THE REPUBLIC OF UGANDA

NATIONAL PUBLIC-PRIVATE PARTNERSHIPS GUIDELINES

Annex F –Feasibility Study guidelines

PPP Unit of the Ministry of Finance, Planning and Economic Development

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List of abbreviations

DSCR	Debt Service Coverage Ratio
EIA	Environmental Impact Assessment
EIRR	Economic internal rate of return
EMMP	Environmental Management and Monitoring Plan
ENPV	Economic net present value
FIRR	Financial internal rate of return
FNPV	Financial net present value
LARP	Land Acquisition and Resettlement Plan
PPP	Public-private partnership
SCBA	Social cost-benefit analysis
SIA	Social Impact Assessment
SPC	Special Purpose Company
VFM	Value-for-money
WACC	Weighted average cost of capital

1. Introduction

1.1 Background

1.1.1. In 2010, the Government of Uganda adopted a PPP policy. The policy creates a framework for the involvement of the private sector in provision of public infrastructure and services.

1.1.2. The *Public Private Partnerships Act* came into force on 1 October 2015. The *PPP Act* establishes the legal and institutional framework for the concrete implementation of PPP projects. The *PPP Act* provides for the establishment of the Public Private Partnerships Committee, the Public Private Partnerships Unit and the Project Development Facilitation Fund. The *PPP Act* also sets out the procedure for the implementation of PPP projects across all steps of the project cycle from inception to the end date of the PPP agreement. Furthermore, the *PPP Act* defines the contents of the PPP agreement.

1.1.3. Pursuant to the *PPP Act*, the Minister responsible for finance issued the *Public Private Partnerships Regulations, 2019* and the *Public Private Partnerships (Meetings of the Committee) Regulations, 2019 (*together, *the PPP Regulations 2019).* The *PPP Regulations* prescribe the bidding methods and procedures for the selection of a Private Party.

1.1.4. The *Guidelines* presented in this document are firmly grounded in the policy and legal framework that has been put in place by the Government for the implementation of PPP projects.

1.2 This document

1.2.1. The National Public-Private Partnership Guidelines consist of a Main Document and a set of Annexes.

1.2.2. This document is Annex F, which contains guidelines for the Feasibility Study (chapter 2 of the Annex), as well as a template for the PPP Project Assessment Report prepared by the PPP Unit (chapter 3 of the Annex).

1.2.3. It should be noted that in addition to the present annex, the PPP *Guidelines* also include a number of separate annexes that focus in detail on particular parts of the Feasibility Study, in particular:

- Financial Analysis Guidelines (Annex G);
- Value-for-Money analysis Guidelines (Annex H);
- Generic Risk Matrix (Annex I); and
- Guidelines for the Management of Contingent Liabilities (Annex J1).

2. Feasibility Study guidelines

2.1 Purpose of Feasibility Study

2.1.1. For a PPP project to be feasible and structured in an optimal way many conditions must be satisfied.

- The proposed technical solution for the implementation of the project is practically feasible and cost-efficient.
- The project complies with all applicable legislation and regulations.
- The institutional and regulatory framework for implementing the project is in place.
- The project is able to secure the permits and licenses required for its construction and exploitation.
- The economic benefits of the project outweigh the economic costs.
- The project services are affordable to users.
- The project is commercially and financially viable, i.e. able to generate sufficient revenues to cover costs and to provide an adequate return to lenders and investors.
- The proposed PPP arrangement is more beneficial than non-PPP options or alternative PPP options to implement the project.
- The project and the proposed PPP arrangement are bankable, i.e. able to attract investors and lenders prepared to finance the investment costs of the project.
- The project does not have an unduly detrimental environmental impact.
- The project does not have an unduly detrimental social impact (resettlement, impact on livelihoods, …). The proposed PPP Arrangement features a balanced sharing of risks between the government and the private partners.
- The project is fiscally sustainable for the government, both in the short and the long term.

2.1.2. The purpose of the Feasibility Study is (i) to design a project and PPP arrangement that satisfy the above conditions; and (ii) and to demonstrate convincingly that the proposed project and PPP arrangement indeed satisfy the above conditions.

2.1.3. The Feasibility Study provides for:

- the government decision to proceed with the procurement and implementation of the project;
- the approval of government fiscal commitments to the project; and
- the choice of the optimal PPP arrangement.

2.1.4. In addition, the Feasibility Study constitutes the basis for the preparation of the bidding documents (technical specifications, draft PPP agreement) in the procurement stage.

2.1.5. In order to fulfil the above functions, the Feasibility Study must meet stringent contents and quality requirements. If these requirements are not met, the Contracting Authority will not have the necessary reliable information for appraising the project, and there will be no sufficient basis for the development of the project as a viable PPP and, therefore, the Feasibility Study will not be approved by the PPP Committee.

2.1.6. The Feasibility Study is carried out by the Transaction Advisor. The role of the Contracting Authority consists of the procurement of the consultant, and the evaluation of the Feasibility Study Report submitted by the latter. The sections that follow describe the items that the Contracting Authority

must examine when evaluating a Feasibility Study Report (one section per component of the feasibility study).

2.2 Contents and scope of the Feasibility Study

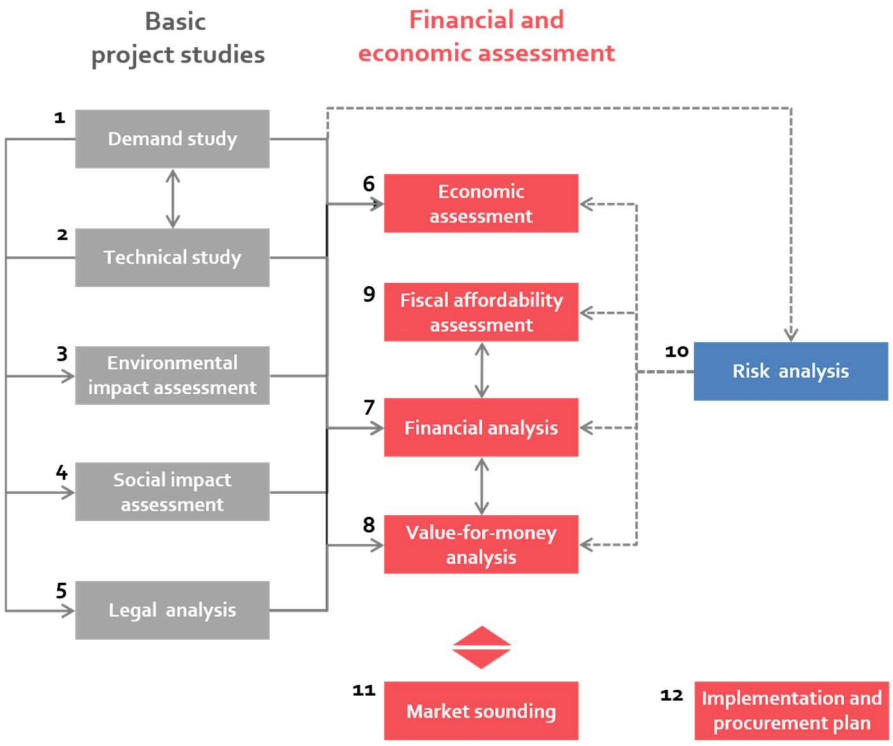
Parts of the Feasibility Study

2.2.1. The Feasibility Study should comprise the following components:

(1) Demand study
(2) Technical study
(3) Environmental impact assessment
(4) Social impact assessment
(5) Legal analysis
(6) Economic assessment
(7) Financial analysis
(8) PPP/Value-for-money assessment
(9) Fiscal affordability assessment
(10) Risk analysis
(11) Market sounding
(12) Implementation and Procurement Plan

2.2.2. The figure below shows a logical sequence for carrying out the various parts of the Feasibility Study and the main input/output relations between them.

Figure 1: Parts of Feasibility Study



2.2.3. It must be noted that the arrows in the figure show a simplified picture of the input-output relations between the parts of the Feasibility Study. In practice there is constant feedback.

2.2.4. A central role is occupied by the risk analysis. The identification and analysis of risks between Government and the Private Party is based on information from the demand, technical, environmental, social and legal studies. The results of the risk analysis (uncertainty margins for cost and revenue parameters, possible delays of project implementation, …) are passed on to the economic, financial, PPP/Value-for-money and fiscal assessments in order to examine the impact of the risks on the economic and financial viability of the project, on the fiscal impact and on the proposed PPP structure.

2.2.5. The market sounding exercise (as detailed in Section 11 below) must be undertaken when sufficient information has been collected and analysed to allow a substantive dialogue with potential private parties. The feedback of the market sounding is used to revise the project definition and to optimise the PPP arrangement (if and where needed).

Required detail and depth of the Feasibility Study

2.2.6. The required level of detail and depth of the feasibility study depends on the size and complexity of the project. For instance, the construction and subsequent operation of an urban elevated railway requires a much more extensive feasibility study than a project consisting of the construction and maintenance of a small number of standard school buildings.

2.2.7. The general rule is that the Feasibility Study must be sufficiently detailed to meet legal and regulatory requirements (in particular with respect to environmental and social impacts, which are often subject to specific laws and regulations), and to enable an informed decision by the competent authorities about the feasibility and desirability of the project and its implementation as a PPP.

2.2.8. A balance must be found between the cost of the project and the cost of the Feasibility Study. A more detailed Feasibility Study generally results in a better conceptualised and structured project, so that costs are saved and/or benefits are increased. However, the maximum extent of cost savings and benefit gains is limited by the cost and the size of the project. Hence, it is not efficient to spend large resources on the Feasibility Study of a small project.

Generic quality control requirements of the Feasibility Study

2.2.9. Before describing the specific requirements of the various parts of the Feasibility Study, a number of generic quality control requirements for the Feasibility Study must be followed:

- the scope and research methods of the Feasibility Study have been chosen in line with the project characteristics;
- the assumptions and calculation methods are comprehensively documented and justified;
- the different parts of the Feasibility Study are internally consistent (use of same assumptions where relevant; cost estimates in the technical analysis must correspond to cost inputs in the economic and financial analysis; updates must be applied in all parts of the study so that consistency is maintained);
- the most recent available data have been used (when new information becomes available with a significant impact on the results, the study must be updated while taking care to preserve internal consistency as mentioned in the preceding point).

2.2.10. If the Feasibility Study has been developed in accordance with the above criteria, then the Contracting Authority can assess the degree of reliability of the study and be confident that:

- all reasonable, feasible project options have been considered;
- all relevant impacts, costs and benefits have been examined;
- the assumptions are reasonable and realistic.

2.2.11. However, it must be pointed out that the accuracy of assumptions and research methods can never be fully verified by an evaluator that is not a sector or discipline expert. When there are doubts about the quality of all or parts of the Feasibility Study, a second opinion by relevant sector or discipline experts must be carried out.

2.3 Requirements of the Feasibility Study

(1) Demand study

2.3.1. The demand study determines the rationale of the project and estimates the quantitative demand for the project services. The resulting demand forecast scenarios serve are a key input for most of the other parts of the feasibility study. The forecasted demand volumes determine the design capacity of the project, the value of revenues and economic benefits, and the severity of environmental and social impacts. If there is no or little demand, then it is likely the project will not be feasible.

Project rationale requirements

2.3.2. The project objectives are defined. Some (non-exhaustive) examples of project objectives are:

- solving a capacity bottleneck;
- expanding a public service to an unserved area;
- expanding a public service to meet anticipated demand growth;
- providing basic public infrastructure to support economic development plans;
- meeting a regulatory requirement,
- achieving a specific government policy goal.

Demand forecast requirements

2.3.3. Demand forecasts for the service are established. The demand forecasts refer to the demand volume (initial volume and growth rate), the price and, in the case of user-pays projects, 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 has been determined.

- If similar projects have recently been carried out or if similar services are offered in the country, then these may be used as a reference for the estimate of the demand volume and the willingness to pay. In that case the demand study must explain how the demand data on the reference projects and services have been adjusted to account for the (limited) differences between the specific conditions and characteristics of the studied project and the reference projects or services.
- If no suitable reference projects or services can be found, then the demand forecasts must be made based on representative user surveys and quantitative demand models. Both the surveys and the models must be clearly documented in the demand study.

2.3.4. Demand forecasts are developed for all relevant project options and scenarios, as identified in Paragraphs 2.3.8 and 2.3.9. These include at least:

- the different project options;
- different demand growth scenarios.

2.3.5. The required quality of the services is determined on the basis of an analysis of user needs, including through a stakeholder consultation (if required).

2.3.6. Alternative revenue structures are developed and assessed. The revenue structure includes:

- determination of the charging base (usage volume, availability);
- differentiation of tariff in function of quality, user category or usage volume (banding);
- initial tariff;
- periodic adjustment of tariff in line with inflation.

(2) Technical study

2.3.7. The technical study comprises:

(a) definition of project options;
(b) preliminary/conceptual design and technical feasibility assessment;
(c) project site assessment;
(d) estimate of project costs;
(e) drafting of output specifications.

Definition of project options

2.3.8. Various technical options for achieving the project objectives are developed. A technical option is defined by a description of:

- the project assets that will be built or purchased (type, capacity, site/alignment, technology);
- the time schedule of realization of the assets; and
- the project services that will be supplied (type, volume, quality, duration).

2.3.9. The set of considered technical options spans the range of possible choices with respect to project site, capacity, quality, technology and implementation schedule. Where relevant the following types of options must be defined and assessed:

- **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.

Common pitfalls in definition of project options

No solid analysis of needs and objectives has been conducted to develop the project definition. Instead the definition of the project is often based on existing technical plans and designs that put forward by the contracting authority. The consequences are:

- the project definition is insufficiently linked to the project objectives (such as solving a capacity bottleneck, addressing an inefficiency, improving the quality of public services, meeting a regulatory requirement, …);
- the project specifications are not or are insufficiently adapted to user requirements, resulting in suboptimal project configurations and a loss of user benefits.

Preliminary/conceptual design and technical feasibility

2.3.10. On the basis of the project definition, a preliminary technical design of the project is developed for all project options.

(a) In this regard it should be noted that one of the important value-for-money drivers in PPP projects is the design freedom left to the bidders and the selected private partner after the award of the contract. This gives the private partner the opportunity to design creative and innovative technical solutions, provided that the output specifications are met. Consequently, the objective of the technical analysis in the feasibility study is not to prepare detailed designs and blueprints.

(b) In general, the technical design and analysis in the feasibility study must be as detailed (but not more) as is necessary for:

- demonstrating the technical feasibility of the project,
- estimating the project costs; and
- providing the required information for the environmental and social analysis.

(c) As a result, the required level of detail of the technical analysis depends on the complexity of the project. For instance, a large-scale transport infrastructure project will require a more extensive technical study than a straightforward building project.

(d) Sometimes it may be necessary to develop a relatively detailed design in order to fulfil the functions mentioned in point (b) above. In that case the design is converted back into more generic output specifications, so that the bidders retain the freedom to design their own solutions.

2.3.11. The technical feasibility of the project is demonstrated:

(a) If similar projects have been carried out recently in Uganda or elsewhere in similar circumstances as the present project, then these reference projects may be used as evidence of the technical feasibility of the present project. In that case the technical analysis must demonstrate the relevance of the chosen reference projects for the present project and must explicitly account for the (limited) differences between the reference projects and the present project (i.e. must demonstrate that these differences do not have an impact on the technical feasibility). Projects may be considered similar if they involve similar technologies, have a similar capacity and are implemented in similar physical circumstances.

(b) If no suitable reference projects exist, then the technical feasibility must be demonstrated by project-specific analysis.

2.3.12. The text box below describes for illustration the technical studies that are typically required in PPP projects across various infrastructure sectors.[1]

Typical technical studies in PPP project feasibility 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. Volume of waste
   b. Sources of waste
   c. Waste characteristics
   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 (UFW) 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

Site assessment

2.3.13. The project site/alignment is defined and is shown on maps.

2.3.14. Compliance with relevant national, provincial and district spatial plans is assessed.

[1] Source: *PPP Guide for Practitioners*, Ministry of Finance, Government of India (2016).

2.3.15. Geotechnical surveys are undertaken to determine the suitability of the underground for the proposed project.

2.3.16. The need for land preparation and improvement (levelling, demolition of existing structures, move of utility lines, …) is determined.

2.3.17. The connections to transport (road, rail, airport, seaport, …) and utility networks (electricity, water, gas etc.) are assessed and improvement needs are determined.

2.3.18. The need for coordination with other government entities for approvals and the execution of complementary works is determined.

2.3.19. The requirements for the use of existing government assets (land, infrastructure, …) are identified for purpose of the examination of the legal feasibility of their use by the private partner of a PPP. Any land acquisition and resettlement requirements are also identified as part of the Social Impact Assessment (described below).

Cost estimates

2.3.20. Cost estimates of all technical options have been prepared. The estimates include all relevant costs caused by the project during its expected lifetime:

- costs of the construction or procurement of the project assets;
- costs of land acquisition and improvement;
- costs of measures to prevent or mitigate social and environmental impacts;
- costs of operation and maintenance during the lifetime of the project.

The table below presents an overview of the typical project cost items.

Table 1: Project cost items

Capital expenditures	Operating and maintenance expenditures
• Preparatory studies (design studies, environmental impact analysis, preparation of land acquisition costs, …) • Land acquisition and resettlement • Site preparation • Civil construction • Plant and machinery (purchase and installation) • Measures to prevent or mitigate social and environmental impacts • Provision for price increases during the construction period • Provision for contingencies	• Salaries • Consumables (chemicals, fuel, power) • Spare parts • Replacement investments • Third party services • Administration • Communication • Overhead costs

2.3.21. The cost estimates should be well documented and prepared according to good industry practice.

(a) If suitable reference projects exist (see above in Paragraphs 2.3.3 and 2.3.11), then the costs of the reference projects may be used as an estimate of the costs of the present project.

(b) If no suitable reference projects exist, a project-specific cost estimate must be prepared, for instance by an elemental parametric method on the basis of a preliminary design.

(c) The cost estimates take into account specific characteristics of the project, such as remote location, difficult site conditions and local availability of inputs (human resources, raw materials, support services, ...).

(d) The assumptions of the cost estimates must be documented (with reference to sources) and justified. The calculations are clearly explained.

Common pitfalls in cost estimation

- Costing methods are unclear, resulting in unreliable cost estimates.
- Unit prices are undocumented, so that their relevance and correctness for the project being appraised cannot be ascertained.
- Cost margins for contingencies are forgotten, or their basis is unclear.
- No sound and project specific assessment and quantification of construction cost risks has been conducted, possibly resulting in a large underestimation of costs.

Output specifications

2.3.22. Output specifications are developed for the preferred technical option for the project identified as a result of the technical studies described above and from the economic assessments (see section (6) below).

2.3.23. The output specifications are comprised of:

- minimum specifications of the project assets;
- minimum performance standards of the project services;
- minimum condition of the project assets at the end of the PPP agreement (handover to government).

2.3.24. Minimum specifications of the project assets are developed.

- For each element of the project assets the required capacity, minimum dimensions, functional specifications and quality standards are specified.
- The specifications are expressed in measurable terms, so that they can be verified.
- The proposed timetable for the construction work and the provision of equipment is established.

2.3.25. The minimum performance standards of the project services are developed. For each service a service level agreement (SLA) is established, specifying:

- availability and quality requirements;
- performance indicators to measure compliance with availability and quality requirements;
- monitoring system for measuring the performance indicators.
- Minimum condition of the project assets at the end of the PPP agreement.

(3) Environmental impact assessment

Environmental Impact Assessment

2.3.26. An environmental impact assessment of the project is conducted in order to identify and describe the potentially significant environmental effects of the project. The assessment is conducted in accordance with the provisions of relevant laws and regulations, as well as (if applicable) with the guidelines of international and bilateral development financing institutions that support the project. International and bilateral development financing institutions often have their own guidelines with respect to environmental impact assessment and acceptable environmental impacts. If the project is to be supported by such an institution than these guidelines must also be complied with. These will often refer to the Equator Principles and the Sustainable Development Goals (SDGs).

2.3.27. In many projects the environmental impact assessment (EIA) cannot be fully completed at the Feasibility Study stage, because the environmental regulations require that the environmental impacts are assessed on the basis of the final, detailed design. The latter is only prepared by the Private Party after the award of the contract. Consequently, the Private Party must complete the EIA report at the Contracting Stage.

2.3.28. The Transaction Advisor should consult with National Environment Management Authority and other appropriate agencies when carrying out the Environmental Impact Assessment.

Environmental management and monitoring plan

2.3.29. An environmental management and monitoring plan for the project is prepared in accordance with the provisions of relevant laws and regulations. The environmental management and monitoring plan covers:

- the identity of the contracting authority;
- the envisaged project activities;
- environmental permits required;
- the expected environmental impacts of the project activities;
- the preventive and mitigating measures that are needed for the project to comply with environmental laws and regulations (for instance design requirements, compensation, obligation to install equipment to mitigate the environmental impact, …);
- environmental monitoring plan.

2.3.30. A plan and time schedule for obtaining the environmental permits, and the subsequent implementation of the environmental management and monitoring program is prepared.

2.3.31. The cost of obtaining the environmental permits and the implementation of the environmental management and monitoring program are estimated.

2.3.32. The Feasibility Study explains how to incorporate the environmental management and monitoring plan into the bidding documents and the PPP agreement.

(4) Social impact assessment

Social Impact Assessment

2.3.33. The social impact assessment must demonstrate that the social impacts of a project are acceptable and do not prevent the realisation of the project in compliance with national laws and regulations, as well as (if applicable) international guidelines and best practice.

The social impact screening includes:

- identification of the affected communities and parties;
- identification of the parties that will be eligible for compensation;
- extent of the land acquisition and population resettlement required by the project;
- assessment of affordability of user fees.

Land Acquisition and Resettlement Plan (LARP)

2.3.34. A comprehensive Land Acquisition and Resettlement Plan is drawn up for the project according to relevant national laws and regulations and policies. The national laws and regulations and policies include: Article 26 of the Constitution of the Republic of Uganda, The Land Acquisition Act Cap 226, The Land Act Cap 227 and Guidelines for Compensation Assessment under Land Acquisition, 2017, etc. The involuntary resettlement guidelines (e.g. Operational Manual OP 4.12 of the World Bank) may also need to be followed in case the project receives funding/ financing support from international and bilateral development agencies.

2.3.35. A planning for the execution of the land acquisition and resettlement plan is prepared, and the responsible agencies are indicated.

Other social impact assessment reports or management plans

2.3.36. Other social impact assessment reports (poverty, indigenous people, gender, …) are prepared for the project according to relevant national laws and regulations and policies, as well as (if applicable) with the guidelines of international and bilateral development financing institutions that support the project.

Local Content

2.3.37. As part of the social impact assessment, the contracting authority must consider how the project can best promote and procure goods and services locally whenever appropriate in order to support the local enterprises within Uganda, and how local capacity shall be developed. In particular, consideration must be given to the "Buy Uganda Build Uganda" policy issued in March 2017. Local content requirements can also be set out in the PPP procurement documents.

(5) Legal analysis

2.3.38. The comprehensive legal analysis must establish that the implementing agency has the legal authority to conclude a PPP agreement for the project, and that the proposed project complies with all relevant laws and regulations (general laws and applicable sector laws). The legal analysis identifies potential legal and regulatory obstacles to the project and proposes measures to address these obstacles.

2.3.39. The proposed project complies with relevant legislation, such as:

- Constitution of Uganda;
- PPP Act, 2015 and PPP Regulations, 2019;
- National Environment Act Cap 153;
- National Environment (Environmental Impact Assessment) Regulations S.I 153-1;
- Land Acquisition Act (Cap 226);
- Uganda Revenue Authority Act (Cap, 196);
- Physical Planning Act, 2010;
- Public Finance Management Act, 2015; and
- All sector specific laws.

2.3.40. The legal authority of the contracting authority to implement the project is established.

2.3.41. The legal obstacles and risks are identified. If the legal risks constitute an unsurmountable obstacle, it may not be possible to realise the project. In case legal obstacles and/or risks are present, an action plan is established to overcome the obstacles and to manage the risks (prevention and/or mitigation) for example the requirement for new legislation to be passed.

2.3.42. All required legal and regulatory permits and approvals are identified. An action plan is defined to secure the legal and regulatory permits and approvals.

(6) Economic assessment

2.3.43. Social Cost Benefit Analysis (SCBA), also called economic analysis, is a methodology developed for evaluating the costs and benefits of investment projects from the point of view of the society as a whole.

2.3.44. This section sets out the contents and quality requirements of a sound SCBA. A SCBA meeting these requirements provides a solid basis for the assessment of the net economic benefits of a project to society, which is an important input for the government decision whether to proceed with the implementation of the project and for the granting of government support.

2.3.45. An extensive literature exists on the detailed methodology for carrying out a SCBA. A very good recently published methodological manual for conducting a SCBA is:

Asian Development Bank, Guidelines for the economic analysis of projects, 2017.

2.3.46. Applying these methodological guidelines will result in a SCBA meeting the contents and quality requirements set out below.

Project options

2.3.47. A representative set of the relevant project options is considered. The set of considered options spans the range of possible choices with respect to project site, capacity, quality, technology and implementation schedule. One of the considered alternatives is a 'do minimum' option, which consists of a set of low-cost measures that achieve at least partially the project objectives.

2.3.48. In addition, the expected evolution without project (the 'do nothing' option) is specified. The costs and benefits of the considered project options are calculated as differences compared to the 'do nothing' option.

Costs

2.3.49. The costs of the project options are estimated. They include:

- the costs of the construction or acquisition of the assets;
- the costs of mitigating and compensating measures;
- the loss of the present function of the land that will be occupied by the project (the land acquisition costs may be used as a proxy);
- the maintenance and operating costs;
- any other costs that are caused by the project.

2.3.50. The costs are determined compared to the 'do nothing' option. Only costs that occur in the project options but not in the 'do nothing" option are included in the SCBA.

2.3.51. The costs are expressed in constant price level. [2]

2.3.52. The costs are measured by their economic value or opportunity cost. Where appropriate financial prices have been converted into economic prices or shadow prices. This may for instance be the case for unskilled labour (shadow wage factor) and imported goods that are valued at border prices (shadow exchange rate factor).

2.3.53. The cost estimates are clearly documented and explained. The sources of cost data are indicated, assumptions are motivated, and calculations are explained. The explanation of the cost estimates may refer to the cost estimates in the technical study.

2.3.54. Important costs for which no reliable quantitative estimates can be made (for lack of data or calculation models) are described in qualitative terms, so that they can be taken into account by the decision-maker.

Benefits

2.3.55. The benefits of the project options are 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.

2.3.56. The benefits are expressed in constant price level.

2.3.57. The estimates of the benefits are clearly documented and explained. The sources of data are indicated, assumptions are motivated, and calculations are explained. With respect to the

[2] By convention a SCBA is conducted in a constant price level. This means that all costs and benefits are expressed in real values without expected inflation. If the price level of some costs and benefits is expected to increase slower and faster than general inflation, then an inflation adjustment factor is applied. This adjustment factor is negative for the prices that are expected to increase slower than general inflation, and positive for prices that are expected to increase faster than general inflation.

assumptions on the demand volume (an important factor of the value of the benefits) the explanation in the cost-benefit analysis may refer to the analysis of user demand.

2.3.58. Important benefits for which no reliable quantitative estimates can be made (for lack of data or calculation models) are described in qualitative terms, so that they can be taken into account by the decision-maker.

Assessment of economic feasibility

2.3.59. The net present value of the stream of costs and benefits during the lifetime of the project is calculated (economic net present value or ENPV). Future costs and benefits are converted into their present value using the **social discount rate**.

2.3.60. In line with World Bank recommendations (see below) the social discount rate is set at 6% per annum. Since a SCBA is conducted in constant price level, the social discount rate is expressed in real terms (i.e. without inflation expectations).

> ***Social discount rate***
>
> In accordance with a World Bank technical note[3], the social discount rate (SDR) is based on the Social Rate of Time Preference (SRTP). The SRTP is defined by the "Ramsey formula":
>
> $$SRTP = \delta + \theta\, g$$
>
> with:
>
> δ = pure rate of time preference
>
> θ = consumption elasticity of marginal utility
>
> g = growth rate of consumption
>
> The pure rate of time preference is set to zero (δ=0) under the assumption that the government should not value the welfare of today's individuals more than that of individuals in the future. A review of the academic literature suggests values for θ between 1 and 2. The authors of the technical note adopt the upper estimate (θ =2). The growth rate of consumption is determined by the growth of income per capita. The parameter g is therefore equal to expected long run real per capita growth in Uganda. Unless specific forecasts from reputed sources are available, the authors of the technical note recommend a value of 3% per annum, which corresponds to the observed growth rate of World Bank client countries over the last twenty years.
>
> Plugging the above values into the Ramsey formula yields:
>
> SDR = STRP = 6% per annum.

2.3.61. The economically preferred project option is determined.

(a) The preferred project option is the option with the highest ENPV, provided that this ENPV is greater than zero (otherwise the 'do nothing' option is the preferred alternative).

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[3] Marianne Fay, Stephane Hallegate, Aart Kraay and Adrien Vogt-Schilb (February 18, 2016), *Discounting Costs and Benefits in Economic Analysis of World Bank Projects*, World Bank.

(b) 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.

2.3.62. For purposes of presentation the internal rate of return of the stream of net benefits (benefits less costs) can be calculated – the is economic internal rate of return or EIRR. The EIRR of the preferred option should exceed the social discount rate (otherwise the 'do nothing' option is the preferred option). However, the EIRR should not be used for the ranking of project options. It is possible that the option with the highest ENPV differs from the option with the highest EIRR. In that case the ENPV criterion yields the correct ranking.

Sensitivity analysis

2.3.63. A sensitivity analysis is carried out in order to assess the effect of (i) uncertainty about important assumptions in the calculation of costs and benefits and (ii) project risks regarding the economic feasibility of the project.

2.3.64. The usual sensitivity tests include:

- increase of costs by the uncertainty margin of the costs estimate (usually around 20%);
- low demand scenario;
- any important project risks that have been identified in the other parts of the feasibility study (for instance delay of the project implementation due to permit problems).

(7) Financial analysis

2.3.65. The financial analysis assesses the financial return of the project from the point of view of the Private Party. Financial viability is an essential condition for the implementation of the project. The main purpose of the financial analysis is therefore to identify the conditions that need to be satisfied in order for the project to be financially viable.

2.3.66. A detailed financial analysis of the project is conducted with a project financing model. This model includes:

- projection of project investment and operating cash flow over the duration of the PPP agreement (as in the preliminary financial analysis;
- modelling of the financing structure, including at least equity, subordinated debt and senior debt;
- projection of financing cash flow on the basis of the financing structure;
- modelling of cash waterfall;
- projection of income statement and balance sheet;
- calculation of key financial ratios, including at least gearing, return to shareholders, FIRR and Debt Service Coverage Ratio (DSCR).

2.3.67. The financial feasibility is assessed. The project is financially feasible if:

- the return to shareholders (equity and subordinated debt) is at least equal to the required rate of return;
- the minimum DSCR exceeds the level usually prescribed in loan covenants;
- the loans can be repaid on schedule;
- the cash balance remains positive.

2.3.68. A sensitivity analysis is carried out in order 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. The usual sensitivity tests include:

- increase of costs by the uncertainty margin of the costs estimate (usually around 20%);
- low demand scenario;
- any important project risks that have been identified in the other parts of the feasibility study (for instance delay of the project implementation due to permit problems).

2.3.69. The impact of government guarantees and government support on the financial feasibility, including the impact of such support on user fees, is investigated.

2.3.70. Further guidance on conducting the detailed financial analysis is presented in Annex G.

(8) PPP/value-for-money assessment

2.3.71. The value-for-money (VfM) assessment determines the achievability and desirability of undertaking the project as a PPP, instead of through conventional public procurement. The VfM assessment constitutes the basis for the decision to undertake the project as a PPP and provides inputs for the optimal structuring of the PPP arrangement (PPP contract model, payment mechanism, risk allocation, ...).

2.3.72. In addition, the key commercial terms of the PPP agreement are defined.

Description of proposed PPP arrangement

2.3.73. The description of the proposed PPP arrangement comprises at least the following items:

- assessment of the type of PPP agreement (for an overview of types of PPP agreements see Annex A – Key PPP concepts);
- duration of the PPP agreement;
- activities to be carried out by the PPP contractor by project phase (finance, design, build, rehabilitate, operate, maintain, ...);
- outline of remuneration mechanism (user pays of government pays; volume-based or availability-based, ...);
- government support;
- government property made available to the private party (land, assets, goods);
- other responsibilities of the contracting authority;
- allocation of main project risks;
- the status of ownership of the asset during the PPP;
- government participation in the financing of the SPC (if any).

Value-for-money assessment

2.3.74. In the Value-for-Money (VFM) assessment the costs and benefits of the PPP option are compared to the non-PPP option of conventional procurement. This is known as the assessment of the public sector comparator. The results of this analysis are:

- the determination of the best option;

- an insight in the benefits and costs of the PPP option compared to conventional procurement;
- an insight in how the proposed PPP arrangement can be optimised.

2.3.75. The methodology of the VFM assessment is presented in a separate annex (annex H).

Key commercial terms of PPP agreement

2.3.76. On the basis of the findings of the other parts of the Feasibility Study (in particular the financial analysis, the value-for-money assessment, the risk analysis and the market sounding), the key commercial principles of the PPP agreement are defined. In this way the initially envisaged PPP model is elaborated in more detail, as a preparation for the procurement and contracting stage. The key commercial terms will constitute the basis for the drafting of the PPP agreement between the contracting authority and the Private Party.

2.3.77. A draft Heads of Terms must be submitted to the PPP Committee along with the Feasibility Study Report.

Table 2: Main sections of a PPP Agreement

Item	Contents
Involved parties	- … - …
Project Description	- …
Obligations of the Private Contractor	*What is the scope of activities of:* Private Party vs. Contracting Authority? Design … … Financing … …
Obligations of the Contracting Authority/Authorities	Construction … … Operation … … Maintenance … … Permits … … Assistance … … Ownership … … ROW acquisition … … Etc. … …
Contract Period	Contract Period length? Start date? Potential to extend contract length? At whose initiative?
Conditions Precedent	Conditions precedent for Contracting Authority Conditions precedent for Private Party
Rights of the Private Party	What are the rights of the Private Party, depending on the nature and content of the Project? • Access to the site • Use of existing assets • Making structural changes in existing assets

Capital lock-up rules	Restrictions on transfers of shares in the SPC (per section 20(b) of the *PPP Act* only allowed after approval of the Minister of the contracting authority and the Minister responsible for finance)
Financing requirements	Obligation of private party to finance the investment in project assets Deadline for financial close Minimum gearing Co-financing by contracting authority or other government entity (if applicable) Procedure for refinancing Security package/direct agreements
Design and Construction	What is the contribution of the contracting authority in the design? • Output Specifications • Conceptual Design • Procedural approvals and licensing Design and construction milestones How to treat design changes? What are the obligations of the Private Contractor concerning construction? Are variations allowed? Procedural treatment of variations. Impact on the fees Delays Defects Testing and inspections
Operations and Maintenance	What are the operational rights granted to the Private Contractor (further development of the asset, commercial exploitation, etc.)? Role of the Contracting Authority during the contract period Requirement of operational performance security from Private Contractor Operations and maintenance milestones
Project Assets and ownerships	Who will own the existing assets? Who will own the new assets being created? When will ownership of the project assets transfer?
Fees, Charges, Indices, Contingencies (Payment Mechanism)	Which sources of revenues will the Private Party have? In case of user charges: • Fee structure • Min/max allowable rate • Indexation/escalation arrangements • Revenue sharing mechanisms In case of payments from Government: • Fixed periodic payments Variable depending on asset usage • Indexation/escalation arrangements • Use of milestone payments • Applicable index formula • Institution handling payment Who will pay what to whom? How much shall be paid?

	When will payments be made? Which account(s) should the payments be routed from?
Bonus/Penalty regime (Performance Mechanism)	• Output standards • Structure of penalties linked to performance below norms • Bonus structures linked to performance • Monitoring and performance evaluation framework for measuring performance
Insurance and guarantee requirements	Which risks must be insured? By Private Party? By Government? Requirement of construction performance security from Private Party?
Force Majeure events and consequences	• Definition of force majeure and consequences of force majeure
Delays/supervening events and consequences	• How will delays be dealt with? • How will compensation be dealt with?
Default and termination	• Events of Default and termination • Consequences of Termination, including Payments Formulas • Buy-out Price Formulas • Etc.
Handback	• Gradual build-up of handback security • Maintenance requirements preceding handback • Asset quality requirements at handback • Other requirements at transfer (knowledge transfer, transfer of books and accounting, etc.)
Dispute Resolution Framework	• Procedure on a dispute • Mechanism for resolving a dispute
Governing Law	The Laws of Uganda
Jurisdiction	Courts that will have jurisdiction on matters related to the contract
Appointment of Independent Expert	Procedure for the appointment of the Independent Expert
Liabilities	Liabilities of each party, including liabilities to third parties
Protection of user's 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.
Boilerplate Clauses	These are standard clauses included in all PPP agreements

(9) Fiscal affordability assessment

2.3.78. In the fiscal affordability assessment, the financial feasibility of the project is assessed from the point of the government, i.e. the contracting authority and any other government entities that provide financial support to the project.

2.3.79. The fiscal affordability assessment contains three parts:

(a) the determination of the need for government support;
(b) the projection of the fiscal impact of the project over its lifetime; and
(c) the assessment of the fiscal affordability of the project.

Determination of the need for government support

2.3.80. The determination of the need for government support is in particular relevant in the case of user-pays PPP projects. In government-pays PPP projects the private party is anyways fully remunerated by the government.[4]

2.3.81. In user-pays PPP project government support may be needed in the following cases.

- The demand is too low so that the expected user revenues are insufficient to recover the costs of the private party.
- The user fees that would allow full cost recovery render the service unaffordable for many users. The government therefore imposes a ceiling on the user fees. At these fees the private party is unable to fully recover its costs.
- Due to the presence of large project risks the private party is unable to obtain financing on only on unacceptable terms.

2.3.82. With the help of the financial model of the PPP project the amount of government support is determined that is required for the project to be financially viable for the private party.

2.3.83. Alternative instruments to provide government support are examined, such as (insofar as relevant):

- removing part of the investment spending from the scope of the PPP agreement (this means that the government will fund these investments itself);
- contribution of land or assets on favourable conditions (i.e. below cost);
- milestone payments;
- volume-based subsidies
- debt guarantees;
- minimum income guarantees;
- tax incentives.

2.3.84. The impact of government support measures on the financing conditions is estimated (gearing, interest margins, required return to shareholders). The resulting impact on the equilibrium user fee is calculated. The most efficient form of government support is determined.

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[4] This does not exclude that some government support measures can also be used in government-pays PPP projects (for instance tax incentives for PPP projects, or the granting of the use rights of government assets below cost). The effect of the support measures is to reduce the remuneration (availability or service fee) that the private party requires from the contracting authority.

Projection of the fiscal impact of the project over its lifetime

2.3.85. With the help of the financial model a projection is made of the fiscal impact of the PPP project over its lifetime.

(a) The direct fiscal impact (availability or service fees paid by the contracting authority and direct forms of government support such as milestone payments and subsidies) can be read directly from the financial statements generated by the financial model.

(b) The potential value of the contingent liabilities (compensation for risk events, guarantees, termination payments) can be simulated with the financial model.

Assessment of the fiscal affordability of the project.

2.3.86. The projection of the fiscal impact of the PPP project over its lifetime is used as input for the assessment of the fiscal affordability of the project. This assessment is carried out by the Contracting Authority and the relevant departments within the Ministry responsible for finance. The method for the assessment of the fiscal affordability of the project is described in Annex J1 - Guidelines for the Management of Contingent Liabilities.

(10) Risk analysis

2.3.87. A risk matrix is established, containing the following columns:

- name of risk;
- description of risk;
- consequence in case the risk occurs (qualitative description);
- indication of the probability of occurrence (low/moderate/high);
- indication of the consequences on costs or revenues (low/moderate/high);
- grade of risk: product of probability and consequence.
- proposed allocation: public, private or shared;
- proposed management and mitigation measures (at least for the high-grade risks);
- additional remarks (if any).

A generic risk matrix is shown in Annex I.

2.3.88. The information for the risk matrix is collected from the other parts of the feasibility study (in particular the legal analysis, the technical analysis, the analysis of user demand, the environmental impact analysis and the social analysis). To complete the information a risk workshop may be held with key experts of the contracting authority and the consultants preparing the feasibility study.

2.3.89. Data permitting the high-grade risks should be quantified. A minimal quantification includes:

- probability of occurrence of risk;
- damage, costs or revenue loss in case a risk occurs.

This allows Contracting Authorities to calculate the expected loss and the maximum loss due to the risk.

Quantification of risks

- This quantification involves calculating the potential costs under different scenarios by making assumptions regarding the outcome of any events or variables that affect the value of the risk and calculating the cost given those assumptions.
- This could include a "worst case" scenario. For instance, for a construction cost overrun risk, this assessment could include calculating the additional costs (loss) pay-outs at different levels of cost overrun. The table below provides an example of this approach.

Scenario	Probability (A)	**Risk Impact** (B) **UGX**	Expected Loss **(UGX)** (C = A x B)
Best Case	10%	0	0
Likely Case	50%	40 mn	20 mn
Low Case	30%	60 mn	18 mn
Worst Case	10%	120 mn	12 mn
Expected Loss			**50 mn**

2.3.90. The results of the risk assessment are used as inputs in various other parts of the feasibility study, in particular the social cost-benefit analysis, the financial analysis, the PPP assessment and the assessment of government support. They are also used as input for the fiscal risk management (see Annex J1 – Guidelines for the Management Contingent Liabilities).

Common pitfalls in risk assessment

A project specific risk assessment, in which project specific sources of risk are identified and impacts are quantified, is often lacking in information and detail. Some common pitfalls are:

- Often only cost and revenue scenario is considered, ignoring the uncertainty that characterizes cost and revenue assumptions. No sensitivity analysis is carried out to acquire a more complete picture of the plausible range of cost and revenue developments.
- Risks are often allocated according to a generic, standardized allocation matrix not taking into account the project specific characteristics of the risk factors (such as likelihood, impact on cash flow, degree of control over the risk, …). Insufficient attention is given to risk experiences in real projects, and to the perception of investors and lenders about risks and guarantees and their impact on the bankability of the project.

(11) Market sounding

2.3.91. In the market sounding the degree of interest in the project from potential contractors, investors and lenders is assessed by means of interviews and surveys. A market sounding is essential to ensure a successful competitive tendering of the project.

2.3.92. The likely market interest from potential bidders and lenders for the proposed PPP project is assessed.

(a) If similar projects have recently been carried out in a PPP in Uganda, regionally or elsewhere, then these may be used as evidence of the market interest. It may be assumed that the proposed project will attract the same types of and similar number of bidders. The market analysis must demonstrate that any (limited) differences in circumstances between the reference projects and the proposed PPP project will not have a major impact on market interest.

(b) If no suitable reference projects exist, then the market interest must be ascertained by conducting project-specific market consultations of prospective bidders and of financial institutions (national and also international where relevant, i.e. in the case of large projects with sufficiently high funding requirements to be attractive for foreign lenders, or projects in sectors that are known to be of interest to foreign bidders and contractors).

(c) In the market consultations the views of investors of prospective investors on the feasibility and the risks of the project and the need for government support or guarantees are collected and assessed, as well as the views of financial institutions on their willingness to finance the project and on the potential amount of loans that may be granted to the project.

2.3.93. The feedback of the market sounding is used in several parts of the feasibility study, especially in the financial analysis (market conditions for the financing, such as required rates of return and other financial ratios) and in the value-for-money analysis (optimal structuring of PPP arrangement, without deal breakers that would discourage bidders or result in high bid prices).

2.3.94. The evidence collected in the above assessments must show will be a sufficient degree of market interest to ensure a competitive bidding process. If not, then strategies must be developed to ensure market interest for the project.

Common pitfalls in market sounding

The market consultation is too superficial and often goes not much beyond the observation of a few indications that the market is interested to invest in the project.

Common shortcomings in market consultation exercises are:

- lack of preparation (collection of background information) and lack of detail in the formulation of questions, so that the data collection has a low payoff;
- lack of assessment of the market's view on the revenue potential of the project and on the proposed business model;
- lack of assessment of the market's confidence in the capability and reliability of the contracting authority, and of the market's willingness to conclude contracts with the contracting authority;
- lack of an assessment of the market's risk perception and preferred risk allocation.

(12) Implementation and procurement plan

2.3.95. The procurement and implementation plan is part of the Feasibility Study but is to a large extent prepared by the Contracting Authority (with the help of the feasibility study consultant/Transaction Advisor and using, where relevant, inputs from the Feasibility Study Report).

2.3.96. The procurement and implementation plan must at least have the following contents:

(a) Indicative time schedule of all actions that the Contracting Authority must carry out until commissioning date/date of commercial operations, such as (illustrative and not-limitative):

- setting up the organisation of the procurement;
- advertising of the project to potential bidders (such as the organization of an investor's conference);
- various phases of the procurement procedure (pre-qualification, submission and evaluation of bids, negotiation with preferred bidder, contract close, financial close, ...);
- acquisition of the required right of way;
- audit or listing of inventories of existing assets of which the user rights will be transferred to the private party;
- preparation of applications for government support;
- obtaining of required permits and approvals.

(b) Identification of actions that need to be taken by other government entities in order to enable the implementation and exploitation of the project, including a plan of actions to obtain the required cooperation from these government entities.

(c) Outline of procurement strategy:

- selection of procurement method (open or restricted, competitive dialogue, ...);
- preferred profile of prospective bidder;
- initial view on selection and award criteria.

(d) Communication plan:

- communication needs analysis for the project;
- communication plan across multiple stakeholders to address the identified communications needs (communication messages and tools).

Feasibility Study Report

2.3.97. The approach, inputs and findings of the Feasibility Study are described in the Feasibility Study Report, which is submitted to the Contracting Authority.

2.3.98. The Feasibility Study Report has the following structure:

Executive Summary

Introduction *(project background and objectives)*

(1) Demand study

(2) Technical study

(3) Social impact assessment

(4) Environmental impact assessment

(5) Legal analysis

(6) Economic assessment

(7) Financial analysis

(8) PPP/Value-for-money assessment

(9) Fiscal affordability assessment

(10) Risk analysis

(11) Market sounding

(12) Implementation and Procurement Plan

Conclusions *(summary of feasibility assessment and recommendations on procurement and implementation of the project)*

2.3.99. The Feasibility Study Report constitutes the basis for the project approval decision by the Contracting Authority and the PPP Committee.

3. PPP Project Assessment Report Template

(1) Review data

Reviewed project	Name of project that is reviewed
Contact person of review team	Name of contact person Telephone number and e-mail address
Date of review	Date of issuing of review report

(2) Summary conclusions of the review

Completeness and quality of the feasibility study report

- Shortcomings of the feasibility study (missing documents, computation errors, use of inappropriate study methods, insufficient data, ...)
- Changes that need to be made in order to bring the Feasibility Study up to the required standards specified in Chapter 2 of this Annex.

Feasibility of project

- Overall conclusion regarding the feasibility and desirability of undertaking the project as a PPP
- Recommendation whether or not to approve the project
- Main findings by section of the feasibility study

(3) Project and contracting authority information

Project	Name of project
Date of submission of feasibility study report	Date on which the feasibility study report has been submitted to the PPP Unit
Contracting authority	Name of contracting authority
Contact person	Name and function of contact person of contracting authority
Address	Address of contracting authority
Telephone number	Telephone number of contact person of contracting authority
E-mail address	E-mail address of contact person of contracting authority

(4) Documents of feasibility study report

No	Title of document or file	Reference number *(if available)*	Date of document	Physical form (paper, digital)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
…				

(5) Completeness and quality check

No	Section of feasibility study	Included (yes/no)	Remarks on quality of document*
1	Demand study		
2	Technical study		
3	Environmental impact assessment		
4	Social impact assessment		
5	Legal analysis		
6	Economic assessment		
7	Financial analysis		
8	PPP/Value-for-money analysis		
9	Fiscal affordability assessment		
10	Risk analysis		
11	Market sounding findings		
12	Procurement and implementation plan		

** missing documents, shortcomings of the analysis (computation errors, use of inappropriate study methods; lack of project specific data, …), changes that must be made to comply with the feasibility-study requirements, …*

(6) Feasibility review findings

1. Demand study

Conclusions with respect to project feasibility

2. Technical study

Conclusions with respect to project feasibility

3. Environmental impact analysis

Conclusions with respect to project feasibility

4. Social impact analysis
Conclusions with respect to project feasibility

5. Legal analysis
Conclusions with respect to project feasibility

6. Economic assessment
Conclusions with respect to project feasibility

7. Financial analysis
Conclusions with respect to project feasibility

8. PPP/Value-for-money analysis
Conclusions with respect to project feasibility

9.Fiscal affordability assessment
Conclusions with respect to project feasibility

10. Risk analysis
Conclusions with respect to project feasibility

11. Findings of market sounding
Conclusions with respect to project feasibility

12. Procurement and implementation plan
Conclusions with respect to project feasibility

(7) Conclusion – PPP project assessment

Summary of project feasibility assessment
Recommendation whether to approve project as a PPP.