delivered by the PPP Project.

4.3. The following table provides an overview of the roles and responsibilities of the relevant stakeholders involved in the quantitative VfM analysis:

Table 2: Responsibilities in quantitative VfM analysis

Institution	Responsibility
TA	The TA prepares the quantitative VFM analysis on behalf of the IA.
IA	**Phase II: Project Preparation and Appraisal** The IA is responsible for the following activities at this stage: - preparation of the detailed feasibility analysis that will provide inputs for the quantitative VfM analysis - undertaking the quantitative VfM analysis. The PMU constituted by the IA will be responsible for these activities, with the support of the TA appointed by the IA for the project. **Phase IV: PPP Procurement and Contracting** The IA is responsible for: - the review of the bids received comparison with the expected VfM from the project - the revision in the quantitative VfM assessment for the project based on the winning bid. These activities are performed by the Bid Evaluation Committee (BEC) and the Procurement Review Committee (PRC) with the support of the TA. **Phase V: Implementation and Management of PPP Contract** The IA is responsible for: - the revision of the quantitative VfM assessment based on the actual performance of the project - the reporting revisions to the MEF.
GDPPP	The GDPPP has the following responsibilities:

	– review the quantitative VfM analysis prepared by the IA at the Project Appraisal stage on behalf of the MEF (as part of the approval process) – review the risk allocation (is risk allocated in line with the principle of optimal risk allocation?) – estimate the expected value of the risks – review the periodic performance reports submitted by the IA during the Project Implementation and Management of the PPP Contract Phase including information on the comparison of estimated VfM vis-à-vis actual VfM delivered.
MEF	Approval of the PPP Project to move to procurement phase, based on the review by GDPPP.

5. Quantitative Calculation of Value for Money (VfM)

5.1. Quantitative calculation of VfM is based on a comparison of the risk adjusted lifecycle cost of a traditional government procurement with public funding, with the risk adjusted lifecycle cost of the Private Partner.

(i) The traditional procurement model with public funding is known as the **Public Sector Comparator (PSC)**. The PSC is an estimate of the hypothetical, whole-of-life cost of a project delivered through traditional government procurement with public funding. The PSC is developed in accordance with the required output specification, the proposed risk allocation and is based on the most efficient form of government delivery, adjusted for the lifecycle risks of the project.

(ii) The PSC is compared with the risk adjusted cash flows of the private sector for implementing the project as a PPP.

(iii) If the project delivered as a PPP has a *lower lifecycle cost* in comparison to the PSC, then the PPP option is selected as the procurement model.

5.2. The PSC comprises a number of components and is developed as given below.

Raw PSC

(i) The Raw PSC consists of the cost that the IA would incur to deliver the project through a traditional public procurement, before making any adjustments for risks. The costs are estimated for the delivery of the reference project to achieve the output specifications. The Raw PSC is developed based on the following costs:

- **Capital expenditure** incurred for the development of the project facilities, including the cost of construction, design costs, expenses incurred in public procurement, etc.
- **Operating and maintenance cost** incurred by the public sector in operating the project facilities for the whole-life-cycle (PPP Contract Period), including service provision based on the output specifications. This will also include the cost of repair and

maintenance, administrative cost and the staff cost for delivery of the output specifications. *Depreciation and other amortization and accrual-based items are not included* as part of the Raw PSC. Any third-party revenues likely from the project will need to be excluded from the operating and maintenance costs.

(ii) The Raw PSC is obtained by adding the capital, operating and maintenance expenditures (net of third-party revenues), *without adjustments for risks*. The cost and revenue inputs for developing the Raw PSC are obtained from the financial model that is developed as part of the Feasibility Study.

Competitive neutrality

(i) Competitive neutrality refers to adjustments to the PSC to make it comparable to the private sector reference project. This adjustment is undertaken by removing any advantages that the IA benefits from in comparison to the Private Partner. These advantages consist of *taxes and charges* from which the IA is exempt, e.g., property tax, stamp duty (on purchase of land), municipal charges, corporate taxes etc. Similarly, any disadvantages faced by the government in comparison to the Private Partner is *removed* for the competitive neutrality.

Retained and transferred risks

(i) PPP contracts are based on the transfer of risks from the public sector to the private sector and the VfM concept measures the value that is generated by the transfer of risks. For the development of the PSC, risks need to be identified and valued, as described below:

- **Identification of risks**

  The TA will list all the material risks that the project would be exposed to as highlighted in the Guidelines on Feasibility Study.

- **Estimation of the probability of individual risks**

  The probability of the risk is the quantitative likelihood that it will materialize during the contract period. The estimation of the probability of individual risks is generally based on *empirical evidence from the past projects of similar scale undertaken* by the IA or other Government agencies undertaking similar projects. For example, the probability of project cost escalation can be based on the average cost escalation that projects done by the IA have experienced in the past.

- **Valuation of risks**

  The valuation of risks involves the estimation of the expected financial impact of the risk. The maximum exposure of the risk is the loss that would occur if the risk event materialized. The product of the maximum loss and the probability of occurrence equals the expected loss or value of the risk. Therefore, ***expected value of risk = (financial impact if the risk event occurs) X (probability that the risk event occurs)***

- **Retained and transferred risk**

  This entails the IA allocating specific risks to the Private Partner and retaining the remaining risks, based on the principle that the party that is best able to manage a risk retains it. The retained and the transferred risks are valued and added to the PSC calculation.

Developing the risk adjusted PSC

(i) The risk adjusted PSC is the sum of the following components:
- Raw PSC
- adjustments for competitive neutrality
- retained risks
- transferred risks

(ii) The expected cash flows of the IA from the sum of the above components are *discounted* to calculate the present value of the PSC. The *discount factor is the interest rate at which the Government borrows long term funds* on the financial market (with a tenure comparable to the duration of the proposed PPP Contract), or the *yield of government securities* with a similar tenure.

Reference PPP Project

(i) After the estimation of the adjusted PSC, the cost of the project delivered as a PPP (i.e., the Reference PPP Project) is determined which is mostly the *output of the financial analysis*. Since the third-party revenues have been deducted from the PSC estimates, the cost to be considered in the analysis is the estimated cost for the Government, *regardless of the payment from users (not considered).*

(ii) The costs of the Reference PPP Project will need to be adjusted for cost relating to *project management and transaction implementation* expenditures incurred by the IA. This should be included since the regulatory costs may differ between a PPP and traditional public procurement. So, the cost regarding IA's project implementation staff required, construction supervision by an independent consultant, and

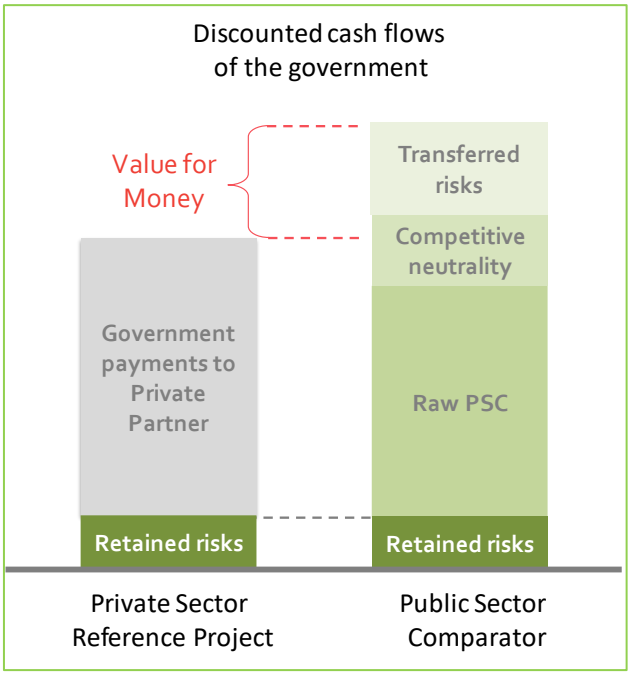
other such costs need to be added to PPP project costs, whenever they are exclusively related to the Reference PPP Project.

(iii) A further adjustment that needs to be taken into consideration relates to *other types of public financial support* that are eventually considered. Loans by a state-owned enterprise (SOE) that subsidizes interest rates might represent an indirect cost that must be considered in the analysis.

(iv) The discounted PSC is compared to the discounted risk adjusted cash flows of the project if procured as a PPP. Since the discount rate directly affects the conclusion of the VfM assessment, its choice should be consistent, made carefully and clearly justified.

(v) The *Net Present Value* of the PSC and the Reference PPP Project are compared to determine which represents the best alternative to implement the project. The PPP is said to offer a better Value for Money when the costs are lower than the PSC, as indicated in the figure below.

Figure 2: Quantitative VfM calculation



(vi) The quantitative estimate of VfM is the difference between the PSC and the Reference PPP Project. A *positive VfM means* that the Reference PPP Project has a lower risk adjusted present value of cash outflows for the public sector, as compared to the PSC. The positive VfM indicates that the PPP model will likely generate better value for the Government, and therefore the Government should proceed with the procurement of the Project through the PPP modality.

Appendix 1: Template for Qualitative Value for Money Analysis

	Driver	Questions	Low	Medium	High
A	**Advantages**	**The next seven lists of questions assess the presence and strength of drivers behind advantages of PPP. Based on your answers to the questions, please indicate in the right columns of the table to which extent the driver is present in the project being studied.[10]**			
A1	Output-based contracting	• Does some degree of flexibility remain in the nature of the technical solution/service and/or the scope of the projects? • Is the solution adequately free from the constraints imposed by the procuring authority, legal requirements and/or technical standards? • Is there scope for innovation in either the design of the solution or in the provision of the services?	**O**	**O**	**O**
A2	Optimal risk allocation	• Is there scope for significant risk transfer to the private partner (in accordance with the principle of optimal risk allocation)? • Can the payment mechanism and contract terms incentivize good risk management by the Private Partner?	**O**	**O**	**O**
A3	Private outsourcing	• Does the private sector have significant cost advantages in comparison with the IA in the delivery of the project services (owing to greater efficiency, economies of scale, greater experience/expertise, etc.)? • Could the private sector achieve a better commercial utilization of the assets underpinning the project, resulting in higher revenue generation?	**O**	**O**	**O**
A4	Life-cycle optimization	• Does the project offer the potential to achieve efficiency gains from life-cycle optimization? • Is it possible to integrate the design, build and operation elements of the project? • Are there significant ongoing operating costs and maintenance requirement? • Are these likely to be sensitive to the type of construction?	**O**	**O**	**O**
A5	Performance based payments	• Can the outcomes or outputs of the investment program be described in contractual terms, which would be objective and measurable? • Would incentives for service delivery be enhanced through a performance payment mechanism as proposed in the PPP?	**O**	**O**	**O**

[10] *This table shows a scale with three levels: low, medium and high. Alternative scales may also be used, if they are found to be more convenient or suitable.*

	Driver	Questions	Low	Medium	High
A6	Private financing	• Is financing by the private sector necessary to undertake the project? • Is it the case that no or insufficient public funds are available, so that the project cannot be undertaken (or only with large delays) unless private financing steps in?	**O**	**O**	**O**
A7	Revenue base	• Is there an identifiable revenue base for the project? • In case of revenue-based project: are there users of the project services with the willingness and ability to pay of the services? • In case of availability-based project: can the IA commit to the payment of the availability fees? • Is the revenue base stable and predictable?	**O**	**O**	**O**
D	**Disadvantages**	**The next six lists of questions assess the presence and strength of drivers behind disadvantages of PPP and obstacles to PPP. Based on your answers to the questions, please indicate in the right columns of the table to which extent the driver is present in the project being studied.**			
D1	Output specifications	• Is it possible to describe the services in clear, objective output-based and result-based terms (and not in terms of activities), which can be included in a long term contract? • Can the contractual outputs be defined so that they can be objectively measured? • Can the quality of the service be objectively measured and assessed? • Is it possible to establish an objectively verifiable link between the output specifications, the monitoring of the actual performance and the payment mechanism?	**O**	**O**	**O**
D2	Operational flexibility of Implementing Agency	• Is it possible to reconcile the degree of operational flexibility desired by the IA and the long-term nature of a PPP arrangement? • Will the PPP arrangement leave the IA with sufficient operational flexibility to respond to future needs? • What is the likelihood of large changes in service needs during the life of the PPP Contract that would require a change on the PPP contract? • If the services performed under the PPP arrangement interfere with other services or other projects not covered by the PPP Contract, are these interfaces manageable? • If the PPP arrangement necessitates the transfer of public sector staff to the Private Partner, will it be possible to accomplish this transfer without major problems or resistance?	**O**	**O**	**O**

	Driver	Questions	Low	Medium	High
D3	Capacity of Implementing Agency	• Does the contracting authority have sufficient human and financial resources to prepare and tender the PPP Project?	**O**	**O**	**O**
D4	Policy and regulatory barriers	• Is it the case that there are no legal or regulatory obstacles to delegate the provision of the services to a private party? • Is the provision of the services under a PPP arrangement compatible with the safeguarding of public interests (for instance with respect to environmental sustainability, workers' safety, fair competition, etc.)? • Is the provision of the services under a PPP arrangement compatible with other policy goals (for instance with respect to land use, income distribution, economic development, etc.)?	**O**	**O**	**O**
D5	Large and uncontrollable risks	• Does the project involve large risks that are largely outside the control of the Private Partner and that may make private finance unfeasible or very expensive? Examples are traffic risk (especially for greenfield projects and if macroeconomic conditions are highly uncertain), large uncertainties about the costs of meeting requirements imposed by environmental regulations, the use of unproven technology, difficult terrain conditions.	**O**	**O**	**O**
D6	Private sector capacity and interest	• Is there any evidence that the private sector is technically and financially capable of implementing the project? • Is there likely to be a sufficiently large number of bidders interested in the project to ensure effective competition? • Is there any evidence that financiers are willing to provide funds for investing in this type of project?	**O**	**O**	**O**
VFM	**Overall assessment**	• Given the answers to the questions above, are there enough indications that the proposed PPP arrangement yields Value for Money? • Are there any opportunities for the optimization of the proposed PPP arrangement (in order to strengthen drivers of advantages and reduce drivers of disadvantages)?	**O**	**O**	**O**

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