



# PUBLIC-PRIVATE PARTNERSHIP MANUAL

## *PHASE 2*

### Feasibility Study Appraisal



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**Abbreviations**

AoE	analysis of efficiency
AoE body	authority responsible for analysis of efficiency
CAPEX	capital expenditure
CEA	Cost-benefit analysis
CMU	Cabinet of Ministries of Ukraine
DSCR	debt service coverage ratio
EIA	Environmental Impact Assessment
FIRR	financial internal rate of return
FS	feasibility study
GDP	gross domestic product
GoU	Government of Ukraine
KPIs	key performance indicators
LoC	Law on Concession
LMs	line ministries
MDETA	Ministry for Development of Economy, Trade, and Agriculture of Ukraine
MoF	Ministry of Finance of Ukraine
MDBs	multilateral development banks
NPV	net present value
OPEX	operating expenditures
PMT	Project Management team
PSC	public sector comparator
SPV	special purpose vehicle

USP	unsolicited proposal
UK	United Kingdom
VGF	viability gap funding
WACC	weighted average cost of capital
WBG	World Bank Group

## Scope of the PPP Manual: Phase 2

This is the second of four manuals on preparing, procuring, and managing PPP projects.

This manual succeeds in order the manual covering Phase 1 on PPP project concept note development and evaluation and should be applied after the concept note of a PPP project is approved by the relevant authorities. The information in this manual also applies for unsolicited proposals (USPs).

The Phase 2 feasibility/efficiency analysis allows public authorities to comprehensively assess the feasibility and viability of the approved concept document of the PPP project through a detailed feasibility assessment. The feasibility assessment enables the authorities to understand the project's sustainability (covering technical, economic, social, financial, institutional, regulatory, and environmental aspects), incorporate appropriate modifications, if necessary, and assess and better manage the risks involved through adequate risk sharing and mitigation measures.

The analysis of efficiency (AoE), another important component of the project appraisal, aims to evaluate the efficiency of implementing the project using the PPP mechanism. It is undertaken by the future (potential) public partner based on the results of the feasibility study and concludes in a decision on whether PPP implementation should be adopted. This conclusion must be submitted for approval to Ukraine's Ministry of Development of Economy, Trade, and Agriculture (MDETA), which as part of its process sends the feasibility study and conclusion to the Ministry of Finance for fiscal risks evaluation as well as to other relevant institutions.

Following the completion of the work outlined in this Manual, and if the decision on PPP implementation is adopted (at the end of the AoE process), the procuring authorities should then turn to the Manual for Phase 3: Selection of the Private Partner, which covers the process of establishing the tender committee, drafting tender documents, procuring the PPP project, and finally awarding the PPP agreement.

The process of developing a feasibility study and conducting the efficiency analysis involves a number of tasks, which are discussed in detail in this Manual. While all the tasks are important, they need not be implemented in any particular sequence or in the in which they are order presented here. Some tasks can and should be implemented concurrently.

## 1 Establishing the public authority's PPP Project Management team

### ***Defining the Project Management team***

The first task in developing the PPP proposal feasibility study is to organize the Project Management team that will be responsible for overseeing the completion of the study. It is a common practice in awarding a PPP contract for this team to also be responsible for managing the Phase 3 tasks of procurement, award, and negotiation of the PPP contract.



Depending on the complexity and nature of the project, the Project Management team should comprise no more than three or four government officials within the public authority who also participated in development of the project's concept note (Phase 1). The Project Management team can also be supported by advisors (see below the section on procuring advisors) or independent experts. In accordance with the Law on Concessions (LoC), advisors are mandatory for preparing PPP proposals (concept note and feasibility study) for projects with costs (investments)<sup>1</sup> of more than UAH 250 million (approximately, US\$9 million).<sup>2</sup>

The members of the Project Management team, collectively, should possess a good mix of expertise/specializations from various fields, including legal/institutional, technical, financial, and environmental/social, and suitable general knowledge of PPPs as well as general project management experience; these skills are needed to exhaustively consider all possible aspects of a PPP project and to review, oversee, and manage the specialized inputs that will be received from external advisors engaged for each PPP project issue area. Project Management team members must be able to discuss, question, and where necessary challenge the PPP analyses and findings the advisors provide. Box 1 presents the five main groups of abilities necessary for the feasibility process and can guide the selection of the required team members.

**Box 1. Capabilities to conduct feasibility study**

1. Technical:
  - In charge of the project's design, with expertise in the type of infrastructure that is the subject of the contract.
  - Expertise in the technical aspects of the services involved.
2. Environmental
  - In charge of environmental impacts; should provide relevant expertise/ experience in environmental analysis.
3. Economic:
  - Expertise in economic feasibility, preferably in the same sector or service type.
4. Financial:
  - Expertise in financial analysis in the field of user-paid (concessions) or government-paid PPPs, preferably in the same sector/infrastructure or service type, and also knowledge of financing similar PPP projects (when government needs to develop a bankable structure).
  - Expertise in contract risk structuring and payment mechanisms, preferably in the same sector or service type.
5. Legal
  - Expertise in public law/ administrative framework.
  - Experience in drafting PPP contracts. Although the PPP contract will not be drafted until a later phase, knowledge of PPP contracts will be necessary to properly assess the existing legal framework. For a PPP covering existing operations, legal due diligence will include looking at existing contracts, legal actions, loan contracts, etc.

1. The value of the assets subject to PPP/concession exceeds UAH 250 million, which is confirmed by the financial statements for the last reporting year or the results of the evaluation carried out in the manner prescribed by law on evaluation of property, property rights, and evaluation activities and if the expected value of the newly created (newly built) PPP/concession facility exceeds UAH 250 million.

2. Currency rate 1 US\$ = UAH 28.265 (on October 25, 2020).

Specific decisions also need to be made with regard to the review and oversight tasks to be completed internally by the Project Management team and the steps to be completed by experienced, outside PPP advisors (see below the section on procuring advisors). If some areas of specialized skills are available among the Project Management team members, those individuals should be included in the work plan (see the section below).

Forming a Project Management team is quite straightforward when a single public authority is responsible for the asset. However, should more than one authority be party to the PPP/concession contract (such as municipalities, publicly owned enterprises, ministries, etc.), a prior agreement and confirmation on the institutional arrangement is required, including establishing whether there should be a new single public entity or some other arrangement made that allows the team to award and sign the PPP contract. The confirmed form of interaction and relationship between multiple grantors is one of the requirements to for concluding the AoE.

### ***Appointing the Project Manager***

According to the good international practice, the Project Management team should be chaired by the Project Manager. Such person will also be a regular coordinator and point of contact for the project between the public authority, the MDETA, the Ministry of Finance, and other concerned agencies or organizations; the Project Manager will also report to the public authority. The Project Manager needs to be experienced in managing and coordinating the planning and implementation of similar-sized investment projects; in coordinating the decision-making for public projects; and in overseeing, reviewing, and managing inputs from external advisors from technical, financial, legal, and other specialties. The Project Manager's position need not be full-time for a particular PPP project, but the appointed official should be given enough time to manage and coordinate the regular functions and activities of the Project Management team according to the implementation plan requirements (see task 2).

Box 2 lists suggested capabilities and skills that a Project Manager should possess based on a good international practice.

#### **Box 2. Capabilities and skills of a Project Manager**

##### **The Project Manager must be capable of a high-level performance in the following roles:**

- Ensuring all studies from the different fields of expertise are developed in a coordinated manner and meet government requirements.
- Controlling and overseeing the results of the studies.
- Ensuring coordination between the project's team of advisors (external) and the procuring authority.
- Managing the decision-making process of the public sector with a view to obtaining decisions in a reasonable timeframe.
- Leading communication with key stakeholders, including senior management of the procuring authority and the central agencies

##### **The Project Manager should have the following skills:**

- Solid interpersonal skills, ability to direct and coordinate people, and ability to communicate.
- Ability to solve complex problems.
- Administrative skills for planning, organizing, overseeing, and coordinating work (skills of a good team manager).
- Attention to detail.
- Strong influencing, stakeholder management, and decision-making skills.
- Strategic thinking skills.
- The ability to work to tight timeframes under pressure.

### ***Creating a work plan***

The Project Management team should program the work to be done to fully appraise and structure the project, including a timetable with the whole process plan for developing the feasibility study and a set of key milestones and deadlines. It is important that the plan also note how and when the team will meet to review progress and issues and especially how it will make clear and timely decisions.

The work plan should note the areas of specialized skills available among the Project Management team. A deadline should be proposed for completing each task/areas of assessment. When possible, brief comments should be included to explain or describe whether a specific step is likely to be especially challenging, by noting, for example, whether it will require lengthy data-retrieval and gathering, communications and inputs from external stakeholders, any special approvals, or an especially long time to complete.

To develop a comprehensive work plan, it is recommended that the Project Management team (PMT) members read and understand all tasks presented in this Manual.

### ***Determining the Project Management budget***

Last, but not the least, it is also important to estimate the Project Management budget required to complete the feasibility study, including all internal costs, expenses related to all necessary research and investigations, and to the costs for external support or advisors in each of the relevant areas.

Identify the source of funds for the Project Management budget, including the own budget allocations of the initiator of PPP proposal preparation or external sources like MDBs through their project preparation facilities, or other international development funds.

### ***Procuring advisors***

If the project costs (investments) will be more than UAH 250 million (approximately US\$9 million) it is mandatory to attract advisors to prepare the concept note and feasibility study, in accordance with the

Law on Concessions in Ukraine (for concessions) and the CMU Decree No. 384 from April 11, 2011 (for non-concession PPPs).

The plan for the procurement of advisors should include the following:

1. Prepare terms of reference to select advisors. Refer to the Procuring Advisors decree.<sup>3</sup>
2. Decide whether consultants will be procured as a group under a single contract or whether each discipline (such as financial, legal, and technical) will be procured separately under an individual contract. Also determine whether consultants will be procured under one single contract covering all processes up to contract execution the contracts will be staged.

The Project Manager will be responsible for managing the advisory services contract and constantly monitor and supervise the advisor(s), with assistance from the PPP agency, to ensure that outputs are delivered satisfactorily (in terms of quality) and on time.

The PMT will be the primary avenue for the advisor to present its outputs, conduct consultations, and flag project-related concerns to the public authority. To ensure close monitoring and management of the project development process, the PMT is expected to closely work with the advisors and to coordinate and consult regularly with the MDETA and the Ministry of Finance to discuss and resolve project issues.

Better results and more efficient management of the overall PPP project process can be achieved by using experienced PPP advisors to prepare the PPP feasibility analyses. International experience has shown that public authorities in countries such as the United Kingdom, Australia, many European Union members, South Africa, and elsewhere, which have been actively implementing PPPs for the past 15 to 20 years and which could complete most of these PPP feasibility study tasks internally, still prefer to retain experienced, external PPP analysts and consultants through performance-based contracts to manage large, time-sensitive, and “lumpy” workloads.

## 2 Technical feasibility

The technical feasibility of the project must be analyzed according to the technical requirements, reference design, and costs. At the end of this task, with the PMT will have a preliminary design that allows for a proper cost estimate that can be adjusted to risk to feed into the financial feasibility assessment.

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3. CMU Decree No. 950, October 9, 2020.

### 2.1. *Reference design*

Based on the project concept note identified in Phase 1, a reference design is being prepared. The reference design represents one possible design solution that delivers the project solution. It is intended to further develop the project team's understanding of the design issues associated with the project.

The reference design serves as a basis for determining the materials and their detailed estimates of quantities (the number of lane-kilometers of a specific pavement strength and durability for a road, the length for tunnels, track and station platforms for a metro rail project). These estimates provide a basis on which the cost estimates can be developed and consequently the economic and financial appraisal. The project design and construction requirements are among the most important inputs to the feasibility analysis.

For social infrastructure PPPs, such as hospitals or schools, the PMT should generally commence by preparing a functional brief, which typically sets out:

- The services that will be provided within the facility (for example, assessing emergency patients and surgery, among other services within a hospital).
- The functional areas required to deliver those services (for example, an emergency department for assessing emergency patients; operating theaters for performing surgery).
- The functional relationships between the different elements of the design (for example, the need for connectivity between the emergency department and operating theaters so emergency patients requiring urgent surgery can be efficiently transferred to the operating theaters).

The PMT, with input from its technical advisers, should then develop a reference design based on that functional brief.

The level of detail developed in a design can depend on project needs. The more complex the design issues associated with the project, the more detail the initiator of PPP proposal preparation should incorporate in the reference design to clarify those issues. For example, if the project is a highway in a rural area with flexibility in the precise route to be taken and simple interchanges with existing roads, the initiator of PPP proposal preparation may only need a basic reference design; whereas for an underground metro rail system in a high-density urban environment, the initiator of PPP proposal preparation should undertake more detailed design work so that it will have a good understanding of the costs and risks associated with such challenges as tunneling beneath an existing city and constructing stations in areas that are already highly developed.

The PMT should develop a set of construction requirements based on the project design. These requirements should include the maximum construction term and the required operational date, and any mandatory or minimum requirements that must be met with respect to construction.

## 2.2. Technical requirements

The technical requirements are output specifications and performance standards that should describe in general terms the project's required services to successfully meet its goals. Output levels of service and performance standards must be clear, measurable, enforceable, and provide a solid foundation for the overall analysis, preparation, and risk-structuring the project as a PPP. Outputs are often quite difficult to define and specify, as they differ very much from the traditional input-based paradigm and management approach that Ukraine's public authorities have been relying on for decades for nearly all regular public investment procurements. Moreover, if PPP projects run into problems later on during their implementation, it is often due to performance standards that are either unclear, not measurable, based more on dictated inputs than on measured outputs, or inappropriate to the objectives of the project as a PPP. This can lead to significant delays as output standards then need to be substantially revised and many PPP feasibility study analyses repeated and updated.

### a. Output specifications of the project asset

Output specifications are the major technical components/characteristics and scope of the PPP project, including both its core and any required ancillary or supporting services in the form of a verifiable preliminary output, as opposed to input, specifications. The major categories of output service specifications for many typical PPP projects often include:

- *Required capacity.* The volume of production or number of end users that the project must be available to serve. This is often measured as both:
  - Minimum dimensions
  - Functional specifications
- *Technical quality standards.* This varies greatly from sector to sector, and each sector has its own specialized technical measures for the minimum quality of their services (for example, transportation, energy, water and wastewater, public facilities, information and communications technologies, etc.)
- *Timing.* Any required deadlines for when the project's services must commence and the duration of their availability.
- *Reliability levels.* The percentage of time that the project's service and output must be available. This should allow reasonable outages for required scheduled maintenance to ensure project sustainability. This should also include any maximum wait times for end users to receive their services

These outputs specifications must be specified for each element of the project assets. The specifications must be expressed in measurable terms, so that compliance can be verified. The estimated timetable for construction work and for providing equipment must also be indicated.

These requirements will be transformed into contractual requirements at a later stage of the PPP project development.

### b. Performance standards

Within each of the technical components of the PPP project identified above, the Project Management team should draft standards for the project's overall output performance. The minimum performance standards and specifications can be organized according to the following general categories:

- I. *Capacity and demand requirements.* This involves specifying the number of users or the volume demand for services that the project would need to meet. For example, for most road PPPs, output levels of service require that the road be able to handle both peak hour numbers of vehicles (as well as minimum traffic speeds) and average daily traffic levels. Water, energy, waste management, and other sectors must provide measurements of project capacity and volume.
- II. *Technical quality standards.* Each sector of infrastructure and public services features its own sector-specific measures of quality of service.
- III. *Industry standards.* For each sector, industry standards should be researched, assessed, and identified. Advisors hired by the PMT should have been selected in part based on their proven, prior experience in the specific sector and their familiarity with its appropriate technical quality standards.
- IV. *Operations and Maintenance standards.* Clear output-performance standards, especially minimum reliability and availability standards, should provide a clear financial incentive to the private partners to meet the PPP project's facilities and equipment standards for regular maintenance (such as those set by the original equipment manufacturer's recommendations). It should be noted that maintenance is typically treated as an input to be determined by the private partner rather than an output required by the PPP contract.
  - a. *Reliability.* What is the minimum level of operational reliability at which the new project should function? For example, for some key public services, it is not uncommon to require that PPPs provide 99 percent levels of guaranteed reliability (especially ICT and data services projects). Many PPP contracts include maximum wait times for end users to receive the services supplied by the private partner.
  - b. *Appearance, cleanliness, and other standards.* Specifying clear and measurable standards for the appearance and cleanliness of a new public facility is difficult to prescribe in practice. In general, such issues can be addressed by requiring standards such as, "ensure that the facility is clean enough, when in use, to provide a safe, hygienic, environment and a positive image."
  - c. *Timeliness.* Estimate the minimum time requirements the project must meet. For example, a new PPP project might require that the service provider must deliver its services to end users within a specific number of minutes, hours, or days from the official submission of a request.
- V. *Monitoring system for measuring the performance indicators.* A standard is needed for preliminary requirements for effective performance evaluation system during the life of the contract. The outputs that the public authority proposes should be monitored through key performance indicators in the PPP contract, which should indicate the outputs that will be linked to payments through adjustments/abatements or penalties.

### 2.3. Cost estimates

Estimated costs are a central output of the design of the technical requirements. This data is used to feed the financial model, after proper risk adjustments, and the economic analysis. Based on the project design, the construction requirements, and the service requirements, the PMT should develop three sets of cost estimates at this stage:

- Initial capital costs and their distribution in time
- Capital expenditure over the life of the project (renewals and reinvestments, sometimes referred to as lifecycle costs)
- Ordinary operational and maintenance costs during the lifetime of the project

The cost estimates must be well-documented and prepared according to good industry practice. Sources on which the estimates were based must be referenced and calculations clearly explained. If suitable reference projects exist, the costs of the reference projects may be used to estimate the costs of the present project. 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 the reference design.

The costs must be adjusted for risk and take into account the specific characteristics of the project, such as a remote location, difficult site conditions, or local availability of inputs (human resources, raw materials, support services, etc.). The cost estimates should have uncertainty margins of at most  $\pm 30\%$  and must include allocations for project-specific (construction) risks.

#### Box 3. Common pitfalls in cost estimation

- Costing methods are unclear, resulting in unreliable cost estimates.
- Unit prices are undocumented, so 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.

Taking into consideration the project design, and construction and service requirements, the PMT should assess the technical feasibility of the project and identify and describe:

- Any technical complexity regarding the means and methods necessary to deliver the project
- Any requirement for the introduction of new technology to deliver the project

The PMT should document the evidence or reasons why it considers prospective bidders will be able to meet these challenges. If there is doubt as to whether bidders will be able to meet these challenges, the



PMT should identify this as a risk that may result in limited competition or in the winning bidder being unable to fully meet the project requirements.

### 3. Demand analysis

The demand analysis forecasts the volume of service (initial volume and growth rate) that the public partner or end users will need from the project over its entire economic life (such as 20 to 30 years). This demand forecast gives a very important indication of how large the project must be in terms of its design capacity to adequately meet projected demand. This demand forecast will also indicate whether, when, and what size any additional expansions to the project's capacity might be required over the life of the project to adequately meet future demand.

Demand forecasts also refer to 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 must be determined.

In analyzing the demand for an infrastructure service, the following important steps should be followed:

- I. Define the demand forecast in the most likely scenario (base case) and include pessimistic and optimistic scenarios. Describe the assumptions used for each scenario and briefly explain the reasons for selecting the assumptions of each scenario.
- II. List and describe any relevant and significant specific risks to demand for the project, such as a single source of input supply, risk of future competition, new technologies, etc.
- III. Decide and briefly explain who would likely be able to best manage the project's demand risks: the public partner or the private partner.
- IV. In user-pay PPPs (concessions), the detailed estimates of demand should include traffic and revenue analysis (in case of transportation projects, for example), regardless of whether the public partner will retain the revenue generated or assign it to the private party in the PPP.

It is important for public authorities (the initiator of PPP proposal preparation) to understand how critical the output of the demand analysis will be for several subsequent PPP feasibility assessment tasks. It will ultimately help determine the size, possible structure, and viability of the whole project as a PPP. This forecast of demand determines:

- I. *Technical feasibility.* The demand analysis will be an essential input for the technical requirements, i.e., the capacity of the infrastructure required to accommodate the future demand and thus the cost estimates:
  - a. The size of the project and therefore the capital costs of its construction and start-up
  - b. The size and maintenance of the operations and the periodic renewal costs to sustain the project over its entire economic life

- II. *Economic feasibility.* The size of the economic and social benefits the project can provide to the local economy.
- III. *Affordability and government support.* The size of any public sector supports or risk-sharing in the PPP project by the public partner in order to realize these net economic benefits from the project.
- IV. *Value for money.* Whether or not the specific project's demand risks can be best managed by the public partner, by the private partner, or should be shared between the two.

International experience has shown that in practice demand forecasts, such as for toll roads, often exhibit an optimism bias. For user-pay PPPs (concessions), if the demand forecast shows significant variability and “risk” of changes in demand due to other factors, such as changes in the economic growth rate, inflation rates, foreign exchange rate fluctuations, fuel price changes, single large-customer exposure, etc., these risks should be examined in more detail. In these cases, demand risks may need to be mitigated through additional supports from the public partner, like sharing demand risks through minimum revenue guarantees. Such limited guarantees from the public sector will add to the total cost of the PPP project to the public sector, and this will require the project's affordability analysis to be updated and reconfirmed.

## 4. Economic feasibility

For many public investment projects, economic analyses may already have been completed prior to their consideration as candidates for PPPs. In these cases, this step will involve reviewing and updating these existing economic analyses rather starting and completing new economic studies. The Phase 1 manual contains instructions on how to conduct an economic analysis using a cost-benefit analysis (CBA) methodology.<sup>4</sup>

The major steps of an economic feasibility analysis<sup>5</sup> include:

- I. *Identifying the economic costs of the proposed PPP projects* (expressed in constant price level). Most of these will be similar to the financial project cost items, except project taxes and government subsidies (if any), which should be excluded from the economic cost items, and nonfinancial costs, such as externalities. (The difference between the economic costs and financial costs is also discussed in Phase 1 Manual.) One approaches to determining costs is a comparison with the “do nothing” alternative; this means that only costs that occur in the project but not in the “do nothing” alternative

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4. It assesses the social cost-benefit equation, in which the benefits for society must be higher than the costs to the public for the project to be worthy of proceeding.

5. The cost and benefit estimates must be documented and explained. The sources of cost and benefit data should be indicated, with assumptions and calculations explained. The explanation of the cost estimates may refer to the cost estimates in the technical study. Important costs and benefits for which no reliable quantitative estimates can be made (for lack of data or calculation models) may be described in qualitative terms, so decision makers can take them into account.

are considered. The second approach is to measure the costs by their economic value or opportunity cost. These costs include:

- Costs of the construction or acquisition of the assets
- Costs of mitigating and compensating measures
- Loss of present function of the land to be occupied by the project (the land acquisition costs may be used as a proxy)
- Maintenance and operating costs
- Any other costs that are caused by the project

- II. *Calculating the value of project's economic costs by multiplying the economic cost items (which have been selected from financial cost items) with relevant conversion factors.* This economic cost is the actual cost that will be borne by Ukraine's economy as a whole, excluding government interventions and market distortions. This may, for instance, be the case for unskilled labor (shadow wage factor) and imported goods valued at border prices (shadow exchange rate factor).
- III. *Calculating the net economic benefits of the proposed PPP project.* Unlike economic costs, the economic benefits for infrastructure projects are quite different from the financial benefits. 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. For example, a new road development could generate economic benefits in the form of fuel savings and reduced car maintenance requirements as well as time savings for both the new road and alternative road users.
- IV. *Assessing the economic feasibility.* The CBA calculates the net present value of the stream of costs and benefits during the lifetime of the project; it is expressed in economic net present value or ENPV. Future costs and benefits may be converted into their present value using the social discount rate. 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). The internal rate of return of the stream of net benefits (benefits less costs) may be calculated (economic internal rate of return or EIRR). The EIRR of the preferred alternative should exceed the social discount rate (otherwise the "do nothing" alternative is the preferred alternative). However, the EIRR should not be used for ranking alternatives. It is possible that the alternative with the highest ENPV differs from the alternative with the highest EIRR. In that case, the ENPV criterion yields the correct ranking.
- V. *Sensitivity analysis.* A sensitivity analysis should be conducted to assess the effect of (i) uncertainty about important assumptions in the calculation of costs and benefits, and (ii) project risks (refer to the section on risk analysis below) on the economic feasibility of the project. The usual sensitivity tests include:
  - Increase of costs by the uncertainty margin of the costs estimate (usually around 20 percent)
  - Low demand scenario
  - Any important project risks that have been identified in other parts of the feasibility study (for instance delay of the project implementation due to permitting procedures)

## 5. Financial Feasibility

Financial feasibility analysis for a PPP project estimates the total costs of the project as a PPP and then identifies the likely range of tariffs, fees, payments for provided services, and revenues that will be required to recover all of these costs for the project to be financially viable as a PPP and offer adequate returns on the investor's capital.

The purpose of the financial feasibility exercise differs depending on the basic model for the private partner's revenue model of the project. Models include:

- In user-pay PPPs (concessions) or hybrid payment mechanism projects (combined with government payments), the focus of the analysis is on evaluating the existence of a financial surplus for the private sector after covering the current costs, the capability of such free cash flow to service debt and equity to fund the capital expenditure needs, and (if desired by the government) the ability of the SPV to pay a concession fee to the government.
- In government-pay PPPs the financial feasibility exercise estimates the amount of public resources that will make the project commercially feasible. Different alternatives for government support should be considered, including direct government payments to the project company. In projects that do not include user charges in the revenue mix, such government contributions are directly estimated.
- A final model involves other commercial revenue (such as parking and restaurant/cafe revenues in a hospital, service station revenues in a road project, rental revenues for retail premises in a metro station etc.).

### 5.1. *Define the project's cost estimates*

These cost estimates must include regular operations and maintenance costs, periodic costs of asset replacements and renewals, debt service payments, and a realistic, expected return on the private partner's equity investment over the life of the PPP contract.

### 5.2. *Define payment mechanisms*

It is important to identify the form of compensation payable to the private party. This will largely depend on the nature of the project, the sector, government (municipality) objectives, the risk structure assumed by the project, the availability of government support, and the revenue generating potential of the project, including its affordability and end users' willingness to pay for the infrastructure asset and/or service.

If it is a government-pays PPP or material service payments are needed to complement user revenues, the PMT should describe the basis of the payment mechanism (volume versus quality or availability) and the basics of the structure of the payment mechanism, including:

- The main components of the payment mechanism if it is segmented (e.g., segmented by relevance of areas in a social infrastructure or by road sections in a road)

- The main key performance indicators proposed, the applicable rectification periods, ratchet mechanisms, and the method for monitoring (i.e., whether mostly based on self-reporting).

#### Box 4. Availability payments

Some PPP projects are funded wholly or primarily through user payments. This is most common in economic infrastructure sectors, such as transport. Other PPP projects are funded wholly or primarily through government payments. This is the case in most social infrastructure projects, such as hospitals, while it may be also be the case in some economic infrastructure projects where user payments may be insufficient to cover all costs (notably in rail transportation, toll free roads, and water), or where the public partner identifies value for money, risk, policy, or practical reasons why users should not directly pay the private party.

Where the government pays, the contract must provide a payment regime (known as the payment mechanism), which is usually based on availability and/or quality or on volume or use.

If the level of infrastructure use is not in itself an objective of the public partner or cannot be significantly influenced by the private party, but it is still paramount that the asset be available for use by the final users, then payment should be based on the availability of the infrastructure and the services provided by the private party. An example is a school that will be designed, built, financed, and maintained by the private party but operated by the public partner, which will provide the teaching staff. In this project, the private party cannot significantly influence the number of students or classes at the school, but the public partner requires that the school be available when needed. The payment mechanism should therefore be based on the availability of the classrooms and other school areas for use by the public partner's teaching staff.

Under an availability payment mechanism, payments are generally linked to both physical availability (that is, can the asset be used effectively) and to the condition of the asset (for example, is the temperature of a room between certain prescribed limits, or is a section of road free from dangerous obstacles). If part of the asset is not available in the required condition, deductions can be made from the payments. Each situation can result in different payment deductions.

The payment mechanism may also be linked to the quality of the services provided by the private partner. Generally speaking, the quality requirements relate to aspects of the project that are not regarded as critical for the purpose of the asset, for example, the cleanliness of the waiting room in a hospital as opposed to the cleanliness of the operating theater.

Some payment mechanisms are based on volume (for example, the number of vehicles using a road, the volume of water treated to specified standards by a wastewater treatment plant) rather than availability. The payments may also be linked to quality by means of penalties or liquidated damages. Volume-based payments will introduce demand or volume risk to the risk structure. This should only be considered by the public partner when interests clearly align (that is, the public partner is interested

in higher demand or higher volume; for example, in urban public transport) and when the traffic or volume risk is low enough that it can be assessed and managed by the private partner.

The payment mechanism design will generally include definitions of the following items:

- The basic structure of the payment mechanism, i.e., whether the payment will be segmented in sections (in a road), or areas/spaces (typically in social infrastructure), including:
  - The availability criteria
  - The weighting of the segments or areas and the availability criteria
- The performance standards, the key performance indicators (KPIs), and how they will be linked to calculation of abatements or deductions
- The maximum level of deductions (if a limit for deductions is appropriate) that can be imposed on the private partner

Other features of the payment calculation include time weighting factors or ratchet mechanisms for continuous or repeated unavailability. Time weighting factors vary the amount of payment deductions depending on the time at which the unavailability occurs. For example, in a road project the deductions might be higher in peak hours than at other times. Ratchet mechanisms increase the severity of payment deductions if unavailability continues for more than a particular time or if there are repeated episodes of unavailability. Details to be specified include:

- Regarding the payment indexation method, how will the payment amount be adjusted over the contract term?
- When is the first payment due or when does the payment period commence?
- What invoice and payment settlement process and payment timing will be used?
- For the monitoring regime and reporting requirements, what should be monitored? What reports should the private party send and when?

### 5.3. *Identify if a viability gap exists*

On the basis of financial assessment conducted up to this point, the PMT should indicate when appropriate whether the project is likely to be self-sustaining (that is, revenues will exceed total project costs) or whether a viability gap is likely. If a viability gap exists, the PMT should propose a mechanism to fill it with any available financial support from the government, including co-financing if needed or regarded as appropriate (see Box 5) as well as other potential financial support mechanisms, such as public loans, public equity, specific guarantees, or de-risking techniques.

The analysis and subsequent report should show the results of each option and provide a recommendation and justification of the best way to proceed, including a preliminary recommendation of a ceiling value for the driver or drivers that will be subject to offer by the bidders (i.e., the maximum amount to be requested upfront by bidders in their proposals).

**Box 5. Viability gap funding**

Viability gap funding (VGF) is meant to inject financing into the project structure to fill a potential gap in user-pays projects, as well as to increase affordability or increase commercial feasibility of a project when doubts arise about the availability of market financing due to the project's size or other features.

Viability gap funding may be in the form of a grant (i.e., funds provided by the government that are non-reimbursable by the private party) or reimbursable finance (e.g., a public loan provided by a public financial agency or public equity provided by the public partner or by a strategic investment fund).

When a user-pays project has a viability gap, the public partner should consider whether it is more appropriate to fill the gap through complementary budgetary payments that will be paid on a periodic basis once the project is operational (and which will be described in the revenue regime/model analysis) or by filling the gap with co-financing. In some projects, a combination of complementary budgetary payments and co-financing may be appropriate.

When the intention is to support bankability or commercial feasibility of a project with a high risk profile or other obstacles or uncertainties that affect bankability, the public partner should also analyze options to derisk the project (such as by providing direct guarantees to lenders, fixed and irrevocable deferred payments, or limits on deductions in availability payments) in addition to or in combination with viability gap funding.

**Interdependency of financial feasibility with other feasibility study assessments**

The financial feasibility assessment is closely linked with the affordability analysis. The estimated PPP revenue requirement is compared with the affordability analysis to determine if the project is within the affordable range for the public partner; if not, the project may need to be reduced in size or scope to fall within that limit. Without this analysis, public authorities may expect unrealistically low prices from bidders when they approve a PPP to proceed to tender. This analysis will also indicate when a project is not financially viable at a given per-unit price or revenue level, in which case the public authority may need to consider either changing the scope of the proposed project or offering additional public supports and credit enhancements.

The financial feasibility assessment will need to be updated when the environmental and social analysis is completed, as the costs of any new environmental and social impact remediation efforts will need to be included as costs in the PPP financial feasibility study.

The cash flow projections are also partly used to construct the cost benefit analysis (CBA) model.

#### 5.4. Define the most appropriate contract term

One of the purposes of the financial feasibility exercise is to define the most appropriate contract term (maximum duration of the concession), which will depend on term limits as per legislation, financial market restrictions, and value for money and affordability, among other things. When a project is included in a specific program or sectoral pipeline, the contract term should be consistent across all projects unless there are relevant changes in the context or circumstances (e.g., changes in financial market conditions).

In the United Kingdom, for example, the public partner or utility is required to estimate the duration on the basis of the works or services requested. For concession contracts lasting more than five years, the maximum duration of the concession contract cannot exceed the time that a concessionaire could reasonably be expected to take to recoup the investments made in operating the works or services, together with a return on invested capital, taking into account the investments required to achieve the specific contractual objectives. Finally, the investments taken into account for the purposes of calculating the time period referred to above must include both initial investments and investments during the life of the concession contract.<sup>6</sup>

#### 5.5. Developing project cash flows using the PPP financial feasibility model<sup>7</sup>

*Note: The financial model referred to here is the financial model constructed by the initiator of PPP proposal preparation to estimate viability and/or the public expenditure/budgetary support needed (including estimates of the level of guarantee required in self-sustaining toll projects) and to define the financial structure (from the public perspective). This model tool will be used with some adaptations (including using different probability scenarios) for other financial assessment exercises such as VfM and affordability analysis. The base case is generally the set of financial projections that reflect the most likely case and, as such, may be regarded as an estimate of projections likely to be made by prospective bidders. For that reason, the base case may be also regarded as the “shadow bid” case. This should not be confused with the successful bidder financial model, as it is the responsibility of the bidder to construct its own financial model, which is most frequently the basis of the financial model attached to the contract after appropriate audit by an independent expert. However, it is good practice to include in the RFP the minimum requirements and guidelines to be respected by bidders when constructing and submitting their financial models and projections (the bidder’s case).*

Using a financial model, the PMT will develop a set of cash flow projections and a business plan that offer a commercially feasibility opportunity for bidders and can be used as elements for other project assessments. Financial analysis is an iterative exercise. Depending on the financial nature of the project (whether it is a self-sustaining, user-pays project (concession), has a viability gap, or is a government-pays project (PPP)), there will be one or another open variable, such as the amount to be paid by the bidder as a concession fee or the payment that will be requested by the bidder. The analysis will identify the value

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6. The Concession Contracts Regulation (2016), Art. 18. Accessed on [legislation.gov.uk](http://legislation.gov.uk).

7. In practice, external PPP advisors are asked to present their models and to demonstrate to the PMT how the model is designed and how it functions and to interpret the meaning of the key results.



of the respective value driver that enables the private partner to meet the target financial key performance indicators (KPIs, including equity IRR, DSCR, and debt term).

The analysis should provide the public authority with preliminary base case financial model, together with preliminary sensitivities. The model can be adjusted, if needed, once market sounding is finalized and definitive sensitivities are run.

Properly designing and programming PPP financial models and researching accurate input costs and other financial model assumptions is a specialized skill, and the PMT should make sure that the appointed PPP advisors have proven experience in this. This task is described to help PMT understand the outline process that advisors will be using so they can undertake a more accurate review and challenge the PPP financial model assumptions, methods, and the findings provided by the advisors, if necessary.

The PPP financial model should be accompanied by a PPP Project Financial Feasibility Analysis Report (which in accordance with the PPP legislation of Ukraine should be a separate chapter of the feasibility study), which should include:

- I. Description of the design of the financial feasibility model.
- II. Explanation for the sources of key input data that has been gathered, such as estimates of construction costs; operating costs; lending terms, tenors, and coverage ratios; expected returns on equity; etc.
- III. Descriptions of the need for any public sector supports required by the project.

The PPP financial model provides important inputs to several other steps in Phase 2, including determining if the project is affordable, as well as the VfM analysis.

## Design

The basic design of PPP financial feasibility spreadsheet models should have three general components, such as (a) assumptions and inputs of data; (b) calculations and displays of data; and (c) analytical results.

While each individual PPP project is unique, all PPP financing has a few components in common related to displaying data and clearly showing the analytical results. These components include:

- I. *Key inputs and results.* When designing any model, it is advisable to present the key input variable cells as well as to display the key analytical results. This makes it much easier to understand the sensitivity of the project's key results to given changes in the inputs.
- II. *CAPEX.* This includes lists of construction costs, equipment purchases, working capital, testing and commissioning, and other start-up costs.
- III. *Financing structure.* This shows how the total capital expenditure and start-up costs will be met, by equity, by debt, by subordinated debts, and from any other sources. Either within this component, or as a subcomponent, debt repayment schedules should be shown for each loan.

- IV. *Profit and loss statement.* This should show the project's revenues, operating costs, depreciation, tax liabilities, and net income. For projects with revenues subject to varying levels of demand, a separate subcomponent dealing with demand levels may be needed.
- V. *Cash flow analysis.* This converts the accounting results of the income statement into cash flows. The key results from this component include the investor's return on equity as well as the key coverage ratios important to lenders.
- VI. *Balance sheet.* This tracks the total assets and liabilities of the project company through the life of the project.

The following data must be gathered for use in the project finance cash flow models:

- I. Assumptions, such as the construction term, and a preliminary contract term (for example, the most recent term used in a similar project or the term corresponding to maximum term available for project finance debt plus five years); the expected commencement dates for operations and revenue collection, and projected rates of inflation; and tax and accounting assumptions, including asset accounting amortization programs and all taxes expected to be applicable to the private party.
- II. Project technical data:
  - a. Minimum required performance standards of the project, expressed in terms of outputs
  - b. Background data on demand and growth projections from existing official data for the sector (20 to 30 years)
  - c. Background data on existing network: size and age of existing assets
  - d. Proposed or possible location for the infrastructure asset
- III. Capital and operating cost data:
  - a. Preliminary CAPEX estimates of the initial investment required to construct the project. Subcategories of these costs could include design, any civil works or major preparations, installation, broken down by sub-project and project phase, equipment, broken down by category, interconnection costs, other capital expenditures.
  - b. Periodic rehabilitation and renewal costs and reinvestments.

For cash flow models during Phase 2 feasibility analysis, these costs are almost always estimates based on construction cost estimating guidelines and tables. More detailed data becomes available at the proposal or design stage. If possible, modelers should try to include the formulas behind the estimates so that any proposed changes in project size or capacity can be more easily be reflected in reasonable estimates of changes in capital expenditures.

- c. Operations and maintenance cost estimates for major cost categories including wages; overhead; utilities, electricity, water, communications, and other services; any consumables required (fuel, chemicals, lubricants, etc.); and other operations and maintenance costs (e.g., insurance).

Because operations and maintenance cost data during Phase 2 feasibility analysis is based on estimating guidelines, such as percentage of plant size, etc., it is important to try to include these formulas, when available, in the model.

- d. Depreciation schedules for assets.

## IV. Financing Data:

## a. Debt

- i. List of potential commercial lending instruments (loans, project bond alternative)
- ii. Estimates of debt/equity leverage acceptable (gearing)
- iii. Debt term available
- iv. Currencies and estimated ranges of interest rates and spreads (and fees, such as swap fees)
- v. Terms of any grace periods available
- vi. Terms for any subordinated debt available
- vii. Likely financial covenants, such as debt service reserve requirements.

## b. Equity:

- i. Equity instruments considered, especially regarding the possible mix of equity shares and subordinated debt committed by the shareholders
- ii. Estimates of expected return on equity by likely investors

## V. Revenue

## a. If it is a user-pays project, describe:

- i. The method for setting the tariff (whether it will be specified in the request for proposals and the PPP contract by the procuring authority or specified by bidders in their proposals)
- ii. The structure of the tariff, if relevant (for example, the existence of a maximum average tariff and different types of tariff for different classes of vehicles or different times of the day)
- iii. How the tariff will be indexed

## b. For projects with government payments, define and describe:

- i. Frequency and timing of payments
- ii. Estimated yearly growth rate for volume payments
- iii. Escalation rates applied to the payments (if different from inflation)
- iv. Base case assumption regarding deductions from the payments for underperformance (e.g., 0 percent deductions or 2 percent deductions).

## c. Develop volume or demand projections, when relevant (for user-pays projects or projects with government payments linked to volume), defining the base case for demand/traffic in the most likely scenario, and including, if practicable, two other scenarios (pessimistic and optimistic).

## VI. Government support

- a. For co-financed schemes with grant financing, describe how grants will be provided (whether disbursed during construction at milestones or as work progresses or by means of a deferred payment stream); indicate whether the amount of the grant will be subject to offer by bidders in their proposals, in which case the final estimate developed during this phase will be regarded as the cap or ceiling on these payments.

**Sensitivity analysis**

Using the base-case financial model, and after incorporating necessary adjustments according to market feedback (please refer to the market sounding task), the PMT should run ex-ante and ex-post sensitivity scenarios to test the base case's robustness. Financial sensitivity tests should also be conducted to determine 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.

If the sensitivities demonstrate that the project's feasibility is threatened by foreseeable changes in key inputs, the initiator of PPP proposal preparation should adjust the proposed value of the open variable (such as the amount to be paid by the bidder as a concession fee or the payment to be requested by the bidder) until it is satisfied that the project is feasible across a sufficient range of sensitivities. The base case may then be refined and finally adjusted. (Note that before closing the base case, it has to be proven to be affordable, and the base scenario as defined must be shown to be reasonably expected to provide VfM or that the estimates do not differ substantially from the estimates originally considered in the VfM assessment if already done).

The sensitivity test conducted should include the following:

- *Ex-ante sensitivities*: adverse or favorable variations on the main costs and/or revenue inputs keeping constant the value of the financial KPIs (i.e., generating scenarios that are commercially feasible and bankable) and observing the variation in the output driver (e.g., the amount of the availability payment required to meet the financial KPIs)
- *Ex-post sensitivities*: adverse or favorable variations on the main costs and/or revenue inputs keeping constant the value of the output, observing the variation in the financial KPIs. For example:
  - Increase of costs by the uncertainty margin of the costs estimate (usually around 20 percent)
  - Low demand scenario
  - Any important project risks identified in the other parts of the feasibility study (for instance, delay of the project implementation due to permit problems)

## Results

The recommended results that an effective PPP financial model should produce include the following values of the main financial KPIs to drive commercial feasibility:

- I. *Overall cash flow*. This should show not just accounting measures of revenues, expenses, and net income, but also actual cash flow, including cash flow available to service debt.
- II. *Cash flow available to equity participants*. This is net cash flow, available after cash expenses, debt service, and taxes.
- III. *Profitability/viability*. This includes financial IRR for the whole project and the IRR on the equity investment.
- IV. *Cost recovery (expressed as a payback period)*. This covers the number of years needed to pay back the equity investment. The norm is 5 to 7 for commercial investments, but for long-term infrastructure investments, 10 to 15 years can be common.
- V. *Debt service coverage ratio (DSCR)*. The cash flow available to repay debt each year (after operating cash expenses have been paid) should be at least 1.5x–1.3x the debt service payments (principal +

interest) due that year. The minimum DSCR varies from sector to sector, but often lenders look for an initial minimum of 1.5x for projects facing demand risks, which can be reduced if the project's creditworthiness is strengthened.

- VI. *Estimated financial NPV.* As a project's investment costs occur during the first 2 to 3 years and then its profits/returns occur later on in the future (years 4-20), it is difficult to compare them over time. The financial NPV uses a common "discounting" technique to express all costs and returns in today's monetary terms, allowing investors to determine whether total returns are greater than total costs and by how much.
- VII. *Financial internal rate of return (FIRR).* This is the internal rate of return of the stream of net project cash flows of the private partner (revenues less expenses). It should exceed the weighted average cost of capital (WACC). The WACC must be determined on the basis of assumptions on the gearing ratio, interest rates of loans, and required return on equity. The assumptions should be clearly documented and based on published market data (return of listed firms in the appropriate sector) or findings from market consultations.

The financial model will support the procuring authority in defining the following:

- I. *Financial impact of different types of debt and equity.* This looks at whether there may be a role in the project for subordinated debt or secondary equity.
- II. *Optimum debt & equity ratios.* For most large PPPs, debt/equity ratios range from around 60/40 up to 80/20 (depending on the sector). Higher-risk sectors and projects generally require more equity (30–40+ percent), while lower-risk PPPs often need less (20–25 percent). The lower the equity, the lower the PPP's cost of financing, up to a point, as high leverage raises credit risks.
- III. *Negative cash flows in early years (if applicable) to be met by the private partner (and/or by public authority support).* A new project facing market demand risk, like a toll road, may need many months (or even years) before traffic levels grow to the point where they cover the project's full operations and maintenance and debt service costs. In the meantime, the project still needs to pay its operations and maintenance expenses and to make its required regular principal plus interest payments to lenders.
- IV. *Additional public support or risk-sharing if needed.* For user-pay PPPs, if the PPP financial model indicates that based on current tariff levels the project would not be able to recover all of its costs, then additional government supports or risk-sharing mechanisms may be required or the size and scope of the project may need to be reduced. The PPP financial model should be designed to provide estimates for the levels of government support needed for the project to be financially viable. These new options will require updating and reconfirming the PPP's affordability analysis step.
- V. *Corporate tax revenue to the Government of Ukraine (when profits are made).* As financially viable projects, PPPs should generate positive net income and therefore will need to pay corporate taxes on that income. The financial model should accurately show the taxes the project will need to pay to make sure tariffs are set to recover these costs and to calculate the net level of government support needed.
- VI. *Impact of changing key variables such as tariffs, project costs, etc.* This result requires conducting sensitivity analyses on the project's key variables. Analysts will ask, If one input variable, such as the tariff level (or revenues, CAPEX, OPEX, interest rates, FOREX rates, etc.) falls by 10 percent, by how

much do the key output results of the project (equity IRR, modified IRR, DSCR, payback period, etc.) change? When a project is no longer financially viable due to a relatively small change in an input variable, the project is considered very sensitive to that variable. This may indicate an area where risk allocation may be needed to help mitigate the risk.

The PMT should ensure that the maximum or minimum estimated amounts of the payment mechanism (user pay, government pay), and any form of VGF, if necessary, result in meeting the financial KPIs (DSCR, debt term and equity IRR requested), including any buffer determined as a result of the sensitivity tests. The results should be presented in both yearly cash-flow terms and in net present value terms discounted at the discount rate provided by the MDETA.

## 6. Fiscal affordability

The objectives of affordability and fiscal impact analysis are to assess whether the project is affordable for the government and to calculate fiscal impacts (the government's aggregated exposure to PPPs) of the government's commitments (direct and contingent liabilities<sup>8</sup> related to the risk retained). If the project is not within the affordable range for the public partner, the project may need to be reduced in size or scope to fall within the affordability limit.

### 6.1. *Funding sources*

The PMT should describe the specific sources of funding available for the project, including any specific budgetary source other than the recurrent budget of the public partner, such as specific sectoral or dedicated strategic trustee funds (i.e., oil taxes for transport infrastructure, funds in the Road Fund). Furthermore, it should describe the weighting of the new project within the projected recurrent budget of the public partner.

To determine whether the project is affordable, the PMT should take into account all of the project's potential direct commitments and contingent liabilities, the sustainability of the public finances (if the whole-life costs of new projects are within the budget limits) and fiscal rules,<sup>9</sup> and the need for the public partner to fund other priority projects and its recurrent costs. The details of this assessment should be documented in a fiscal commitment and contingent liability report included as part of the feasibility study package.

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8. A contingent liability is a potential liability that may occur depending on the outcome of an uncertain future event. In a PPP context, contingent liabilities generally relate to retained and shared risks and represent the estimated value of the risks determined in the affordability and fiscal impact analysis. These values should also be used for the VfM analysis.

9. Please refer to the Budget Code of Ukraine. The public debt and state-guaranteed debt at the end of the budget period may not exceed 60 percent of the annual nominal volume of GDP. The maximum amount of state guarantees may not exceed 3 percent of the planned revenues of the general fund of the state budget.

## 6.2. *Direct fiscal commitments*

The calculation of direct commitment is a result of the financial feasibility assessment. The value of the direct commitments to be regarded in the affordability analysis is the value of the amounts related to co-financing by means of grant payments during construction, by deferred fixed payments, or by means of availability payments or any other payment to be committed in the future contract estimated as necessary for the project to be financially feasible and bankable, usually considering the base case or most likely scenario (considering pessimistic scenarios may be also a sensible exercise).

The value of the required direct fiscal commitments is usually the difference between the cost of the project (including a commercial return on capital invested) and the revenue the project can expect to earn from nongovernment sources such as user fees. The fiscal cost can be measured as annual estimated payments (the most useful measure when considering the budget impact of the project) and the net present value of payments or stock terms in absolute nominal terms, real terms, and relative terms (relative to projected GDP). (If the government is committed to a stream of payments over the lifetime of the contract, such as availability payments, it is often helpful to calculate the net present value of that payment stream using the appropriate yield on government bonds in Ukraine.)

The PMT should also describe and estimate any cost savings expected from the project and estimate the extent to which these will provide an indirect funding source.

The PMT should also consider other costs of the project, such as:

- I. Any land acquisition costs that will be met by the public partner
- II. Any costs associated with components of the project that will delivered separately from the PPP contract, such as site preparation activities that will be performed by another party under an early works contract
- III. The public partner's project management costs over the period to the signing of the PPP contract
- IV. The public partner's contract management costs over the life of the PPP contract
- V. The cost of providing any services related to the project that are excluded from the scope of the PPP contract and retained as a government (municipality) responsibility (for example, if the PPP covers the design, building, financing, and maintenance of new schools, and the public partner will employ the teaching staff in the schools, the cost to the public partner of employing the teaching staff should be taken into account in assessing the affordability of the project).

## 6.3. *Contingent liabilities*

Assessing the cost of contingent liabilities is more difficult than assessing direct liabilities, since the need for, timing, and value of such payments are all uncertain. Broadly speaking, the assessment can take one of two possible approaches.

- I. *Scenario analysis.* Scenario analysis involves making assumptions about the outcome of any events or variables that affect the value of the contingent liability and calculating the cost given those assumptions. For example, this could include working out the cost to the government in a "worst

case” scenario, such as default by the private party at various points in the contract. It could also include calculating the cost of a guarantee on a particular variable, for instance, different levels of demand.

- II. *Probabilistic analysis.* An alternative approach is to use a formula for how the variables that affect the value of the contingent liability will behave. A combination of mathematics and computer modelling is then used to calculate the resultant costs. This enables analysts to estimate the distribution of possible costs, and then calculate measures such as the median (most likely) cost, the mean (average) cost and various percentiles (for example, the range of values within which the cost is 90 percent of the time). To be useful, probabilistic models need reliable data from which to estimate the probability distributions of the underlying risk variables.

The exercise to assess the ability to accommodate the project within the long-term budget may be done using three different perspectives. Each includes specific tests to be conducted by the project team.

- I. Comparing the cash flow of commitments to the government’s (municipality’s) total projected tax revenues
- II. Comparing the cash flow of commitments to the public partner/sector projected budget appropriations
- III. Assessing the compliance with eventual overall budgetary limits and constraints

It is common for the initial scope and the risk allocation structure of the PPP to change as each Phase 2 task is completed. Therefore, the affordability assessment should be updated and reconfirmed at the end of Phase 2 to make sure that the proposed project is still affordable. For example, new costs for mitigating the project’s environmental impacts are often added, the level of demand that the project must meet may be increased, or new requirements for providing approach roads and interconnection facilities, etc., may be added to the project. Such changes usually increase the estimated cost of the project.

Should the project’s fiscal impact exceed the total allowed ceiling on the PPP exposure for a particular public partner or for all PPP programs in Ukraine in general, the project structure or the scope should be revisited to make it affordable. If this is not feasible, the public partner may need to reject the selected project (definitively or temporarily) and choose the most suitable option to address the identified need.

## 7. Environmental and social feasibility

The objective of the environmental and social impact assessment is to obtain a preliminary understanding of the project’s impact on the natural and/or social environment and to flag any material adverse implications arising from construction and operation of an infrastructure asset. The implications may also include follow-on effects beyond the immediate project area and the people directly associated with the project (secondary impacts). In accordance with the PPP Law and LoC, the environmental impact assessment for activities planned under a PPP proposal is carried out by a private partner after signing PPP/concession contract, in accordance with the Law of Ukraine "On Environmental Impact Assessment."



### 7.1. *Environmental impact assessment*

The environmental impact assessment (EIA) looks at the following:

- I. The condition of the project's environmental context and resources
- II. All likely environmental impacts and other environmental concerns
- III. The specific, most-important environmental impacts that require detailed analysis
- IV. Alternative measures and strategies that can be taken to mitigate these impacts, including their economic, financial, social and environmental requirements and benefits
- V. All affected interests and stakeholders who should be consulted in carrying-out the EIA study
- VI. The option or strategy that provides the best overall (economic, financial, social, and other) solution for achieving environmental viability for the project
- VII. Key outputs of the EIA study that should be managed and monitored as part of the project's environmental management and sustainability plan

### 7.2. *Social impact assessment*

The social impact analysis can address a very broad set of issues related to changes in the social, economic, and cultural conditions in which the surrounding community live and work. Specific types of social issues and possible impacts associated with a project can vary considerably depending on the project's nature, size, and location. Social impact assessments can be conducted using four main steps, as described below:

- I. Identify the people residing and/or working within a project's area of influence, including mapping the communities and their social, economic, and cultural connection with the site in which the project will be implemented. This first step also includes listing the social issues to be considered (the list of questions presented in Box 6 should be considered the minimum).

#### **Box 6. List of social issues**

The following list is a minimum set of socials issues that should be addressed as a part of the social feasibility exercise.

- Will the project produce any population or demographic movement, such as a change in size of the communities affected by the project?
- Will the project significantly alter the economic structure of the local economy or generate any significant change in relative prices, such as land value? What kinds of social impacts would these economic changes produce?
- Will there be a significant change in the communities general access to natural resources, such as drinking water and energy?
- Is the local community structured around effective governance mechanisms for dealing with the long-term effects of the project on land use regulation, negotiations of business transactions, and others?

- Will the project increase or decrease the demand for public goods or services (such as education or health)?
- Are there groups (indigenous groups, women, ethnic minorities, etc.) that will be differentially impacted by the project?
- Will the project interfere with the local labor market, during or after construction?
- Does the background of project staff (e.g., urban, educated, skilled, foreign-language speaking, expatriates, culturally different, etc.) differ significantly from that of local communities? Might the difference lead to misunderstanding and conflict?
- Will an influx of newcomers seeking opportunities associated with the project disrupt traditional social structures and create undesirable effects, such as crime, violence, disease, or conflict due to religious and ethnic rivalries?

The answer to those questions can help to determine the extent of social environmental impact and to whether any unmanageable social obstacles may impede the project. This knowledge can permit anticipating, avoiding, minimizing, or offsetting the adverse significant social effects of the infrastructure.

*Source: Based on WBG (2016), PPP Certification Guide, Ch. 4.*

- II. Establish a social baseline that indicates the status of the issues to be considered before implementing the project. All the issues identified in the first step should be incorporated into a social description of the communities affected. The methods of obtaining data for the social baseline include review of secondary data, public consultations, participatory techniques and stakeholder analysis, and qualitative and quantitative methods.
- III. Estimate the impacts of the project in the communities identified within the area of influence by projecting the existing baseline into the future with and without the PPP project and comparing the issues identified as relevant for the specific project. Good practice suggests the need to classify each identified impact in terms of its relative importance, considering the number of people affected and the reach of the damage produced. Impacts can then be ordered or prioritized in terms of their relative social significance. Some projects generate particularly obvious adverse social impacts, which should be investigated with extreme care. This is the case, for example, in projects that require land expropriation and forced relocation, especially of large communities, or projects that interfere with indigenous communities and their heritage sites. In these cases, the scope of the social impact analysis must highlight all the costs these communities will endure through a comprehensive approach.
- IV. Identify the mitigation strategies for the adverse impacts identified in the previous steps. This will lead to a social action plan, a part of social impact assessment. The plan should indicate the strategy recommended and a basic estimation of costs to implement it, as well as its distribution in time. These plans will include (if needed): (i) an outline of the land acquisition and resettlement plan, and (ii) a capacity building and training program to implement the social environmental protection measures. The costs of the compensation and mitigation plans must be estimated for the land acquisition costs (preparation of land acquisition plan and price paid to current owners)

and for the resettlement costs (cost of compensations and resettlement measures). Planning for executing the land acquisition should be included, and the agency responsible for preparing the land acquisition plan should be identified. The resettlement plan must be drawn up according to relevant regulations.

The social impact assessment should identify the impacts of the project in the community and classify them in terms of significance. It should also provide recommendations for actions to avoid, minimize, or compensate for the project's adverse social impacts. The assessment indicates mitigation actions, some of which can be implemented in Phase 2 itself, resulting in changes in technical requirements, project design, or other aspects of the project. In other cases, the assessment can recommend actions the private sector can take, in which case a cost estimate should be produced as an input in the financial model.

Finally, the social impact assessment indicates the total adverse social consequences that cannot be mitigated and presents them as a relevant consideration in the green light decision to procure the project.

In practice, many public investment projects have already completed EIAs during the project's initial economic assessment, prior to its being even identified as a candidate for PPP, as these assessments have to be done however a project is procured, whether publicly or as a PPP. This step may therefore involve updating and validating the earlier environmental analysis, rather than completing a new one.

The entire process of carrying out and completing the EIA and obtaining approval from the competent public authority can often take a long time for larger projects. This is part of a PPP project's overall feasibility analysis and should be prepared and planned at an early stage. If possible, the EIA should begin as soon as the project has been officially selected to proceed to Phase 2.

The results of EIAs often recommend that project designs be altered in important ways to reduce environmental impacts. These alterations usually require additional CAPEX and OPEX costs for the project. Therefore, it is important to ensure that the options developed by the environmental impact analysts as well as their recommendations are closely coordinated with the project's financial feasibility study. If not, the recommendations of PPP environmental analysts might add costs to the project that make it no longer financially affordable or viable.

## 8. Risk assessment

Risk assessment was initiated in Phase 1 for the concept document preparation. The initiator of PPP proposal preparation developed an initial risk register listing the key risks and, using a risk matrix, qualitatively assessed the likelihood and impact of these risks occurring.

In Phase 2, on the basis of the preliminary risk assessment exercise, the PMT should update the risk register with the major risks identified during the project's technical, financial, economic, legal and institutional, and environmental feasibility analyses, to avoid having unplanned changes threaten the

viability of the project. The step of updating the project's most important risks is necessary to come up with an effective and acceptable risk allocation structure that ensures the project is viable.

Consistent with the financial structure analysis described in the financial feasibility task above, the PMT should describe precisely the limits for deductions in service payments or other derisking approaches that can be taken, as well as any guarantee or explicit support or finance provision aimed to diminish the risk of availability of finance, including the minimum revenue guarantee.

### *8.1. Updating the risk register and risk matrix*

On the basis of the initial risk register developed in Phase 1, the initiator of PPP proposal preparation should expand the risk register and incorporate the risks identified during the development of the feasibility study (see the Appendix 1 of this Manual for a risk register describing 22 types of risks common in infrastructure PPP projects, with their probable impact on the PPP project).

In practice, risk identification is most successful when it is conducted as a group or collective exercise rather than being left to one single specialist to conduct. Therefore, PPP risk identification workshops, fora, and meetings should seek to bring together the perspectives of all relevant stakeholders, not only technical/engineering, financial, and legal specialists, but also those with experience in public policy issues, local perspectives and stakeholders, environmental and social impacts, and other issues facing an individual project. PPP projects and their initiators will have the best chance of identifying relevant risks facing a specific project when they have sought input from the broadest possible range of project stakeholders.

The identified risks should cover the risks that are related to the project as a whole, even if they are not risks related to the scope of the PPP, such as, for example:

- Risks associated with early works to be conducted directly by the public partner or another contractor, which may delay the project or otherwise create integration risks with the PPP.
- Risks associated with the PPP process, such as the risk there may not be a competitive bidding field for the project if many other large projects are being tendered at the same time.

The initiator of PPP proposal preparation should use the risk register as a management tool for all risks, including those likely to be retained by the public partner and those unrelated to the scope of the PPP. The risk register will serve as a route map for due diligence and other preparatory work, such as specific research, information gathering, and quantitative assessment of certain risks.

Each sector and each project differs; thus each project will have its own unique challenges when it comes to the risks it faces. Therefore, most projects will have additional unique risks, not currently listed in the template register shown in Appendix 1, that should still be identified and analyzed.

A risk matrix is a valuable tool for determining the likelihood and impact of each identified risk. It is important to keep the risk register and the risk matrices up to date to enable project risk prioritization and quantification.

## 8.2. Allocating risks

Risk allocation is the process of determining which parties take responsibility for bearing the impacts of and for managing and controlling the consequences of a project risk. It is important to note that the objective is not to transfer risks to the private partner as an end in itself. Each risk should be assigned to and made the responsibility of the party best able to manage, control, and ultimately minimize that risk at lower ultimate cost to the government and in a way that incentivizes the desired results in terms of the delivery of services. In addition, each party needs to fully *understand* all the risks being allocated to it, or that party may be exposed to a risk it cannot control or that another party could manage better.

### Box 7. Basic principles in risk allocation in PPPs<sup>10</sup>

1. **Risk allocation involves a degree of prioritization.** If a project is structured properly, the decisions about allocating the significant risks of the project (in terms of likelihood and/or impact) will implicitly allocate many of the less significant risks without the need to expressly consider them. When allocating risks, the risk transfer should be clearly defined by the project scope and the PPP delivery structure. Subject to the refinement of risk allocation, all risks inherent to the scope of the project, and those appropriate to the economic ownership of the asset and the nature of the business, should be transferred unless the risk assessment clearly recommends the opposite.
2. **Focus on optimization rather than maximization.** The success or failure of a project often depends on the proper risk management that emphasizes risk optimization rather than maximizing risk transfer. Allocation of project risks can serve as incentives to the private sector to improve its management and performance on any given project. Hence, risk allocation tries to recommend an optimal balance between the management and cost efficiency objectives.
3. **The main driver for risk allocation should be VfM.** Therefore, when a risk transferred to the private partner results in a higher cost than the expected impact if that risk were retained, the risk should be retained. This is only possible to assess if the probability of the risk occurring can be reasonably estimated and the consequences can be realistically measured. In general terms, transferring a risk will help maintain VfM when the private partner adds value by accepting and managing it.<sup>11</sup>
4. **Risk is allocated to a party when:**
  - a. It has the greater ability to control the probability of the risk event, control the impact of the risk event in terms of the associated costs, and pass on the risk to third parties effectively.
  - b. It has been made aware of the risk's possible fallout.
  - c. It has appetite for the risk.
  - d. It is assured of being able to charge an appropriate risk premium for bearing it.

10. Based on (Loosemore, 2003) and T. Irwin (2007).

11. World Bank Group (2016).

The initiator of PPP proposal preparation should therefore develop a preliminary risk allocation matrix that incorporates all risks in the risk register that specifically relate to the scope of the proposed PPP contract. The extent of risk sharing will depend on the nature of the risk and the parties' specific circumstances. Retained risks are risks (or parts of a risk) that the government (municipality) intends to bear itself. Transferred risks are risks (or parts of a risk) that are likely to be transferred to the private sector. The government (municipality) retains any risks not transferred to the private partner.

Table 1 below shows an example of a risk allocation matrix.

**Table 1. Example of a risk allocation matrix**

Risk Category	Risk	Allocation	Justification / Explanation
<i>E.g.: "Site risks" "Construction risks" "Operating risks" etc.</i>	<i>Describe the risk. For example, "Risk that the service requirements are not met once the project is operational."</i>	<i>"Private party", "Public authority" "Shared"</i>	<i>Justify the risk allocation and, for shared risks, outline the sharing mechanism. For example, "The risk that the service requirements are not met once the project is operational is allocated to the private party because it will construct and operate the facility and therefore will be the party best placed to manage this risk."</i>

#### **Box 8. User-pays versus government-pays models**

Risk allocation in a PPP has correlates strongly with the form of payment, that is, with whether it is a user-pays or a government-pays project. If the project will be a user-pays project, the preliminary risk allocation matrix should state whether a contractual guarantee (e.g., minimum revenue guarantees, etc.) or specific financial guarantees in favor of lenders are envisaged. If user charges will be retained or no users will be charged, the preliminary risk allocation matrix should define the basis on which payments will be made: volume or availability/quality.

While the type and consequence of the risks arising from a project will vary, how the risks are allocated among the parties has significant implications for the success of the PPP including its VfM and fiscal responsibility. Risk allocation affects the ability to attract private investment, the quality of competition among bidders, and the cost of capital. The more risks the government (municipality) retains, the more fiscal costs the government assumes, thus exposing itself to higher fiscal risks. High fiscal costs reduce the value of the project for the government. The cost of the project to government should align with fiscal priorities. Also, project risks retained by the government (municipality) should not be fiscally destabilizing.

The more risk borne by the private partner, the more control the private sector will need to manage those risks. The private partner will need to be compensated for risks it bears. The more the risk assumed by the private partner, the higher the cost of capital (or risk premium), which may result in project failure. Thus, shifting too much risk to the private partner can reduce a project's VfM and, in the extreme, lead to failure during procurement where potential investors or their financiers are not willing to bear the levels of risk required. Even if bids are received and the project awarded, the level of risk may be too much for the private sector to manage, which can lead to project failure.

An optimal risk sharing arrangement should aim to preserve VfM and at the same time minimize fiscal costs and maximize efficiency. The optimal allocation is achieved at the lowest possible cost for taxpayers, while private sector entities attempt to maximize their returns within the acceptable boundaries.

The matrix below includes a common risk allocation practice used by typical PPPs. Each project must develop a unique risk allocation structure that best suits its individual needs and sector. Therefore, most actual projects will have additional risks, not currently listed below, which must be identified, analyzed, and clearly allocated. The PMT should take a flexible and adaptable approach when it comes to deciding which risks are relevant for a given project and how they should be allocated.

**Table 2. Typical risk allocation practice in a PPP project**

#	Risk Name	Risk Allocation			Explanation
		Shared	Retained by the public authority	Transferred to the private partner	
1	Land availability		✓		
2	Land unsuitability		✓		
3	Environmental			✓	
4	Health, safety, and permits/licenses			✓	
5	Currency availability and transferability		✓		
6	Operating costs			✓	
7	Interest rate			✓	
8	Exchange rate	✓			
9	Market (actual quantity of outputs or services demanded by users or the off-taker is less than anticipated)	✓	✓ (if the project's tariffs or prices are not adjusted according to the escalation formula agreed upon)		
10	Responsibility of design			✓	
11	Output specifications and standards	✓			
12	Design data			✓	

#	Risk Name	Risk Allocation			Explanation
		Shared	Retained by the public authority	Transferred to the private partner	
13	Procurement and construction			✓	
14	Construction cost			✓	
15	Program			✓	
16	Operation			✓	
17	Maintenance			✓	
18	Ancillary features		✓		
19	Transfer of assets			✓	
20	Regulatory		✓		
21	Political/sovereign		✓		
22	Force majeure	✓			

### 8.3. *Quantifying the risk and adjusting the main inputs of the PPP financial model to risk*

The public authority should update the qualitative or semi-quantitative risk analysis conducted in Phase 1 through a risk matrix and further analyze the risks quantitatively. The quantitative risk analysis generally follows three main steps:

- I. Estimating the most likely consequence, including the financial implication in terms of the damage, costs or revenue loss, and timing (as the consequences of particular risks might change over time),<sup>12</sup> of each risk event happening.
- II. Estimating the probability, expressed as a percentage, of the risk materializing (both retained and transferred risks).
- III. Estimating the probability-weighted cost of each PPP project risk by multiplying the size or impact of the estimated consequence by the estimated probability that a risk of that size will occur.

The consequences of risks can be either direct or indirect. Direct consequences include time and cost overruns over the initial base estimates used in the raw model. Indirect consequences arise from the interaction between risks, where the occurrence of one risk has flow-on implications for other aspects of the project. When identifying the consequences of a particular risk, the potential interaction between the risks must be included. This is especially important where the materialization of a risk could delay the

12. For example: (i) the financial impact of construction risks is generally limited to the pre-completion period and the early years of the project; (ii) operating, demand, and maintenance risks are relevant over the entire term of the project post-commissioning; and (iii) residual value risks are limited to the end of the project or an assumed disposal date. Technology risks are likely to increase over time due to technological obsolescence.



project's implementation. Distinguishing the different causes and consequences of each risk can be useful as different consequences could have different probabilities of occurring. It could be efficient to allocate different causes for the same risk to different parties based on their ability to mitigate the cause at different costs. Every effort should be made to identify and quantify all significant risks for a project, at the same time taking care to avoid double counting. The depth and accuracy of the analysis that goes into valuing the risks should reflect their relative significance. If data is insufficient to value a risk, estimates and approximations should be used. If a risk is unquantifiable, it should still be identified and included in the risk register, together with the reasons for its exclusion from the quantitative assessment. This will ensure that it can still be considered in the qualitative assessment.

After having identified the material risks and assessed the potential consequences if they materialize, it is necessary to estimate their probability of materializing. Various techniques can provide probability estimates, including simple subjective expert level estimates of probability (based on past experience, best practice, and likely improvements in the future and supported by reliable information); more advanced techniques that produce weighted probabilities for specific risks based on given confidence intervals; and single comprehensive risk estimates for all project risks using multivariable statistical techniques and simulations, such as Monte Carlo simulation.<sup>13</sup> The subjective assessment makes a number of point estimates, assessing how likely the final costs are to be above or below the amount included in the raw public sector comparator (PSC). Statistical techniques can be used to estimate the probability of risk by constructing probability distributions and interpreting the resulting outputs. These distributions are based on professional experience, supported where available by historical information and reliable assumptions for similar recent projects. Once these distributions have been calculated, a reliable estimate of probability can then be made to a given level of accuracy (known as the confidence interval). The capability to provide reasonable forecasts of likely outcomes through performing subjective assessment or an advanced probability valuation technique largely depends on a mix of the following requirements:

- I. All assumptions should be fully documented and defensible. The PMT should be prepared to revisit initial estimates if new information emerges that affects the initial estimate.
- II. A dataset should be available that is sufficient to allow accurate making assumptions about the distribution of each risk variable and the construction of a multivariable equation.
- III. Professional experience of technical experts or external advisers with particular expertise are available to determine appropriate probability distributions, provide reliable probability estimates, and perform the probability analysis and econometric assessment of the results.
- IV. Consideration should be given to whether the probability of a risk materializing is expected to change over time. For example, the likelihood of cost overruns typically increases over time, due to the reduced ability to forecast accurately over the long term.

For the quantified risks, the impact on the economic and financial viability must be assessed by, among other steps, applying sensitivity analysis and testing the robustness of the financial returns. (The

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13. This technique constructs an artificial probability distribution for total risk, or a subset of risks, based on assumed or actual distributions for each individual risk. It then provides a single value for risk by simultaneously solving a number of different risk relationships.

occurrence of risks will have an impact on key financial parameters such as return to shareholders, the debt service coverage ratio, and the ability to repay debts.) The PMT, with the assistance of its advisers, should develop estimated risk adjustments for all relevant cost items (construction costs, O&M costs, and renewals) so as to provide most likely values for these costs, which are built into the financial feasibility assessment. The need for government support and guarantees may be determined using a detailed financial model as described above in the section on the financial feasibility analysis. When the project includes user revenues, the initiator of PPP proposal preparation should also develop risk adjustments for the revenue projections. Risks likely to be retained by the public partner as per preliminary risk allocation should not be considered in estimating costs for the financial feasibility. Estimates for such retained risks will be used for building the PSC within the VfM exercise. (Please see the Appendix 2 of this Manual.)

#### *8.4. Prepare an internal risk management plan*

The public partner should develop a risk management plan that outlines the process and responsibilities for managing risks during the subsequent phases of the project. The risk management plan should set out:

- Who is responsible for maintaining and updating the risk register and how frequently it should be updated.
- How the risk ratings in the risk register will be assessed and re-assessed, including definitions of the scales used for assessing the likelihood and impact of risks and the public partner's risk tolerances.
- The process for regularly reporting on risk register updates to the project team and project governance bodies and for ensuring that risks retained by the public partner and not related to the scope of the PPP are managed by the public partner in accordance with the risk treatments specified in the risk register.
- Processes for escalating the management of any risks in circumstances where the public partner's risk tolerances are exceeded.

#### *8.5. Developing strategies to mitigate the risks*

The public partner should develop strategies and mechanisms to reduce and address the likelihood and impact of risks if they materialize (or to reduce perceived risk by reducing uncertainty) to preserve the bankability of the project as well as ensure that the residual risk becomes acceptable for investors and lenders. Many available approaches can help mitigate risk. These may include preventative and corrective measures, substantial focus on due diligence, and preparation of detailed and comprehensive project reports, insurance, contractual provisions, contingency funding or government support, changes in the scope or timing of the project, in a way that avoids risks or reduces their impact.

The process of developing the risk mitigation strategy involves the three stages described below:

##### ***Stage 1: Decide which risks to manage***

During risk identification and assessment, risks are ranked based on their potential impact on the project. Risk allocation further highlights the risks that are important to manage based on the project structure.

##### ***Stage 2: Define the risk management measures***

When examining each risk, a determination on which mitigation approach (preventative or corrective) to take must be made. A preventive measure is one that attempts to decrease the probability of risk's occurrence. A corrective measure tries to minimize the damage once the risk has already occurred. These measures are often complementary, and a risk mitigation strategy may involve both.

The public partner must also determine which control measures should be put into place to mitigate the potential risk event. Measures include:

- *Allocation.* As described in the previous section, an effective risk mitigation strategy can be allocating the risk to the party better equipped to address the issue. Allocation of risks may not eliminate a risk outright, but it can be a good way to minimize the potential impact of an event. For example, a private partner may be more efficient at reducing the probability of project time and cost overruns, thus minimizing the probability these risk events will occur.
- *Avoidance.* It may be possible to restructure the project plan to avoid the risk altogether, such as by moving project construction dates to a season when weather delays will be at a minimum.
- *Adaptation.* This refers to the potential to make changes to prepare for changing circumstances. This may involve adapting a project to use stronger/more durable materials to minimize impacts from an earthquake.
- *Acceptance.* Some approaches accept the risk and plan accordingly. This may be necessary when all mitigation measures would be costlier than the risk event itself or if no mitigation is possible. If a risk is accepted, it is then necessary to build the potential costs into the project itself.

### ***Stage 3: Implement risk management strategies***

After developing mitigation responses for each project risk, the risk allocation matrix and risk register should be updated to reflect the effort. At this point, mitigation strategies should be combined wherever possible for the sake of efficiency, and the project development plan should be updated. Mitigations need only be included if they improve the project's value for money. Risk mitigation strategies must ensure that checks and balances are in place to help identify potential weaknesses in the project in advance and that monitoring and evaluation structures are incorporated into the contract to ensure that any potential risk events are either prevented or handled on time.

The mitigation strategies of typical infrastructure risks are discussed in Table 3. Please note that these strategies may vary depending on specific project circumstances.

Table 3. Typical risk mitigation strategies in an infrastructure project

#	Risk Name	Risk Description	Common Risk Mitigation Techniques	PMT's Specific Recommended Risk Mitigation Techniques
1	Land availability	<ul style="list-style-type: none"> <li>Land needed for the project is unavailable or has not been acquired.</li> <li>There is uncertainty over how much it would cost to acquire needed land and its timing.</li> </ul>	<ul style="list-style-type: none"> <li><i>Public partner should make available the concession site at the point of tender.</i></li> </ul>	
2	Land suitability	<ul style="list-style-type: none"> <li>Unanticipated adverse ground conditions are discovered.</li> </ul>	<ul style="list-style-type: none"> <li><i>Public partner should conduct proper due diligence on the concession site suitability.</i></li> </ul>	
3	Environmental	<ul style="list-style-type: none"> <li>The project causes major environmental impacts on its surrounding natural resources.</li> </ul>	<ul style="list-style-type: none"> <li><i>Public partner should conduct proper due diligence to assess any major environmental impacts and associated risk mitigation costs.</i></li> </ul>	
4	Health, safety, and permits/licenses	<ul style="list-style-type: none"> <li>Regulations and standards on health, safety, permitting, licenses, etc. are not complied with.</li> </ul>	<ul style="list-style-type: none"> <li><i>Require private partner to apply for and earn all necessary permits and licenses. Provide a commitment from the public partner that there will be no unusual delays in granting licenses and permits.</i></li> <li><i>Public partner engagement in advance of the procurement stage.</i></li> </ul>	
5	Currency availability and transferability	<ul style="list-style-type: none"> <li>Foreign currency is not available to transfer funds from local to hard currency.</li> <li>Profits earned by the PPP project inside the country cannot be</li> </ul>	<ul style="list-style-type: none"> <li><i>Public partner provides a guarantee on currency availability and ability to repatriate profits.</i></li> </ul>	

#	Risk Name	Risk Description	Common Risk Mitigation Techniques	PMT's Specific Recommended Risk Mitigation Techniques
		repatriated to its owners outside the country.		
6	Operating costs	<ul style="list-style-type: none"> <li>The costs of operating the project are higher than they were expected to be.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could mitigate by outsourcing operations and maintenance to a third party, a specialized operations and maintenance contractor responsible for managing operating costs.</li> </ul>	
7	Interest rate	<ul style="list-style-type: none"> <li>Interest rates on the loans used to construct the project increase.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could finance the project with a fixed-rate loan or use a hedge on interest rates (if available).</li> </ul>	
8	Exchange rate	<ul style="list-style-type: none"> <li>The local currency depreciates in value relative to the hard currencies in which the PPP project's loans and equity investments are denominated.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could use currency swaps (if available) unless long-term local currency financing is available.</li> </ul>	
9	Market	<ul style="list-style-type: none"> <li>The actual quantity of outputs or services demanded by users or the off-taker is less anticipated.</li> <li>The project's tariffs or prices are not adjusted according to the escalation formula agreed upon.</li> </ul>	<ul style="list-style-type: none"> <li>Public partner could provide a minimum revenue guarantee. The private sector could arrange for a standby facility in the project financing.</li> <li>Public partner may need to compensate private partner if the non-adjustment is in breach of contract</li> </ul>	
10	Responsibility of design	<ul style="list-style-type: none"> <li>The public authority has provided a faulty or inappropriate investment design.</li> </ul>	<ul style="list-style-type: none"> <li>Public partner should appoint experienced and reputable consultants responsible for providing and reviewing the government's design.</li> </ul>	

#	Risk Name	Risk Description	Common Risk Mitigation Techniques	PMT's Specific Recommended Risk Mitigation Techniques
			<ul style="list-style-type: none"> <li>Bidders do due diligence on design before tender stage.</li> </ul>	
11	Detailed design, specifications, and standards	<ul style="list-style-type: none"> <li>The project's performance standards and design specifications are inappropriate for the project's needs.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner should appoint experienced and reputable design and construction consultants.</li> </ul>	
12	Design data	<ul style="list-style-type: none"> <li>Wrong or inaccurate data was used during the project's construction.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could shift this risk to a third party through a fixed-price turnkey engineering, procurement, and construction (EPC) contract.</li> </ul>	
13	Procurement and construction	<ul style="list-style-type: none"> <li>Completion of the project construction was delayed.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could shift this risk to a third party through a fixed-price turnkey EPC contract.</li> </ul>	
14	Construction cost	<ul style="list-style-type: none"> <li>Total construction cost was more than anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could shift this risk to a third party through a fixed-price turnkey EPC contract.</li> </ul>	
15	Program	<ul style="list-style-type: none"> <li>The completion of the project is delayed or there is a cost over-run due to faulty work scheduling.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could shift this risk to a third party through a fixed-price turnkey EPC contract.</li> </ul>	
16	Operation	<ul style="list-style-type: none"> <li>The project is not able to function and operate as fully as had been anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could outsource operations and maintenance to a specialized third-party contractor.</li> </ul>	
17	Maintenance	<ul style="list-style-type: none"> <li>The project and its assets are not properly maintained.</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could outsource maintenance to a specialized third-party contractor (subcontractor).</li> </ul>	
18	Ancillary features	<ul style="list-style-type: none"> <li>Ancillary infrastructure services that the project needs, such as</li> </ul>	<ul style="list-style-type: none"> <li>Private partner could insist that these non-provisions constitute a breach of contract or</li> </ul>	

#	Risk Name	Risk Description	Common Risk Mitigation Techniques	PMT's Specific Recommended Risk Mitigation Techniques
		approach roads, interconnection facilities, etc., are not provided and completed on time.	<i>warrant compensatory damages from the procuring authority.</i>	
19	Transfer of assets	<ul style="list-style-type: none"> <li>The condition of the project's assets at the end of the contract term, when they are transferred back to the state/municipality, is not in compliance with the PPP contract's maintenance and performance standards.</li> </ul>	<ul style="list-style-type: none"> <li><i>Private partner could mitigate by ensuring there is proper maintenance, such as through outsourcing to a maintenance subcontractor.</i></li> </ul>	
20	Regulatory	<ul style="list-style-type: none"> <li>The terms and conditions of the PPP contract about the private partner's ability to collect revenues and seek reasonable tariff increase in accordance with the contract's price escalation formula are not fulfilled; or</li> <li>New laws or regulations are passed that increase the costs or reduce the revenue of the PPP contractor without fair compensation.</li> </ul>	<ul style="list-style-type: none"> <li><i>Private partner could mitigate through agreed compensatory changes to the contract.</i></li> </ul>	
21	Political/ sovereign	<ul style="list-style-type: none"> <li>The government nationalizes the project.</li> </ul>	<ul style="list-style-type: none"> <li><i>Private partner could mitigate through some forms of political risk insurance, e.g., from MIGA, the Overseas Private Investment Corporation (OPIC), or partial risk guarantees from WB.</i></li> </ul>	

#	Risk Name	Risk Description	Common Risk Mitigation Techniques	PMT's Specific Recommended Risk Mitigation Techniques
22	Force majeure	<ul style="list-style-type: none"> <li>The project is unable to perform due to terrorism, riots, war, or natural catastrophes (earthquakes, flooding, etc.).</li> </ul>	<ul style="list-style-type: none"> <li><i>The public partner and the private partner could jointly mitigate against man-made events through some form of political insurance, e.g., MIGA and OPIC.</i></li> </ul>	



### 8.6. *Establishing risk monitoring processes*

After risks have been identified, assessed, allocated, and mitigated, risk monitoring is the next step in the risk management process. The main purpose of monitoring is to regularly update the types of risks, their likelihood of occurring, and the magnitude of their consequences in the risk register and the risk matrix and to adjust the management framework accordingly as the project advances into the contract implementation stage. The risk monitoring process should not only monitor the likelihood and consequences of a risk occurring but also the “effectiveness and adequacy of existing controls, risk treatment plans, and the process for managing their implementation.”<sup>14</sup> The public partner should consider monitoring not only the risks that have been retained but also the risks that have been transferred to the private sector or other partners.

## 9. Value for money assessment

Value for money (VfM) is a comparison of the whole-life costs of the different procurement options (for example, traditional procurement and PPP) for a given project in which the net costs of the various procurement options are assessed and compared from the public partner’s point of view. The likelihood of VfM was estimated in the qualitative VfM assessment during the PPP review in Phase 1. In Phase 2, the feasibility analysis uses the VfM assessment (a) to update and reconfirm the qualitative VfM, as the initial size, scope, cost estimates, and risks identified in Phase 1 may have changed (often increasing) during the preparation of the PPP project, affecting the likelihood and estimated size of any anticipated value for money benefits; and (b) to estimate the likely size of the VfM benefits based on the PPP structure. The size of the VfM benefits will indicate if a project would be more efficiently implemented under a PPP delivery option or under some other procurement method, from the perspective of the procuring authority and considering the broader interests of society.

For more information on how to conduct the VfM assessment, please refer to the Appendix 2 of this Manual.

## 10. Market sounding and project marketing

### 10.1. *Market sounding*

Market sounding for a PPP project involves consulting with the private sector prior to the formal launch of the tender process. Effective market sounding improves project structuring and outcomes by bringing

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14. WBG (2018), *The Urban Light Rail Development Handbook*.

a private sector perspective to the project at an early stage. Market sounding is also part of marketing the partnership opportunity to the private sector.

The primary objective of market sounding is to collect market feedback and test the adequacy and correctness of the financial assumptions, risk and financial structure, and appetites of potential bidders to bid for the project. Based on findings from market sounding, the initiator of PPP proposal preparation should adjust the financial assumptions, risk assumptions, and financial structure when appropriate to provide greater certainty of financial feasibility and value for money and should update the base case financial model to reflect the changes. The base PPP business case and consequently the financial feasibility report should not be finalized until market sounding is concluded. The results from market sounding should be documented in a report that will become a part of the feasibility package.

It is important that market sounding includes a variety of participants, such as industry players, equity providers, lenders, etc., who are experienced with and knowledgeable about similar projects. First, a market sounding exercise attended by major stakeholders will give the initiator of PPP proposal preparation a good indication and understanding of any barriers to competition this project may face in terms of garnering an appropriate number of bidders due to any existing regulatory constraints or the basic attributes or characteristics of the project (including the scope of services, size, expected investment, etc.). Second, a market sounding also aides the initiator of PPP proposal preparation in making judgments regarding the availability of private sector skills, experience, and interest necessary to undertake the project and deliver services to the required standard, both in terms of technical capability and project scale; and any constraints affecting risk allocation, financing, and other project features. Finally, for a market sounding initiative to succeed, feedback from the market must be factored into the other project activities currently underway (for example, if the market provides feedback on its capacity to manage certain risks of the project, that information should be considered in developing the project risk allocation and assessing value for money (VfM) for that project and similar projects).

### **Box 9. How to conduct a market sounding exercise**

A market sounding exercise may take a number of forms, such as meetings with individual companies, general/industry meetings, or written communication.

It is good practice for the initiator of PPP proposal preparation to produce a formal project information memorandum (also known as a Project Note or project summary) as the first step for sounding the market. This document should describe the project details that have been defined up until that moment and clearly identify any aspects that are not yet certain. The initiator of PPP proposal preparation should take a very transparent approach, setting out any project obstacles that have been identified.

If the initiator of PPP proposal preparation is seeking feedback on risk allocation issues, the project information memorandum should clearly explain the nature of the issue, the potential risk allocation approaches, and the assessment of the initiator of PPP proposal preparation regarding the advantages and disadvantages of these options. The project information memorandum should pose specific questions to which the private sector should respond. Those questions should be directed at clarifying and confirming the advantages and disadvantages of the

possible approaches to risk allocation to enable the initiator of PPP proposal preparation to allocate the risk to the party best able to manage it.

Once the project information memorandum is prepared, the private sector can be approached in several ways. In any of the approaches, it is very important to encourage formal contributions by the companies, so as to obtain structured opinions on the matters that arise. The initiator of PPP proposal preparation should consider the following options:

- The project information memorandum can be posted online and a request for written comments can be made to all the companies identified as relevant.
- A project open day (or industry meetings) can be organized, and companies (prospective bidders, lenders, and advisors) will be encouraged to visit a data room and watch presentations made by the project team and provide feedback.
- One-on-one meetings can take place, provided the initiator of PPP proposal preparation has established appropriate processes to ensure fairness and transparency. These meetings typically produce effective results. In this case, the project information memorandum and accompanying materials should guide the main points of the presentation. Detailed documentation should be produced during the meetings.
- Running polls or delivering a questionnaire to ask interested parties about the most relevant points for the initiator of PPP proposal preparation to pursue, but without discouraging respondents from raising other potential points from their own perspective.

## 10.2. *Project marketing and communication*

While market sounding involves some project promotion to potential bidders, the public partner should also consider conducting other specific marketing activities in advance of the formal tender process and before developing a communication strategy. Provided the project is appropriately structured and tendered, these marketing and communication activities will encourage stronger competition during the tender process. This timing seeks to balance the following considerations:

- The private sector will pay less attention to the marketing of projects that have not yet been approved, as there is less certainty that these projects will proceed.
- The more time is available for private sector to form bidding consortia prior to the launch of the tender process, the stronger the competition in that tender process is likely to be and the higher the quality of the bids. Experience in mature PPP markets indicates that potential bidders will begin to form consortia several years in advance of the launch of a tender if the project is well marketed, well structured, and developed by a public partner with a reputation for fair, effective management of its PPPs.

### Box 10. Communication plan

A communication plan is a document that explains how, why, and when the project team will communicate with the project's stakeholders. Communication planning is a continuous process, with activities evolving as the project moves from one phase to another, and it is strongly related to stakeholder management. While the objective of communication planning does not change from one

phase of the project to another, the nature of the communication and the importance of specific stakeholders varies from time to time, depending on the project activities taking place and the current and future stakeholder-related risks.

Throughout the life of the project, the public partner's project team member responsible for developing and implementing the communications plan should monitor the possible emergence of new stakeholders and update the communication plan and stakeholder map accordingly. A communications plan should describe:

- (i) The role and relevance of each stakeholder and their potential impact on the project.
- (ii) How the views or opinions of stakeholders will be incorporated to the process.
- (iii) How the project team will communicate to stakeholders, including key messages for specific audiences.

The public partner's project team member responsible for developing the communication plan can use the template in Appendix 4 of this Manual to develop a plan. The template contains instructions on completing each section and each section's recommended content.

No single marketing approach is suitable for all projects, as the marketing required will depend on the context and the nature of the project. If as a result of the market sounding the initiator of PPP proposal preparation is confident that strong interest already exists from potential bidders who are aware of the project and familiar with the market, additional marketing might not be necessary. However, additional marketing is recommended if the initiator of PPP proposal preparation believes it is preferable to attract international bidders or if the project is unusual, particularly large and complex, or different from previous projects in Ukraine. A wide variety of marketing activities can be conducted for a PPP project, including:

- Conducting a "roadshow," with senior government officials giving presentations on the project in key locations where international contractors and financiers are based.
- Presenting at major international PPP conferences.
- Announcing the project in specialized media; for example, several regular PPP news publications exist that have large readerships among the international PPP community.
- Listing the project on a global PPP projects platform, such as the Global Infrastructure Hub's Global Infrastructure Project Pipeline (<https://pipeline.gihub.org/>).

The choice of marketing activities should be made based on their potential to attract a strong, competitive field of bidders, not necessarily the largest possible number of bidders, without marketing costs becoming excessive in the context of the size and importance of the project.

## 11. Analysis of efficiency

Following the completion of the feasibility study, the responsible body (in most cases the future public partner) conducts an analysis of efficiency. The AoE aims to assess the efficiency of implementing the

project using the PPP mechanism, based on the results of the feasibility study. Please see the boxes below for details on those responsible for developing the AoE and drawing a conclusion based on the results.

**Box 11. Authority responsible for analysis of efficiency: The AoE body**

According to Article 11 of Ukraine's PPP Law, analyses of PPP effectiveness are conducted by the authorities indicated below.

***For state property assets:***

- The central or local state executive body that in accordance with the law performs the functions of management of relevant state assets.
- The central state executive body that ensures the formation and implementation of public policy in the field of public-private partnership (MDETA), if no other body is defined under the law to manage the relevant state assets.

***For communal property assets:***

- The executive body of local self-government, authorized by the relevant village, settlement, city, district, or regional council
- The executive committee of the village, settlement, city council or the executive staff of the district, or regional council if no other body is designated by the relevant village, settlement, city, district, or regional council.

***For assets of the Autonomous Republic of Crimea:***

- The body authorized by the Council of Ministers of the Autonomous Republic of Crimea, or
- The Council of Ministers of the Autonomous Republic of Crimea.

If several public partners are involved in a public-private partnership, they jointly analyze PPP effectiveness.

For the feasibility study to receive a positive conclusion on efficiency, it should satisfy the following key criteria:

- I. The proposed technical solution for implementing the project is practically feasible and cost-efficient
- II. The project has acceptable environmental impacts
- III. The project has acceptable social impacts (for example resettlement, impact on livelihoods)
- IV. The project complies with all applicable legislation and regulations
- V. The economic benefits of the project outweigh the economic costs
- VI. The project services are affordable to users
- VII. The project is commercially and financially viable, i.e., it is able to generate sufficient revenues to cover costs and to provide an adequate return to lenders and investors
- VIII. The project is suitable for PPP procurement
- IX. The project is fiscally sustainable for the government, in both the short and the long run

The AoE results in a conclusion of the efficiency of implementing the project as PPP. In a situation where no line ministry is responsible for an asset, the MDETA develops the AoE and prepares the conclusion and the Cabinet of Ministers of Ukraine makes the decision on PPP implementation.

The feasibility study, together with the conclusion on result of AoE, is sent to MDETA for consideration and approval. The content of the conclusion on the AoE results is prescribed in the Decree of the Cabinet of Ministers of Ukraine No. 384, dated April 11, 2011. Please see Box 12 for the minimum content requirements.

**Box 12. Minimum content of the conclusion on the result of analysis of efficiency (AoE)**

- Information about the project: Initiator of the proposal; purpose of the project; justification of the need to implement the project; problems to be solved as a result of the project; compliance of the project goal with public policy priorities and Sustainable Development Goals; indicative period during which investments are made.
- Information on the public partner and other stakeholders that will be involved in the project; a description of their functions and role in the project.
- Information on the results of the study of market demand and of the presence of interest of market representatives in the project.
- Information on the technical requirements for the PPP assets (including technologies to be used).
- Information on the financial indicators of the project (analysis of assumptions of the financial model of PPP and results of its evaluation).
- Information on the factors that increase the efficiency of the project as a PPP compared to other mechanisms (public procurement, lease, etc.).
- Information on the socioeconomic consequences of PPP: information on the results of the cost-benefit analysis, in particular on expanding availability and improving the quality of services; the level of demand for goods (works, services); prospects after the end of PPP contract.
- Information on the environmental consequences of PPP implementation and prospects after the expiration of PPP agreement.
- Information on the risks of PPP and their distribution between partners, including assessment of fiscal consequences that may arise during PPP due to direct and indirect obligations of the public partner, determined by taking into account the approved by the MDETA Guidelines for the applying the methodology for identifying the risks of PPP implementation, undertaking their assessment, and determining the form of their management, as approved by the Cabinet of Ministers of Ukraine Decree No. 232, dated February 16, 2011.
- Information on the need for state support and the form of such support (if provided).
- Information on results of the legal analysis of the project, with substantiation of legal problems related to the project implementation and recommendations on possible measures necessary to overcome such obstacles to project implementation (including proposals for changes in legislation required for project implementation).

- Information on a form of PPP and a method of determining a private partner (competition, competitive dialogue, or other method determined by law).
- General conclusion on the expediency or in expediency of deciding to implement a public-private partnership.

The conclusion may also contain a list of measures to be taken before the announcement of the tender to determine a private partner or concessioner.

MDETA shares the documents (feasibility study and conclusion on the results of the efficiency analysis) with the Ministry of Finance (MoF) and other line ministries (LM) related to the project. The MoF is tasked with the review, assessment, and approval of the fiscal consequences that may arise from implementing a public-private partnership or from direct and indirect obligations of the public partner, and of the feasibility and possibility of state support; MoF also approves the conclusion. The Ministry of Environmental Protection and Natural Resources analyzes the possible environmental consequences of PPP implementation, taking into account the possible negative impact on the environment and providing appropriate proposals. The Antimonopoly Committee is tasked with analyzing compliance with the requirements of the legislation to protect economic competition and of the legislation covering state aid to business entities; the Antimonopoly Committee must provide appropriate proposals in these areas. The State Property Fund verifies the information on the signed lease agreements in relation to the PPP objects and other issues within its competence and submits relevant proposals. The other LMs related to the project are tasked with providing their comments and recommendations if any.

The MoF provides the MDETA with an approved conclusion and clear recommendations concerning it, or it forwards a notification of its refusal to approve the conclusion, providing the reasons for the refusal within 20 days of the receipt of the package from the MDETA.

Based on the comments and suggestions received from MoF and other LMs, MDETA approves (or refuses approval of) the conclusion and attaches remarks and recommendations to the conclusion before returning it to the body authorized to analyze the effectiveness of PPP (the potential public partner). Based on MDETA's approval, the relevant public authority either adopts a decision on the implementation of PPP, including determination of the form of PPP, or approves the decision on the in expediency of PPP.

### **Box 13. Authority responsible for deciding to implement the PPP: The decision body**

In accordance with Article 13 of Ukraine's PPP Law, decisions on implementing a PPP or on the in expediency of its implementation, the tender organizing, and approval of its results are made by the authorities noted below.

#### ***For state property assets:***

- The central body of executive state body that in accordance with the law performs the functions of managing the relevant state assets.
- The Cabinet of Ministers of Ukraine if the body performing the functions of managing the relevant state assets is not determined in accordance with the law.

***For communal assets:***

- The local self-government body in accordance with its powers under the Law of Ukraine "On Local Self-Government."

**For assets of the Autonomous Republic of Crimea:**

- The body authorized by the Council of Ministers of the Autonomous Republic of Crimea, or
- The Council of Ministers of the Autonomous Republic of Crimea.

In addition, in accordance with the Low of Concession, the decision on the expediency or in expediency of the concession is made as follows:

- for property of companies, 100 percent of shares of which belong to the state, the Autonomous Republic of Crimea, territorial community, or to company, 100 percent of shares of which belong to the state, that is transferred to concession together with state or communal assets:
- The relevant public authorities or local authorities carrying out corporate rights management functions in respect of such companies (Article 5 of the Law).

For the construction and further operation of public roads of state importance in the form of a concession:

- Cabinet of Ministers of Ukraine (Article 40 of the Law)



## Appendix 1. Risk register template

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
1	Land availability	<ul style="list-style-type: none"> <li>Land needed for the project is not available or has not been acquired.</li> <li>There is uncertainty over how much it would cost to acquire needed land and its timing.</li> </ul>	<ul style="list-style-type: none"> <li>This could increase the construction cost of the project beyond what is planned.</li> <li>This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.</li> </ul>
2	Land suitability	<ul style="list-style-type: none"> <li>Unanticipated adverse ground conditions are discovered.</li> </ul>	<ul style="list-style-type: none"> <li>This could increase construction costs as new land must be identified and purchased.</li> <li>This could increase construction costs as more expensive pilings or foundation strengthening must be built.</li> <li>This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.</li> </ul>
3	Environmental	<ul style="list-style-type: none"> <li>The project causes major environmental impacts on its surrounding natural resources.</li> </ul>	<ul style="list-style-type: none"> <li>Thousands of neighboring residents, dependent upon these natural resources, could lose their livelihoods or lives.</li> <li>The project could have to pay significant new, large sums to mitigate or correct these environmental damages.</li> </ul>

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
			<ul style="list-style-type: none"> <li>The project could have to pay significant new, large sums in fines, penalties, or punitive damages.</li> <li>The project may have to cease operations altogether or until it has successfully mitigated the damages.</li> </ul>
4	Health, safety and permits/licenses	<ul style="list-style-type: none"> <li>Regulations and standards on health, safety, permitting, licenses, etc., are not complied with.</li> </ul>	<ul style="list-style-type: none"> <li>Workers or neighboring residents could suffer poor health, injuries, or other safety consequences.</li> <li>The project could have to pay significant new, large sums to mitigate or correct these health/safety damages.</li> <li>The project could have to pay significant new, large sums in fines, penalties, or punitive damages.</li> <li>The project may have to cease operations altogether or until it has successfully corrected these violations.</li> </ul>
5	Currency availability and transferability	<ul style="list-style-type: none"> <li>Foreign currency is not available to transfer funds from local to hard currency.</li> <li>Profits earned by the PPP project inside the country cannot be repatriated to its owners outside the country.</li> </ul>	<ul style="list-style-type: none"> <li>If this risk is present during the tendering phase, then international economic operators will not bid on the project, and the tender may fail.</li> <li>If this risk is present during the operating phase, investors will not be able to earn their projected financial returns and may seek disputes, termination, or damages.</li> </ul>

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
6	Operating costs	<ul style="list-style-type: none"> <li>The costs of operating the project are higher than they were expected to be.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce the profitability of the projects for its owners and the creditworthiness or coverage ratio for its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from owners.</li> <li>Investors may try to request price or tariff increases from the competent state authority.</li> </ul>
7	Interest rate <sup>15</sup>	<ul style="list-style-type: none"> <li>Interest rates on the loans used to construct the project increase.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce the profitability of the projects for the private partner and the creditworthiness or coverage ratio for its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from owners.</li> <li>Investors may try to request price or tariff increases from the competent state authority.</li> </ul>
8	Exchange rate	<ul style="list-style-type: none"> <li>The local currency depreciates in value relative to the hard currencies in which the PPP project's loans and equity investments are denominated.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce the profitability of the projects for its owners and the creditworthiness or coverage ratio for its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from owners.</li> <li>Investors may require price or tariff increases from the competent state authority to be able to pay the higher debt service return on equity costs.</li> </ul>

15. This applies where variable interest rate loans are used to finance the project.

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
9	Market	<ul style="list-style-type: none"> <li>The actual quantity of outputs or services demanded by users or the off-taker is less than anticipated.</li> <li>The project's tariffs or prices are not adjusted according to the escalation formula agreed upon.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce revenue and therefore also the profitability of the project for the private partner and the creditworthiness or coverage ratio for its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from the private partner.</li> <li>Investors may view this as a contract violation and thus seek disputes, termination, or damages.</li> </ul>
10	Responsibility of design	<ul style="list-style-type: none"> <li>The public authority has provided a faulty or inappropriate investment design for the project.</li> </ul>	<ul style="list-style-type: none"> <li>This could increase construction costs as new, more expensive designs would have to be completed and built.</li> <li>This could increase operating costs more than anticipated as a result of having to follow a faulty or inappropriate design.</li> <li>This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.</li> <li>Investors may require price or tariff increases from the competent state authority to be able to pay these higher construction and operating costs.</li> </ul>
11	Output performance,	<ul style="list-style-type: none"> <li>The project's output performance standards specifications are</li> </ul>	<ul style="list-style-type: none"> <li>This could increase construction costs as new designs may have to be completed and built.</li> </ul>

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
	specifications, and standards	inappropriate for the project's needs. <sup>16</sup>	<ul style="list-style-type: none"> <li>• This could increase operating costs more than anticipated as a result of having to follow an inappropriate design.</li> <li>• This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.</li> <li>• The private party may have to pay penalties to the procuring authority for not being able to meet the project's minimum, contracted performance standards.</li> </ul>
12	Design data	<ul style="list-style-type: none"> <li>• Wrong or inaccurate data was used during the project's construction.</li> </ul>	<ul style="list-style-type: none"> <li>• This could increase construction costs as new designs may have to be completed and built.</li> <li>• This could increase operating costs more than anticipated as a result of having to follow an inappropriate design.</li> <li>• This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.</li> <li>• The private party may have to pay penalties to the public partner if it is not able to the project's minimum, contracted performance standards.</li> </ul>
13	Procurement and construction	<ul style="list-style-type: none"> <li>• Completion of project construction was delayed.</li> </ul>	<ul style="list-style-type: none"> <li>• This could increase construction costs through higher interest-during-construction costs.</li> <li>• This could delay when the project can earn its first revenues.</li> </ul>

16. Note that this remains a potential risk in almost all PPP projects and should be included as an identified risk, although in the next step it is usually allocated to the public authority.

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
			<ul style="list-style-type: none"> <li>The private partner may have to pay penalties to the public partner for not being able to start up operations by the contracted deadline.</li> </ul>
14	Construction cost	<ul style="list-style-type: none"> <li>Total construction cost was more than anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce the profitability of the projects for the private partner and the creditworthiness or coverage ratio for its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from the private partner.</li> <li>Investors may try to request price or tariff increases from the competent state authority.</li> </ul>
15	Program	<ul style="list-style-type: none"> <li>The completion of the project is delayed or there is a cost overrun due to faulty work scheduling.</li> </ul>	<ul style="list-style-type: none"> <li>This could increase construction costs through higher interest-during-construction costs.</li> <li>This could delay when the project can earn its first revenues.</li> <li>The private partner may have to pay penalties to the public partner for not being able to start up operations by the contracted deadline.</li> </ul>
16	Operation risk	<ul style="list-style-type: none"> <li>The project is not able to function at the full performance standards required.</li> </ul>	<ul style="list-style-type: none"> <li>This could reduce the project's revenues if its outputs are lower than anticipated.</li> <li>This could increase operating costs if more money must be spent on operating costs to achieve higher levels of output.</li> </ul>

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
			<ul style="list-style-type: none"> <li>This could significantly delay construction if a new, corrected design must be completed and built.</li> <li>The private partner may have to pay penalties to the public partner if it is not able to meet the project's minimum, contracted output or performance standards.</li> </ul>
17	Maintenance	<ul style="list-style-type: none"> <li>The project and its assets are not properly maintained.</li> </ul>	<ul style="list-style-type: none"> <li>The project could face unscheduled outages, reducing its revenues, creditworthiness, and profits.</li> <li>The project may face higher and sooner than anticipated asset rehabilitation, renewal, and replacement costs on its unmaintained assets.</li> <li>If the project is not able to meet its minimum, contracted availability standards, it may need to pay penalties to the public partner.</li> </ul>
18	Ancillary features	<ul style="list-style-type: none"> <li>Ancillary infrastructure services that the project needs, such as approach roads, interconnection facilities, etc., are not provided and completed on time.</li> </ul>	<ul style="list-style-type: none"> <li>This could delay the date when the project can earn its first revenues, reducing its creditworthiness for lenders and profitability for investors.</li> <li>The private partner may seek either price increases or damages from the public partner or other public body responsible for completing and delivering the ancillary services on time.</li> </ul>
19	Transfer of assets	<ul style="list-style-type: none"> <li>The condition of the project's assets at the end of the contract term, when they are</li> </ul>	<ul style="list-style-type: none"> <li>This could increase public costs of renewing and rehabilitating the transferred assets in order to keep them operational.</li> </ul>

#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
		transferred back to the state/municipality, is not in compliance with the PPP contract's maintenance and performance standards.	
20	Regulatory	<ul style="list-style-type: none"> <li>The terms and conditions of the PPP contract about the private partner's ability to collect revenues and to seek reasonable tariff increases in accordance with the contract's price escalation formula are not fulfilled; or</li> <li>New laws or regulations are passed that increase the costs or reduce the revenue of the PPP contractor without fair compensation.</li> </ul>	<ul style="list-style-type: none"> <li>This would reduce the profitability of the projects for the private partner and the creditworthiness, or coverage ratios, of its lenders.</li> <li>Lenders may require more investments, such as reserve accounts, from the private partner.</li> <li>The private partner may claim a dispute or seek compensation damages from the public partner for the lost revenue, increased costs, or lost profits from the regulatory action.</li> </ul>
21	Political/ sovereign	<ul style="list-style-type: none"> <li>The public authority nationalizes the project.</li> </ul>	<ul style="list-style-type: none"> <li>The private partner may seek damages for breach of contract.</li> <li>The public partner may compensate the private partner at a level below its costs, making it unable to repay the balances of the loans it owes to lenders and expected profits to owners.</li> </ul>



#	Risk Name	Risk Description	How This Risk Impacts the Specific PPP Project
			<ul style="list-style-type: none"> <li>If there is political risk insurance (such as from the Multilateral Investment Guarantee Agency (MIGA)) or a partial risk guarantee (such as from the WB or the European Bank for Reconstruction and Development), these may be called, and the public partner may end up owing these multilaterals.</li> </ul>
22	Force majeure	<ul style="list-style-type: none"> <li>The project is unable to perform due to terrorism, riots, war, or natural catastrophes (earthquakes, flooding, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>The project may be terminated if damage is fatal or complete.</li> <li>The project may have a specific time limit within which to return to operation.</li> <li>If the project has applicable insurance, the private partner may file a claim.</li> </ul>

## Appendix 2. Value-for-money assessment

### *Qualitative VfM assessment*

#### **Object of the Qualitative Assessment**

It is important during Phase 2 to update and confirm the VfM assessment completed as part of the PPP review in Phase 1, as the project's initial size, scope, cost estimates, and risks tend to change (often increasing) during the preparation of the PPP proposal. As new demand forecasts are made, new stakeholders are consulted, the costs of remediating environmental impacts are added, new risks are identified and allocated, etc., it is reasonable that changes will occur in the likelihood and estimated size of previous estimated value for money benefits.

Through answers to questions about the project, its risks, and any alternative delivery mechanisms, this task determines whether it is likely that the PPP mechanism can provide better VfM. The following questions revisit those previously identified and answered during Phase 1 PPP project selection.

#	Category	Key Concerns to Determine
1	<b>Financing</b>	<ul style="list-style-type: none"> <li>Is the project investment size large enough to justify the significant upfront transaction costs (due diligence) of a PPP?</li> <li>Does the payment structure (i.e., payment-for-performance) provide clear incentives for better risk management by the private partner?</li> </ul>
2	<b>Bankability</b>	<ul style="list-style-type: none"> <li>Are there clear indications or precedents of private sector interest?</li> <li>Does the project increase competition in the market and incentives to improve efficiency?</li> <li>Is financing for private investors clearly available?</li> </ul>
3	<b>Implementation</b>	<ul style="list-style-type: none"> <li>Does the private sector have the capacity to implement the project, and does the public partner the capacity to implement the PPP transaction?</li> <li>Are there clear, measurable, and objective output performance standards?</li> </ul>
4	<b>Risk transfer</b>	<ul style="list-style-type: none"> <li>Are risks allocated to the party that can best manage them?</li> <li>Is the contract flexible enough to handle changes in demand?</li> <li>Does the contract incentivize innovation and integration of design, construction, and operations?</li> </ul>
5	<b>Maintenance and rehabilitation</b>	<ul style="list-style-type: none"> <li>Does the contract clearly deal with risks and incentives for proper maintenance throughout the life of the contract?</li> </ul>

Based on the frequency of positive answers to the above questions, the project will fall within one of three possible scenarios.

- **The project meets all or most of the criteria.** The project possesses characteristics inherent to PPPs highly likely to be able to provide VfM; should proceed to the quantitative VfM assessment.
- **The project meets some of the criteria.** The project has a moderate likelihood of generating VfM benefits if procured as PPP. After addressing the areas for improvements, may proceed to the quantitative VfM assessment.
- **Project meets few or none of the criteria.** The project has low or no likelihood of generating VfM benefits if procured as PPP; it should be reconsidered for suitability as a PPP, and other procurement methods should be considered.

### *Quantitative VfM assessment*

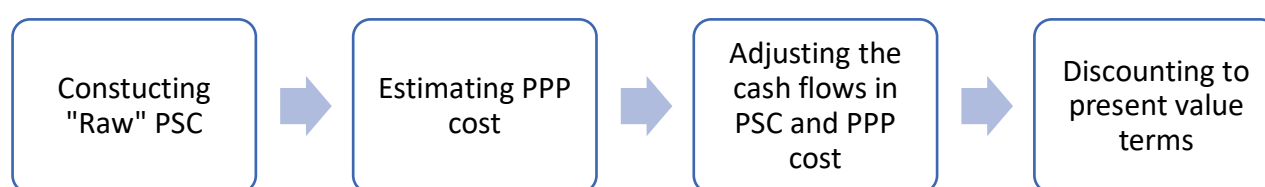
#### **Objective of the quantitative assessment**

The quantitative assessment is concerned with comparing the estimated costs of the public and private sector delivery models to identify the least costly procurement option. When collecting project information, it is important to keep the whole-of-life cost concept preeminent.<sup>17</sup> Therefore, to effectively compare the PSC and PPP cost, total life cycle costs should be estimated. In addition, to facilitate a like-to-like comparison, it is assumed that the quality of the project is the same regardless of the procurement method.

#### **General overview of the quantitative VfM analysis**

The process of quantitatively assessing VfM in a project is presented in Figure 1.

**Figure 1. Quantitative VfM assessment process**



The process commences with collecting and/or verifying project information (such as financial variables, CAPEX, OPEX, etc., of delivering a project from the public perspective) to create a “raw” PSC model, that is, direct and indirect costs less revenue that are not yet risk adjusted. At the same time, these inputs are used for PPP cost scenario of delivering the project using a PPP procurement method. This is a financial model for PPP project based on estimated costs, revenues, and financial structure. To be able to compare these two options fairly, the differences in the cash flows must be adjusted for estimated risks,

17. A whole-of-life costing approach is expected to lower the lifetime cost of the project. PPPs integrate up-front design and construction with ongoing operations and maintenance under the responsibility of one company. This creates an incentive to carry out each function in a way that minimizes total lifetime project cost.

competitive neutrality,<sup>18</sup> and financing costs. Finally, the risk-adjusted PSC and PPP cost are discounted to present value terms and compared to determine which solution offers VfM.

It is important to note the following points:<sup>19</sup>

- The public sector option should be based on the same scope as the PPP component of a project only (particularly relevant for social infrastructure PPPs). This means that by the time the initiator of PPP proposal preparation is ready to do a VfM assessment, the scope and output specification that describes the range of services to be delivered and the performance requirements are well defined and specified. They should apply to both the PSC comparator and PPP model.
- The public sector option need not assume everything will be done within the public sector (outsourcing and third-party contracts).
- Project information and construction of the PSC and risk-adjusted PPP cost should be based on a project-specific financial model (not simply a desktop analysis).
- The public sector option should be a realistic estimate of what an efficient public option would involve.

### Step 1: Constructing a raw public sector comparator

The “raw” public sector comparator is a theoretical cash-flow model of a traditionally procured project (using outsourcing or any form other than PPP), taking into account direct and indirect costs and revenues over the project life cycle before taking into account adjustments for competitive neutrality and risk.

The process of constructing a “raw” PSC is portrayed in Figure 2.

**Figure 2. Process of constructing “raw” PSC**



To create the raw public sector comparator, the initiator of PPP proposal preparation needs to collect/estimate the project’s life-cycle costs, which include capital costs (CAPEX), operational costs (OPEX), maintenance costs, reconstruction and rehabilitation costs, and overhead costs (indirect costs). The collection of financial information can also be broken down into direct and indirect cost if that is easier to conceptualize. Expected cash flows must be forecast over the entire life of the project. Table 4 provides an example of different categories of CAPEX, OPEX, and revenue sources for a toll road project.

18. Competitive neutrality allows a more leveled comparison between public and private procurement options.

19. Commonwealth of Australia, Department of Infrastructure and Regional Development (2008), *National Public Private Partnership Guidelines*, Vol. 4: *Public Sector Comparator Guidance*.

Table 4. Example of CAPEX, OPEX and revenue sources in a toll road project

	Direct	Indirect
Capex	Direct capital expenditure costs are those specifically associated with the delivery of the new services. They should be accounted for the year in which they are incurred.	Indirect costs are other costs not directly related to the provision of services, such as capital costs relating to the partial use of buildings or equipment (e.g., rent).
	<ul style="list-style-type: none"> <li>• Planning and permitting</li> <li>• Project administration</li> <li>• Procurement</li> <li>• Design and engineering</li> <li>• Construction</li> <li>• Raw materials</li> <li>• Labor</li> <li>• Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Partial commitment of plant and equipment</li> <li>• Partial use of new administration buildings</li> </ul>
OPEX	Direct operating costs are associated with the daily operation of the infrastructure to provide the services to be provided as in terms of the technical specification and the costs associated with maintaining the asset in the condition required to deliver the specified outputs. OPEX should be based on historical cost information.	Indirect costs are other costs not directly related to the provision of services.
	<ul style="list-style-type: none"> <li>• Raw material and equipment for maintenance</li> <li>• Employee expenses (wages, training, travel, etc.)</li> <li>• Insurance</li> <li>• Management costs</li> <li>• Maintenance costs</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate overhead (ancillary running costs: power, cleaning, stationery, etc.; noncore IT and equipment for administration use)</li> <li>• Administrative overhead (employees not directly involved with service, facilities management, project management)</li> </ul>
Revenue	<p>The costs of delivering the service should be offset by any revenues collected. When forecasting revenues, consideration should be given to historical demand and prices charged for the same or similar services and applicable government policy relating to fees and charges.</p> <ul style="list-style-type: none"> <li>• User charges</li> <li>• Indirect commercial revenue (internal concessions, rental, and lease payments; sale of development rights)</li> </ul>	

It is important to consider timing when identifying and calculating project cash flows because project costs and revenues are adjusted for present value. This is similar to adjusting benefits and costs for present value during economic analysis.

### Step 2: Calculating the PPP cost<sup>20</sup>

A PPP cost is an estimated financial model of government payments in a PPP project based on the preliminary costs and financial structure. The cash flows in the PPP cost should reflect the nature and extent of the private sector efficiencies in the delivery of public goods or services. Many PPP cost models can be prepared depending on the PPP modes and risk allocation strategies. Once actual bids are received, the PPP cost should be replaced with the financial information from the bidders.

The key steps in developing the PPP model cash flow are as follows:

- I. Calculating the capital-related cash flows (if the public partner decides to make a contribution to finance the project through a grant or equity contribution, the cash flows should be quantified for the years in which they are made).
- II. Quantifying the payments during project operation (such as performance-based availability payments, etc.). Assumptions on use should be aligned with the demand forecast and with the assumptions made under the PSC.
- III. Calculating the value of the asset transferred. If the assets used to provide the service are to be transferred to the government at the end of the contract, and they have useful lives longer than the term of the contract, residual values should be offset against the costs. The calculation of the residual values should have regard to the nature of the assets, historic residual value estimates, the expected market for the assets, and the expected monetary benefit or cost to the government.

### Step 3: Adjust the “raw” PSC and PPP cost

As stated previously, the PSC and the PPP cost have different cash flows. For starters, PPPs may involve higher transaction costs than the traditional procurement method. Furthermore, other costs associated with developing a project as PPP involve additional considerations, such as:

- *Defining detailed output specifications.*
- *Procuring transaction advisors with a variety of skills* (legal, financial, and technical) to support the initiator of PPP proposal preparation in developing project due diligence, structuring, and tendering the PPP contract. Standard contracts, guidebooks, and streamlined PPP processes can help to mitigate costs.
- *Bidder communication and negotiation.* As the PPP process matures and government capacity increases, the cost for the government associated with bidder communication and tender preparation will decrease.

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20. U.S. Department of Transportation (December 2012), *Value for Money Assessment for Public-Private Partnerships: A Primer*, Federal Highway Administration, Innovative Program Delivery.

- *Costly project design as bidders push to provide efficient and novel solutions.* However, the private sector will bear the burden of design, and thus the direct cost to government will be lower. The design costs for the government will depend on the bid price. In a more mature PPP market with more bidders, these costs will be driven down.
- *Oversight costs, such as PPP contract monitoring and management.* PPP projects require active monitoring from the government as payments are output driven.

Hence, to allow for a fair comparison, the PSC and PPP costs should be adjusted for estimated risks, competitive neutrality, and financing costs.

#### *Adjusting for estimated risk<sup>21</sup>*

The PPP delivery method may feature additional risks not present in the traditional delivery method, such as delays caused by government, right-of-way acquisition, force majeure, etc. In addition, the risk valuations may change as the private sector may be able to provide better risk management due to stronger financial incentives.

Therefore, one of the critical tasks in the VfM calculation is risk assessment. The most important consideration for the risk assessment is the accuracy, realism, and completeness in its valuation. The PSC must be defined and costed to provide the same level and quality of service expected of the PPP option. Therefore, risks associated with the delivery of services to required standards must be priced in the PSC.

Each risk should be included as a separate cash flow item quantified by multiplying the expected financial consequences by the probability the risk will occur (please refer to Task 8 of this Manual to see how the consequences and probabilities are assessed), and each cash flow should be determined for the life of the project. The raw PSC should be adjusted by including all cash flows associated with all risks (retained and transferred) under this model. In practice, many projects are subjected to several different risk events simultaneously. Combining the estimated size of each risk's impact with the estimated probability of that risk to produce a probability-weighted value for each is expressed as an additional cost to the baseline PSC. Adding the probability-weighted risk value to the PSC more accurately estimates the actual full costs of the project. This also indicates which risks might then be selected for transfer to a service provider to provide better value for the public's money. The raw PPP cost model should be adjusted by including all cash flows associated with retained risks in terms of the contractual arrangements for the PPP. The cash flows associated with the transferred risks can also be aggregated separately.

One of the risk mitigation strategies is insurance. The cost of insurance should be added to the PSC and PPP model cash flows. However, the payout from insurance should offset the financial impact of a risk event when calculating the cash flows of transferred and retained risks. Other mitigation strategies taken by the government will similarly affect cash flows and risk valuations and should be considered.

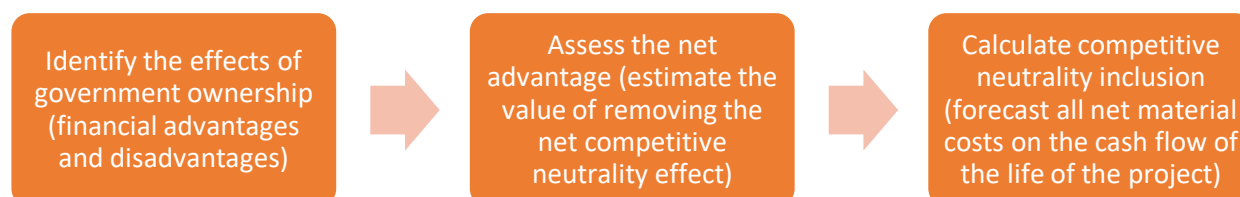
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21. The discussion on risks in this section is from the VfM perspective. For a more comprehensive discussion on risk assessment, please refer to the corresponding task in the Phase 2 Manual, Task 8.

### *Adjusting for competitive neutrality*

Competitive neutrality is the recognition that significant government business activities that compete with the private sector should not have a competitive advantage or disadvantage due simply to government ownership and control.<sup>22</sup> It does not include differences in performance or efficiencies that arise in a competitive market and should be distinguished from differences in cost levels between the public and private sector. Competitive neutrality intends to correct the PSC for biases arising from public ownership and management. For example, in many countries, publicly owned companies are exempt from some types of taxes, construction permits, or environmental permits.<sup>23</sup> PPP delivery, on the other hand, often carried out by special purpose vehicles (SPVs), may result in complex multilevel tax implications. For instance, if the SPV itself is taxed and the subcontractors are additionally taxed, these taxes will be built into the bid price. The process of calculating competitive neutrality is illustrated in Figure 3.

**Figure 3. Competitive neutrality calculation process**



Competitive advantages from government ownership typically include taxes. Competitive disadvantages might also arise from government ownership, e.g., increased reporting requirements. Competitive neutrality costs must be identified and adjustments made to ensure equivalent treatment throughout the period of the project. As the VfM assessment is based on cash flow calculations, competitive neutrality adjustments should be based on cash flows rather than accruals. Consequently, non-cash items, such as depreciation, should not form part of the competitive neutrality adjustment.

### *Adjusting for financing costs*

Differences in the financing mechanisms used in PPP cost and PSC lead to different financing costs for the two delivery options. Many public procurement infrastructure projects are financed by bonds supported by project revenues or other public sector obligations. While certain cases may allow for the private sector to take advantage of these financing mechanisms, the financing of PPPs is often completed with direct loans or corporate bonds. The financing aspects of the proposed project must also be built into the financial model of the PSC and the risk-adjusted PPP cost.

22. <http://unctad.org/en/Pages/DITC/CompetitionLaw/ResearchPartnership/Competitive-Neutrality.aspx>.

23. <http://unctad.org/en/Pages/DITC/CompetitionLaw/ResearchPartnership/Competitive-Neutrality.aspx>, footnote 20.



### Step 4: Discounting to present value terms

The final step in VfM assessment is to compare the present values of PSC adjusted and the PPP alternative (since they are different amounts of cash flows that spread out over time).<sup>24</sup> All present value calculations require first selecting a discount rate that reflects the total level of risks and uncertainties the given project faces. The discount rate applied can have a significant impact on the result of the VfM analysis.

It is recommended to apply two discount rates that differ in timing and amounts into the present values to enable corresponding PSC and PPP scenario comparison.

1. The PSC discount rate is the nominal risk-free cost of capital because it reflects the current cost of debt for both government and the private sector and its use avoids conversion between real and nominal rates. The cash flows and other assumptions should also be set in nominal terms as it is important to be consistent in the terms used for the calculation.
2. The PPP discount rate is the nominal risk-free cost of capital adjusted for the systematic risk transferred to the private sector. The more systematic risk transferred, the higher the discount rate.

#### Box 14. Systematic and nonsystematic risks and their importance in VfM assessment

Allocation of systematic risks in PSC and PPP options, as well as correlation with the acceptable rate of return sought by the private sector, is at the core of the VfM assessment and determination of the appropriate discount rate. Under a PPP arrangement, systematic risk could be divested to another party for a compensatory payment for bearing the risk (also called a *systematic risk premium*). The transfer of this risk to the benefit of the public sector, however, will come at a cost to the public sector, through a higher price in private sector bids. As more systematic risks are transferred to the private sector, a higher rate of return is justified as the risk premium is apportioned to more accurately reflect the level of transferred systematic risk. Risk that can be diversified away by investors is not recognized in the discount rate. However, such risk, should be reflected in the risk adjusted project cash flows.

The systematic risks (or *market* or *undiversifiable risks*) are operations, maintenance, and heavy maintenance costs risks and demand (revenue) risks. These risks cannot be eliminated by investing in other assets since they increase the uncertainty of payment/receipt of the cash flows. Construction risks (design, land acquisition, construction costs) and renegotiation risks, on the other hand, are nonsystematic (also known as *project-specific* or *diversifiable*) risks.

Using a single discount rate for alternative options (PSC and PPP) will not reflect the amount of systematic risk that may have been transferred to the private sector under a PPP arrangement. If two investments

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24. The public sector's cash flow estimates tend to be "front-end loaded" (i.e., high costs in the first two to three years to pay for public project construction, and lower operations and maintenance costs in later years), whereas the costs of PPP tend to be "back-end loaded," as payments are typically only made to the private partner after construction is completed and tend to continue as levelized availability payments until the end of the PPP contract term.

are identical, but one contains more risk, the rational investor will take this into account in evaluating its options. All cash flows should be discounted at a rate that properly reflects their risk. If an average discount rate is applied across all projects, it would advantage risky projects (by demanding a return lower than the risk warranted) and disadvantage low risk projects, by demanding excessive returns from them. The result would be that government would tend to overinvest in risky projects and underinvest in low risk projects.

However, no international consensus exists on the use of different discount rates. While Australia used the approach described below, in other jurisdictions (the United Kingdom and many countries in Latin America), the use of a single discount rate is adopted for the VfM process.<sup>25</sup>

### *Interpreting the VfM assessment output*

The expected risk-adjusted discounted cash flows give a single net present value (NPV) for the PSC and PPP cost. This allows a direct comparison to be made between the PSC and the PPP solution on a quantitative basis. On a net cost basis, if the NPV for the PPP cost model were lower than the NPV for the PSC, it would be an initial indication that the PPP would deliver VfM. However, this result should be interpreted together with the results of the other feasibility assessments, particularly where the difference in the NPV is small or where small variations in input assumptions have a material effect on the NPV values and/or where there is a high level of uncertainty around inputs, and/or outputs are highly sensitive to the input variables. In such cases sensitivity testing should be performed to determine the robustness of the NPVs of the PSC and PPP model to individual changes in a variety of key assumptions. Scenario analysis could also be undertaken by examining simultaneous changes in a number of key variables. Variables that are usually analyzed include the length of the construction and concession period, inflation, construction costs, schedule and completion dates, demand for the service, total operating costs, maintenance costs, third-party revenue, and residual value.

It is also important to note that the VfM is a relative concept, meaning that knowing the VfM of a particular option in itself is not necessarily useful. The VfM concept achieves its full meaning when used to compare options. There may be significantly different non-valued effects (such as socioeconomic, environmental, etc.) for the different procurement approaches, which should be assessed and taken into account by the procuring authority in the final decision on the procurement method. The decision about the procurement approach (PPP or traditional) is then based on both quantitative results and the analysis of the non-valued benefits (if relevant) for the procurement approaches considered.

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25. For instance, see the discussion in Grimsey, Darrin, and Lewis (2004), "Discount debates: Rates, Risk, Uncertainty and Value for Money in PPPs," *Public Infrastructure Bulletin* 1, no. 3, art. 2. Available at <http://epublications.bond.edu.au/pib/vol1/iss3/2>.

## Appendix 3. PPP projects initiated on a proposal by a private proponent: Unsolicited proposals

The PPP Law allows the public partner to accept PPP proposals prepared and submitted by private proponent (preparation of the concept document is not ensured, however).<sup>26</sup> These are generally called *unsolicited proposals*, or USPs, meaning they were initiated by parties other than public authorities for the purpose of concluding a PPP contract, not in response to a government solicitation or program.

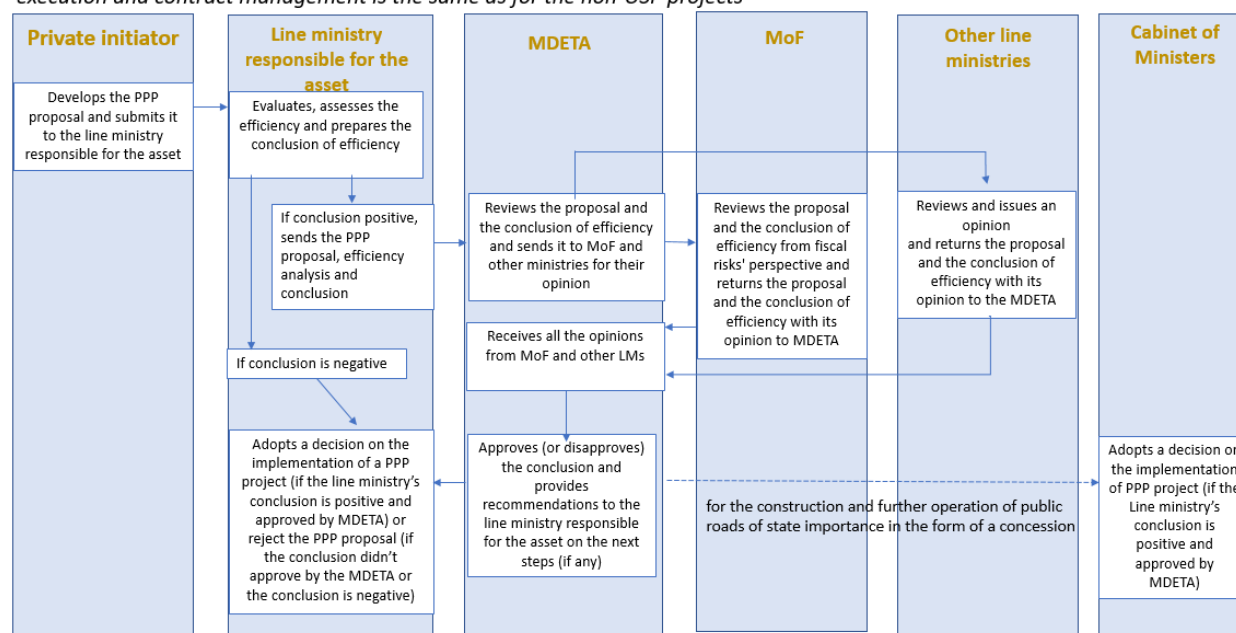
No detailed regulations present the approved process for evaluating and managing USPs in Ukraine. The PPP Law defines the possibility of USPs and lists documents required as part of the USP package (the same as for those prepared by public authorities).

Once the private proponent submits the feasibility study (FS) for the PPP project to an appropriate AoE body for consideration, the AoE body is responsible for evaluating the proposal package and deciding if it merits an efficiency analysis. Figure 4 illustrates this process.

Figure 4. Process and functions in USPs

### ***If a line ministry is responsible for the asset:***

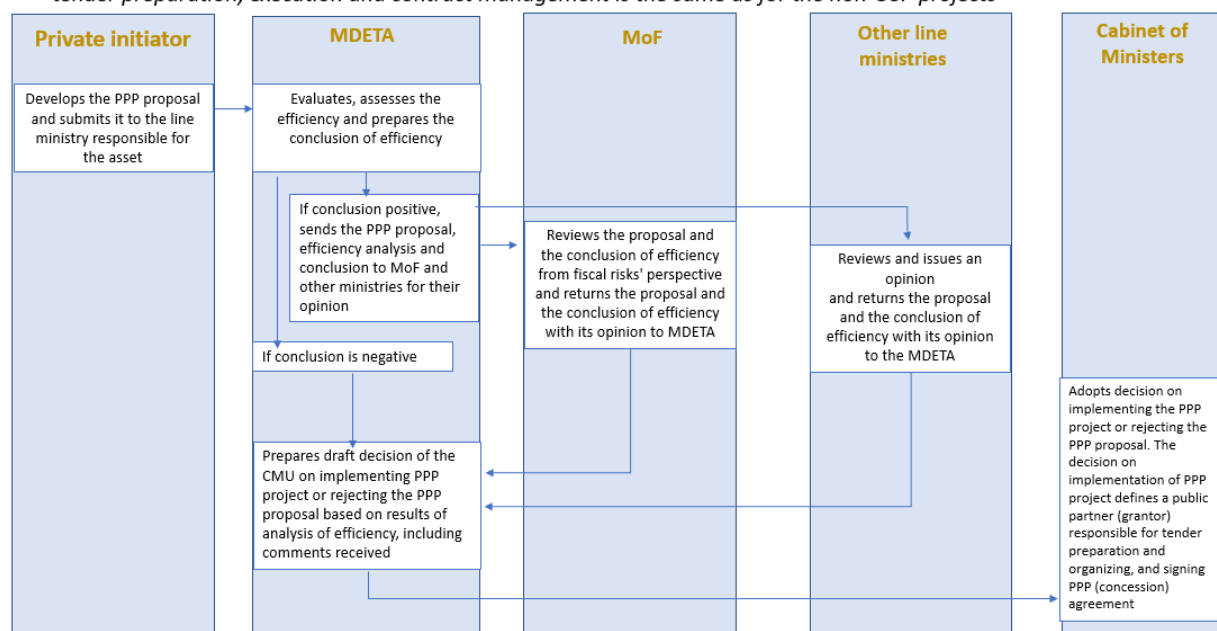
*Pre-tender processes and activities. Following the decision to implement the project the process of tender preparation, execution and contract management is the same as for the non-USP projects*



26. See the PPP Law, Art. 10, Para. 1.

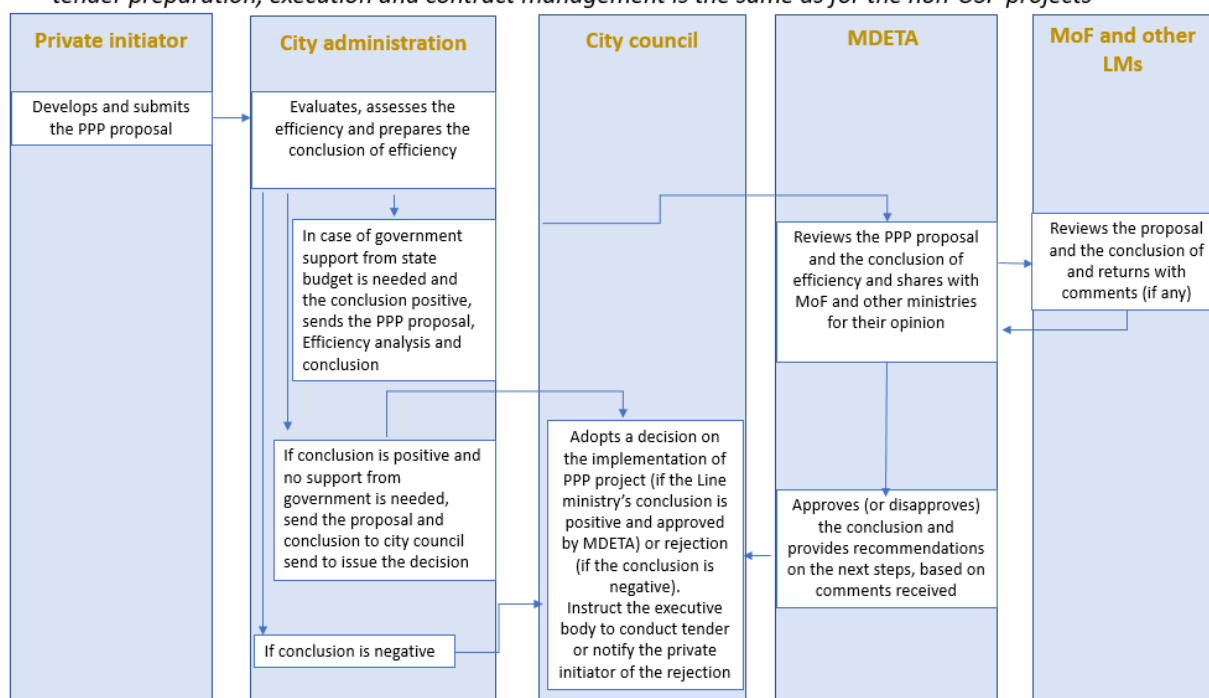
### If no line ministry is responsible for the asset:

Pre-tender processes and activities. Following the decision to implement the project the process of tender preparation, execution and contract management is the same as for the non-USP projects



### For municipal assets:

Pre-tender processes and activities. Following the decision to implement the project the process of tender preparation, execution and contract management is the same as for the non-USP projects



In accordance with PPP Law, a USPs is rejected if:

- Central, local executive bodies, local governments, authorities of the Autonomous Republic of Crimea, the National Academy of Sciences of Ukraine, branch academies of sciences, state, communal enterprises, institutions, organizations, business associations, 100 percent of shares (shares) of which belong to the state, territorial community or the Autonomous Republic of Crimea, have already begun to prepare a PPP proposal that fully or partially coincides with the USP submitted, particularly if a decision was made on the FS preparation. This ground for refusal may not be used if more than one year has passed since the decision on the FS preparation has been adopted.
- A responsible public authority is already conducting an analysis of the effectiveness of a PPP proposal that fully or partially coincides with the USP submitted for consideration.

The guidance provided in this section is based on lessons learned and on accepted good international practice.

A well-articulated submission framework for any USP forwarded for consideration by a private proponent will help ensure that the concept note meets the public partner's requirements and is processed efficiently. It also provides guidance to private proponents for developing quality proposals that comply with the public partner's requirements. Submission compliance results in the public partner (AoE body) informing the private proponent in writing of whether the submitted proposal is compliant with the established rules and procedures. Compliant proposals move on to next subtask of USP evaluation.

For starters, the public partner (AoE body) should clearly state the documents and project information the private proponent must provide as part of the PPP proposal (feasibility study) submission.

The private proponent should be aware that the public partner may use the feasibility study to establish technical and function requirements for the project during the project tender preparation; in accordance with the PPP Law, the private proponent will be reimbursed by the winner of the tender if it is not selected during procurement (Phase 3).

To be able to sort through or avoid receiving a large number of proposals, as well as to discourage poor quality and opportunistic proposal submissions, a public partner should consider minimum submission requirements and conduct a compliance check from the start, as established by the current legislation of Ukraine.

### *Evaluation of feasibility studies submitted as USPs*

As with non-USPs, having received the PPP proposal (feasibility study) from the proponent, the AoE body undertakes an analysis of efficiency (AoE) with the purpose of concluding whether the proposal can be implemented as PPP. The USP should not be treated any differently in terms of the development and preparation process than a publicly initiated PPP project.

In addition to following the guidelines and criteria suggested for AoE of non-USP projects, the USP should undergo additional scrutiny and evaluation to determine whether it meets public objectives and basic feasibility criteria. The public authority should also set a timeframe for evaluation. USPs that do not meet these requirements should not be considered for entering the regular PPP project development cycle. An AoE body may not accept USPs that are not in the public interest or spend significant resources evaluating projects that do not meet critical criteria. Poorly defined procedures and timelines may create uncertainty regarding how to process and evaluate USPs, leading to delays in evaluating and implementing the project.

Criteria for evaluating privately initiated PPPs should align with criteria used to evaluate publicly initiated PPPs. The principal elements considered in evaluating a proposal are its technical and programmatic relevance to the relevant public authorities' objectives, its public merit, its overall cost (exclusive of any cost sharing), and its economic benefits to the public authority and the private proponent.

Evaluation criteria generally fall into the following categories:

1. *Public interest.* Determines if the USP project advances the public interest and aligns with the infrastructure priorities of the government/municipality and national sustainable development goals, wherever relevant.
2. *Project feasibility.* Evaluates the proposed project's technical, financial, economic, environmental, and social feasibility at a preliminary level.
3. *PPP suitability.* Assesses whether the proposed project is expected to be suitable for PPP delivery, based on factors such as the proposed risk allocation and other VfM criteria.
4. *Affordability.* Assesses the proposed project's implications for government support, including direct and contingent liabilities.

#### Box 15. Indicators for USP evaluation

For reference purposes, consider the following indicators to guide the development of the detailed evaluation criteria for USPs and to ensure transparency and accountability in USP decision making.

##### **Public interest:**

1. The USP should be consistent with national priorities and objectives and the national sustainable development agenda.
2. The USP should align with the relevant sectoral policy priorities and other long-term sector plans.
3. The USP should address a demonstrated infrastructure need that has been articulated in relevant infrastructure plans.
4. The USP should propose an innovating and/or cost-effective service-delivery mechanism for an important public service.
5. The USP should not create a monopoly in terms of service provision without protecting the public interest.

**Project economic and financial feasibility:**

1. All assumptions for major cost components included in the preliminary assessment of financial feasibility should be reasonable and in line with current market conditions.
2. Assumptions about tariffs/prices included in the preliminary market-demand analysis should be justifiable and in line with the market and comparable projects.
3. Assumptions regarding operations and maintenance costs of the project should be reasonable.
4. If a preliminary financial model is submitted, all assumptions and projections over the project horizon period should be reasonable.
5. Major sources of funding and financing for the project should be identified and reasonable.
6. Important financial ratios (IRR and NPV), should be realistic.
7. If expected economic benefits generated by the project are included in the CBA, they should be reasonable.

**Project technical feasibility:**

1. PPP project site options should either be available or not too difficult to acquire by the state/municipality.
2. Technical scope of the project should be feasible, and specifications and standards proposed should meet project and industry requirements.
3. Preliminary design, including any innovative technological solutions proposed, should be feasible and practical.
4. Operations and maintenance plans should be technically feasible and practical.
5. Major environmental or permitting clearances needed should be clearly described, along with reasonable plans for obtaining the clearances, and incorporated in the project schedule.
6. Proposed project schedules should be practical, attainable, and manageable.
7. Major technical and operational risks of the project should be identified, along with an appropriate plan for managing risks.

**PPP suitability:**

1. PPP delivery for the USP should be allowed under existing legal frameworks.
2. The USP project must be of a sufficient scale and complexity to warrant the decision to select the project as a PPP.
3. The proposed roles of the public and private sectors should be appropriate and reasonable.
4. The proposed risk allocation should be appropriate and reasonable.
5. On the basis of comparable projects, it should be realistic to expect that PPP delivery for the USP offers value for money.<sup>27</sup>

**Affordability:**


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27. USPs and public sector promoted projects should be subject to the same VfM criteria.

1. Any direct and indirect contingent liabilities of the project to be borne by the public authority should be acceptable from the government's perspective.
2. The level of government support, if requested, should be affordable to the state/municipality from a fiscal perspective.
3. Any user fees or charges should be realistic and in line with willingness to pay.

Using the outline criteria, the AoE body should determine if the USP meets the evaluation criteria. It should apply benchmarks and market testing (if relevant) to evaluate the project. Elements that may be examined during benchmarking may include, inter alia: cost components; revenue assumptions; technical solutions; proposed contractual terms and conditions and risk allocation; and proposed government support. Benchmarking involves high-level, non-quantitative comparison of similar projects, preferably in the same sector (or sectors with similar characteristics) and preferably in the same country or region.

It may also be necessary to hire consultants to support the evaluation and review of the proposal from the private proponent. Proposals should be reviewed by AoF body staff knowledgeable in the PPP project area/sector. The costs of review are borne by the public authority. Experienced PPP consultants typically have access to detailed information about PPP projects in similar countries and sectors, or with similar project characteristics, and can assist the AoE body in carrying out the benchmarking exercise.

USPs that receive a positive AoE conclusion approved by MDETA proceed to Phase 3 tender preparation. The procuring authority (future public partner) is permitted to use the USP's development proposal to establish functional and technical requirements for the project during the feasibility assessment, provided that the development proposal is adequate and the analysis/design and findings are accurate as determined during the evaluation process in the preceding subtask. In accordance with Article 14 of the PPP Law, if the tender for determining a private partner is held in accordance with the USP, the private proponent may be recognized as the winner of the tender if its tender proposal received the highest score or if it agrees to enter into a PPP contract on the terms of the highest bid. If the private proponent does not become a private partner, the winner of the tender remunerates the proponent for the PPP proposal preparation in the amount not exceeding 2.5 percent from the total proposed investments for implementing the project.<sup>28</sup>

Good practices to consider:

1. A USP must be compliant with Ukraine procurement rules (as transposed in the PPP Law and Law on Concession). Other funders and financiers will usually also require this obligation to be met as a condition of funding/financing.
2. A favorable comprehensive evaluation of a USP does not, in itself, justify awarding a contract without a full and open competition. Being the proposal-proponent does not provide any rights or privileges for the private proponent other than the right for remuneration.

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28. CMU Decree No. 384, April 11, 2011.



3. Ensuring that a PPP contract initiated as a USP generates VfM and meets the public interest is more challenging and requires greater public sector technical capacity than do publicly initiated PPPs. This highlights the importance of hiring experienced external advisors to assist with project preparation and procurement. It should be noted, however, that the costs of hiring experienced advisors could easily outweigh the perceived benefits of getting a feasibility study developed at the expense of the USP proponent in the first place.
4. The public authority is advised to formulate USP policies in close consultation with experienced experts. Experts consulted may include government officials, external advisors (PPP consultants), or multilateral advisors. The effectiveness of a USP policy will be influenced by the wider institutional and political environment.

For further information, please refer to the *Guidelines for Development of a Policy for Managing Unsolicited Proposals in Infrastructure Projects* developed by the World Bank. This guidance provides recommendations for governments considering developing and operationalizing a USP policy for infrastructure projects. The recommendations are based on an in-depth review of global best practices for USP policies and projects.

## Appendix 4. Communication plan

This section outlines a typical communication plan.

Section	Rationale and Explanation				
I. Purpose of the communications plan	<p>Briefly explain the purpose of the communications plan; for example:</p> <p><i>The purpose of this communications plan is to identify parties with an interest in the [Name of Project] and the means for assessing and engaging in effective communication with those parties.</i></p> <p><i>This document outlines the types of communication activities that will occur throughout the life of the project, how to facilitate communication with stakeholders, and how to address stakeholder concerns. It focuses on ensuring there is effective, regular, planned and ad hoc communication, and it presents details about what correspondence is to be sent, to whom, by whom, when, how, and why.</i></p>				
II. Scope	<p>Briefly explain the scope of this plan; for example:</p> <p><i>The [Project Name] communications plan sets out how the project team will communicate with all project stakeholders, including individuals or groups who:</i></p> <ul style="list-style-type: none"> <li><i>can stop the project</i></li> <li><i>can influence it</i></li> <li><i>are interested parties only</i></li> </ul>				
III. Roles and responsibilities	<p>In this section, describe who will be responsible for what aspects of the communication process, including additional roles, as required. Update this table to reflect the roles in your project. For example:</p> <p><i>The communications plan will be managed by [Name or position of responsible project team member] and overseen by the [Name of project governance body].</i></p> <table> <tr> <th>Role</th><th>Responsibilities</th></tr> <tr> <td><b>[Project team member responsible for developing and implementing the communications plan]</b></td><td> <ul style="list-style-type: none"> <li>Develops and implements the communications plan and ensures that it is maintained throughout the project's life and is communicated to and understood by all participants.</li> <li>As a member of the core team, identifies stakeholders and assesses their level of engagement.</li> <li>Communicates stakeholder status and issues to the project's governance body, seeking direction as required.</li> </ul> </td></tr> </table>	Role	Responsibilities	<b>[Project team member responsible for developing and implementing the communications plan]</b>	<ul style="list-style-type: none"> <li>Develops and implements the communications plan and ensures that it is maintained throughout the project's life and is communicated to and understood by all participants.</li> <li>As a member of the core team, identifies stakeholders and assesses their level of engagement.</li> <li>Communicates stakeholder status and issues to the project's governance body, seeking direction as required.</li> </ul>
Role	Responsibilities				
<b>[Project team member responsible for developing and implementing the communications plan]</b>	<ul style="list-style-type: none"> <li>Develops and implements the communications plan and ensures that it is maintained throughout the project's life and is communicated to and understood by all participants.</li> <li>As a member of the core team, identifies stakeholders and assesses their level of engagement.</li> <li>Communicates stakeholder status and issues to the project's governance body, seeking direction as required.</li> </ul>				

Section	Rationale and Explanation
	<ul style="list-style-type: none"> <li>▪ Monitors stakeholder changes or issues that will trigger a review of engagement and communication plans.</li> <li>▪ Provides communication to stakeholders were identified as the messenger.</li> <li>▪ Ensures ongoing communication activities are integrated into the project schedule.</li> </ul> <hr/> <p><b>[Other project team members]</b></p> <ul style="list-style-type: none"> <li>▪ Cross-check newly identified stakeholder risks against the Risk Register, noting any duplication.</li> <li>▪ Ensure stakeholder and communication risks or issues are documented appropriately.</li> <li>▪ Coordinate, collate, and distribute communication at scheduled times.</li> <li>▪ Etc.</li> </ul> <hr/> <p><b>[Project governance body]</b></p> <ul style="list-style-type: none"> <li>▪ Reviews initial identification of prioritized stakeholders for completeness.</li> <li>▪ Receives advice of major communications risks throughout the project life cycle.</li> </ul> <hr/> <p><b>Stakeholders</b></p> <ul style="list-style-type: none"> <li>▪ Provide feedback on communication expectations.</li> </ul> <hr/>
IV. Stakeholder analysis	Introduce this section briefly.
a. Stakeholder identification	Explain how you will identify stakeholders and assess their level of interest in the project. Methods to identify stakeholders include research, conducting workshops, and interviewing potential stakeholders.
b. Stakeholder analysis and classification	Once you have identified the stakeholders of the project, assess the key project stakeholders and determine their level of interest in and influence on the project. Based on this information, classify the level of communication these stakeholders require.
c. Key messages	<p>Use this section to describe:</p> <ul style="list-style-type: none"> <li>• What key messages should be communicated to each key stakeholder.</li> <li>• What form the key messages to (and from) key stakeholders are expected to take.</li> </ul> <p>To stakeholders:</p> <ul style="list-style-type: none"> <li>• Regular project status reports and briefs of varying frequency with content specific to the audience.</li> </ul>

Section	Rationale and Explanation
	<ul style="list-style-type: none"> <li>• Ad hoc exception reports and briefs regarding aspects of the project at risk of not being achieved, or not being achieved according to plan.</li> <li>• Regular updates on the progress of organizational change management.</li> </ul> <p>From stakeholders:</p> <ul style="list-style-type: none"> <li>• Strategic, business and user requirements.</li> <li>• Critical success factors and quality expectations.</li> </ul>
V. Communication protocols	
a. Communication process and procedure	<p>Use this section to provide a high-level description of (or reference to) any communication methods intended to be used. It should:</p> <ul style="list-style-type: none"> <li>• Specify any communication formats mandated by legislation or government or procuring authority policies.</li> <li>• Describe any protocols that must be observed; these may apply to specific forms of communications, such as phone calls (e.g., designated persons only to use these forms of communications), and some governance may be applied over their use.</li> <li>• Specify the communication channels that must be used; some communications may only be permitted from dedicated channels, (e.g., use of a project mailbox for all email communications).</li> </ul>
b. Tools and techniques	<p>Describe any communication tools that will be used, and any preferred techniques that may be used, for each step in the communication process (e.g., email accounts, stationery, templates, and email signatures may be specified for use in the project outward communications). Distribution processes for correspondence received may need to be defined to ensure key messages are communicated clearly to stakeholders in a timely manner. This may require that distribution lists be created for emails and hard-copy documents.</p> <p>Approaches like the creation of a Community Advisory Group (or any similar institution/group) may be considered to coordinate local input into the planning of the project. For example, in a social infrastructure project, such groups will usually include members of the local community, representatives from local government, and representatives of the related public service (e.g., police force in prisons, medical service staff in a hospital, or teachers in a school), and the procuring authority.</p>

Section	Rationale and Explanation
	<p>The public authority should also consider developing fact sheets and brochures for the public and holding community information sessions to explain the project to interested or concerned community members.</p>
c. Stakeholder contact data	<p>Use this section to describe how to maintain stakeholder contact data. This data should include phone numbers (office and mobile), addresses and email addresses, and contact details for a secondary point of contact with the stakeholder.</p>
d. Project mailbox	<p>If a project mailbox will be created for project emails, outline the responsibilities of those assigned to manage all emails throughout the project life cycle. Include the project mailbox address.</p> <p>Consider creating email distribution lists to save time in sending emails. Typical distribution lists include:</p> <ul style="list-style-type: none"> <li>• the project team</li> <li>• members of any project governance body</li> <li>• specialist advisors</li> </ul> <p>Set out what email distribution lists have been created, who is included, and how they are to be used.</p>
e. Records	<p>In this section, describe what communication records will be required (e.g., logging external correspondence) and where these will be stored.</p>
f. Correspondence tracking	<p>Use this section to describe how you will track project correspondence. Reporting on project correspondence should include details of what has been both sent and received and any follow-up activities arising from it; for example:</p> <p><i>Copies of all project correspondence will be stored in the project's document management system and recorded in the correspondence register.</i></p>
g. Timing of communication activities	<p>Use this section to state when formal communication activities should be undertaken (e.g., at the end of a project phase and at a key decision point) and provide detail about how to manage these activities.</p>

Section	Rationale and Explanation
h. Workshops / meetings	<p>Include text with information on protocols for communication about meetings or note where these details can be found in separate terms of reference; for example:</p> <p><i>For project workshops or meetings, a detailed agenda will be distributed several days in advance, showing the:</i></p> <ul style="list-style-type: none"> <li>• <i>date and time</i></li> <li>• <i>duration</i></li> <li>• <i>location</i></li> <li>• <i>objectives</i></li> <li>• <i>any relevant pre-reading and reference documentation, including a briefing document where appropriate.</i></li> </ul>
VI. Approval of the plan and updating of the plan	
a. Approval	Describe how the initial plan and any changes to the plan will be approved. This should typically be through the project's governance structure.
b. Updating the plan	Describe how and when the plan will be updated.