D6. Affordability

Methodology and Guidance on Affordability Assessment

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ABBREVIATIONS

DSCR	Debt service coverage ratio
DSRA	Debt service reserve account
EPEC	European PPP Expertise Centre
EU	European Union
FCCL	Fiscal Commitments and Contingent Liabilities
MOF	Ministry of Public Finance
MRA	Maintenance reserve accounts
PIMU	Public Investment Management Unit
PPP	Public-Private Partnership

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1. PURPOSE OF THIS DOCUMENT

1.1 Aim of this Guidance

This Guidance aims to provide public authorities and PPP practitioners in Romania with an approach and methodology for conducting affordability assessment for PPP projects. The framework stipulated in this Guidance is informed by affordability assessment approaches in PPP markets globally and has been tailored to the Romanian PPP context. One of the main causes of PPP project failure, both in Romania and other markets, is that they turn out to be unaffordable either for Government or for users due to poor initial assessment. Assessing affordability is therefore one of the key tasks in the preparation and procurement of a PPP project.

This Guidance complements the Emergency Ordinance No. 39/2018 on Public-Private Partnerships ("the PPP law) and the Emergency Ordinance No. 88/2013 on the adoption of fiscal-budgetary measures for the fulfilment of commitments agreed with international bodies, and must be followed when assessing the affordability of a PPP project in all stages of maturity (e.g. pre-feasibility study, substantiation study and subsequent tendering) and contains the following elements:

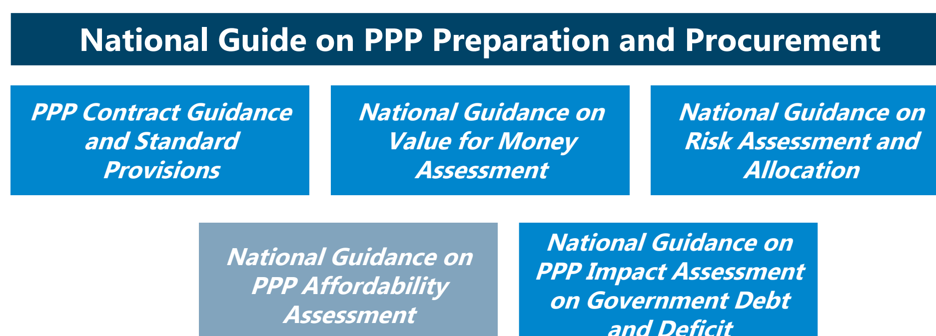
- A definition of affordability within the context of PPP projects and the role of its assessment in the development of such projects;
- A process for establishing the project costs;
- A practical methodology for the development of a financial model;
- An approach for undertaking the affordability assessment within the budgeting process of Romania.

1.2 Reading guide

Chapter 2 describes the concept, definitions and purpose of affordability in PPP project development. Chapter 3 describes the process and details the steps required throughout the PPP project preparation and procurement process with regard to affordability assessment and establishment of the project costs.

This guide is part of the National Guidance on PPP Preparation and Procurement and should be read in close conjunction with the procedures and methodology provided by the set of documents that are part of this Guidance (see **Error! Reference source not found.**).

Figure 1: All guidance documentation as part of the National Guide on PPP Preparation and Procurement



1.3 Definition

The term **Public Private Partnership (PPP)** in this document means: *"A long-term contract between a public authority and a private sector company for the delivery of a public infrastructure or service that is under the*

responsibility of a state agency which transfers substantial risk to the private party, includes the provision of private financing and includes a focus on the specifications of project outputs rather than project inputs, linked with a payment system based on performance."[1]'

This document focuses on PPPs as defined in Emergency Ordinance No. 39/2018 on Public-Private Partnerships ("the PPP law") and on concessions as defined in Law 100/2016 on works concessions and service concessions ("the Concessions law").

The Romanian legislation distinguishes between: (i) **PPP**s and: (ii) other long-term (i.e., over 5 years) contracts involving either the performance of works and the operation of the asset(s) resulting from such works, or the provision of services. Such other long-term contracts are classified as either **Public Procurements** or **Concessions**, depending on whether a substantial portion of the operational risk is transferred to the private partner. PPPs are defined in and governed by Emergency Ordinance No. 39/2018 on Public-Private Partnerships ("the PPP law"), Public Procurement contracts are governed by Law No. 98/2016 on public procurement (or by Law no. 99/2016 on sectoral procurement) and Concessions are governed by Law No. 100/2016 on works concessions and service concessions ("the Concessions law"). PPP contracts are awarded according to Law No. 98/2016 (or Law No. 99/2016) or according to Law No. 100/2016.

Whereas traditionally in other countries in Europe, no distinction is made between PPPs and Concessions (as Concessions are considered a form of PPP), the PPP Law specifically distinguishes between PPPs and other long-term contracts (such as Concessions).). In order to determine if the PPP Law is applicable, the PPP law requires the Substantiation study to demonstrate that *"...more than half of the revenues to be obtained by the project company from the use of the good / goods or operation of the public service that is the object of the project come <u>from payments made by the public partner</u> or other public entities for the benefit of the partner public."*[2]
The Substantiation study that determines whether a given project qualifies as a PPP or not should also determine whether the project involves the transfer of a substantial portion of the operational risk to the private partner.
If half or more of the revenue comes from payments made by users and all other conditions as set by the Concessions law are met (notably, the condition that a substantial portion of the operational risk is transferred to the private partner), the project will be defined as a Concession.

This Guidance on affordability assessment may be used for both PPPs and Concessions, as the requirements for the affordability assessment for both types of contracts (PPPs and concessions) are similar. Throughout this Guidance, no further distinction between PPPs and Concessions will be made. Whenever reference is made to PPP, the Guidance may also be relevant for Concessions as defined by the Concessions law.

[1] Definition based on the definition of a PPP by EPEC.

[2] PPP Law, Article 2

2. THE CONCEPT OF AFFORDABILITY IN A PPP

2.1 What is affordability of a project?

2.1.1 Definition of PPP project affordability

Affordability in the context of a PPP project is the capacity of the Contracting Authority to meet its payment obligations (direct and/or contingent liabilities) over the duration of the PPP contract, including the ability of users of the facility to pay for the services provided by the project company in the case of a user payment PPP (an arrangement which may also involve some form of government support, such as a minimum revenue guarantee, provided by the Contracting Authority to the project company).[3] The affordability of a PPP project depends on the scope of the project and the quantity and level of services to be provided.

2.1.2 Purpose of affordability assessment

Even though PPP projects may provide an immediate source of financing to pay for the project and therefore short-term benefits to the government budget, for an availability payment PPP, they really only change the timing of when the government has to pay for the project (under a concession PPP, the direct users pay for the project, but in most cases there will still be some financial obligations for government, as discussed below).

Under a PPP, the government almost always bears some kind of risk or provides some kind of support, and this gives rise to financial obligations of the government, which usually comprise both a direct payment liability and often, in addition, contingent payment liabilities:

- A **direct payment liability** is a future payment obligation that is predictable in terms of the timing and the amount of required payments.[4] It arises when the project is partially or fully funded by the government. Examples of direct payment liabilities include availability payments, viability gap payments (e.g. government upfront capital contributions or subsidies to make the tariffs for end users affordable), etc. Usually, the evaluation of these commitments is straightforward as the amounts due will be explicitly stated in the PPP contract.

> **Funding versus financing**
>
> Understanding PPP project affordability requires an understanding of the difference between funding and financing of projects, which are two distinct concepts that are often confused.
>
> *Funding* is the means by which the project is ultimately paid for in the long term, which does not need to be paid back. Funding for projects can come from two main sources: project-generated revenues (primarily user fees) or government payments, or a combination of these.
>
> *Financing* is the temporary provision of the funds required to undertake the project, which must eventually be paid back through a funding source.
>
> This distinction is crucial, since some public authorities are tempted to use PPPs with the motivation that—because financing might be available for the project—it seems to be 'infrastructure for free'. This is a so-called 'affordability illusion' – illusion that a PPP project can take place because the financing is there, but ignoring that the project eventually has to be paid for and the financing paid back.[5]

[4] EPEC Guide to Public-Private Partnerships, Chapter 3. EIB, 2021.

[4] EPEC Guide to Public-Private Partnerships, Chapter 3. EIB, 2021.

[5] Public-Private Partnerships for Infrastructure. Principles of Policy and Finance. Yescombe, E.R., and E. Farquharson, 2018.

- On the other hand, a **contingent payment liability** is contingent upon an uncertain future event that may or may not occur and may be outside of the control of the Contracting Authority[6]. It arises when the government takes on some risks either explicitly in the PPP contract or loan agreement, or indirectly through the legal framework. For contingent liabilities, their occurrence, value and timing of realisation may be unknown or might not be definitively determined. Examples of contingent liabilities include termination payments, force majeure, compensation for material adverse government action, guarantees on specific risks (e.g. exchange rate, inflation, among others), credit guarantees, etc. Generally, these types of commitments are explicitly set forth in the PPP agreements, even if the actual timing of payments and amounts involved may not.

It is necessary for the Contracting Authority to understand what the expected financial commitments are and how they should be budgeted for over the duration of the PPP project. If affordability is not properly observed and managed, the Contracting Authority may run into such issues as:

- Building up a portfolio of non-sustainable long-term commitments. This may happen if there is an erroneous political perspective that PPP projects do not require significant future payments from the government and such future payment obligations are not properly recognised in the budgeting process;
- Excessive oversizing or overdesigning of the PPP projects. This may happen when the total project costs or initial investments do not have to be accommodated in the short- to medium-term-budgets;
- Not being able to attract investors: if the Contracting Authority has no credible mechanisms in place to ascertain affordability over the duration of the PPP contract, investors may be concerned about the Government's commitment to future payment obligations;
- Cancellation of the tender or the PPP contract when the project turns out to be (no longer) affordable to the Contracting Authority, causing damage to the credibility of the Contracting Authority, delays in the provision of service to the public and wasted costs for the project preparation or significant additional costs if the contract has to be terminated.

In addition, it is also important for the Contracting Authority to clearly identify the sources of funding; i.e. where the money will come from to meet these future payment obligations. In other words, it is crucial to not just assess what these obligations might be but also how they can be paid for.

An adequate identification and assessment of government financial commitments under the PPP contract at an early project development stage allows the Contracting Authority to be able to take good decisions regarding the financial structure, risk allocation, and approval of the project, identify any limitations on the payments by the Contracting Authority and/or end users, and therefore determine the range of project options that may be considered for further development.

2.2 Who conducts the affordability assessment?

The Contracting Authority retains primary responsibility for all the stages of the affordability assessment. Within the Contracting Authority, a team dedicated to managing the specific PPP project is likely to be in place. This team is ultimately responsible for ensuring that the project goes through the process of affordability assessment.

To aid in the PPP development process, it is good practice for the Contracting Authority to hire a specialist team of consultants or advisors who would then assist in the study, preparation, and procurement of a PPP. Such advisors typically conduct the estimation of project costs, willingness of users to pay (if applicable), direct and contingent payment liabilities and development of the financial models used to estimate the future payment commitments under close consultation with the Contracting Authority and the PIMU.

[6] EPEC Guide to Public-Private Partnerships, Chapter 3. EIB, 2021.

For more detail on the PPP institutional framework and the role of each party in a PPP, refer to the *National Guidance on PPP Preparation and Procurement.*

3. AFFORDABILITY ASSESSMENT PROCESS

Affordability assessment forms part of the PPP project preparation and procurement process, and even in the subsequent implementation of the project after the PPP contract is signed. This guidance, however, focuses on the part of the affordability assessment process that is undertaken during the project preparation and procurement phase (i.e., before the PPP contract is signed). As a project is studied in more detail and the scope of the project becomes more defined, the expected payment obligations and contingent liabilities for Government and/or users, become more refined. Related activities and assessments carried out during the PPP preparation and procurement process – such as the technical and financial feasibility assessment, structuring of the project and the procurement process, proposed risk allocation structure – all inform the affordability assessment process.

For more detail on the analyses and assessments carried out as part of the Feasibility & Substantiation study, refer to the *National Guidance on PPP Preparation and Procurement.*

Assessment of the extent to which the PPP project may be afforded within the budget of the Contracting Authority involves two key components:

- Estimation of the expected payments (both direct and contingent liabilities) required by the Contracting Authority (for a PPP project) and/or users (for a Concession project) over the lifetime of the project, and
- Estimation of the sources of funding (expected budget allocated for infrastructure and maintenance) that are available in order to meet these financial obligations.

As a result, the project is considered affordable if the sources of funding are available and sufficient to cover the expected payments from the Contracting Authority (or in the case of a Concession PPP, the ability and willingness of the users to pay the expected toll is confirmed).

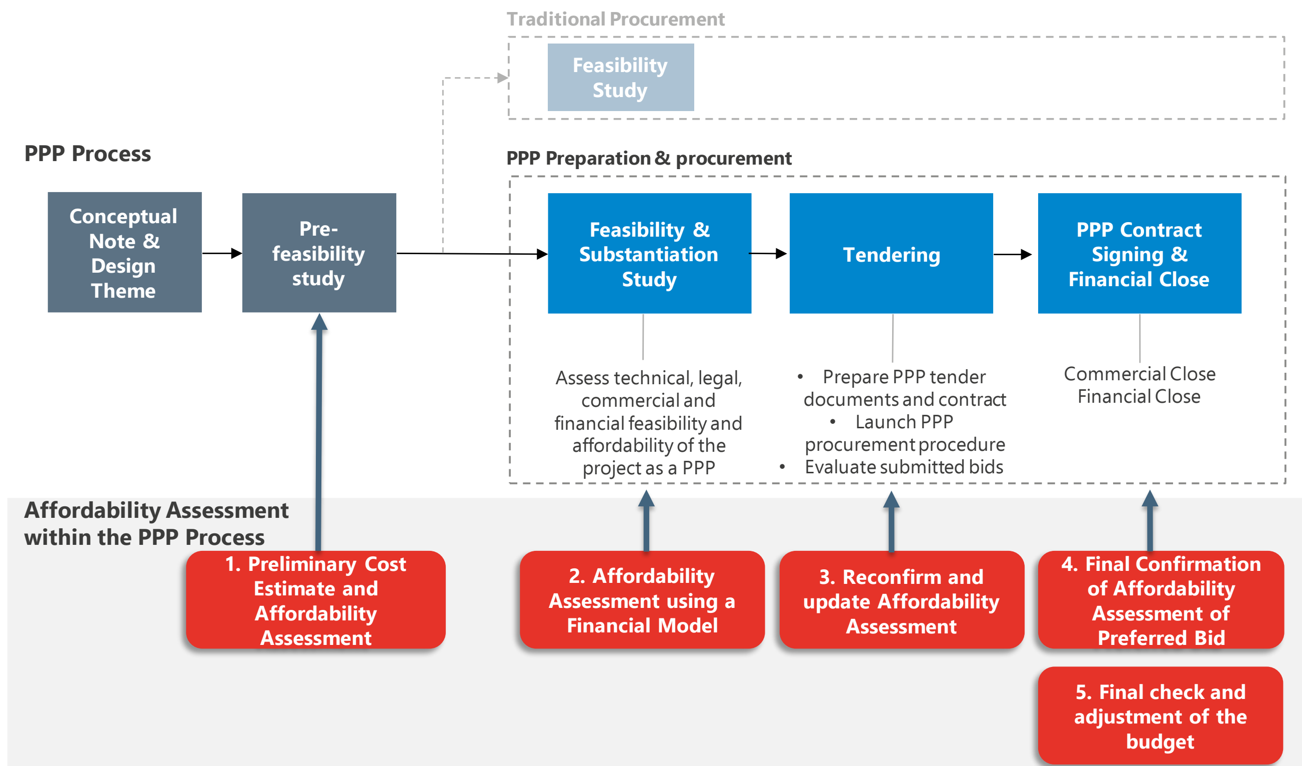
Limitation on the public partner's funding contribution, including EU grant funding

Art. 12 (2) of the PPP Law caps the public partner's contribution to the funding of the investment (during the construction phase) at 25% of the total value of the investment. This cap includes European Union and other non-reimbursable external funds and the national contribution to such funds, as well as the contribution of public investment funds and investment companies.

However, EU funds and other grants can play an important role in PPP project affordability. By capping the maximum contribution of such funds to 25% of the investment value, the risk arises that good projects that would add considerable benefits to society and would generate *value-for-money* as a PPP may not be affordable, even though additional EU or other grant funding (above the 25% cap) could be obtainable. Such a cap in respect to PPP projects is not common internationally and restricts the ability to optimally structure a project's funding and delivery model.

While Art 12 (2) of the PPP Law remains in effect at the time of publication of these guidelines, discussions are ongoing to either increase or remove the 25% cap to allow flexibility and encourage the use of non-reimbursable EU funds where available as a funding option for PPP projects.

Figure 2: Affordability assessment in the PPP preparation and procurement process



In general, affordability assessment starts from identifying the first raw estimate of the project costs and revenues and forming a first high-level assessment and a decision on whether to proceed with the project at the *pre-Feasibility study* stage. At this point it is enough to have some idea on the costs, the size of the project and where the funding is likely to come from. In case it is clear that there is insufficient funding to implement the project, there would be no reason to move further to the feasibility study stage. As a project moves from pre-Feasibility study stage to the *Feasibility & Substantiation study* and *tendering* stages, the more refined affordability assessment is progressively developed based on the financial model and the updated cost and revenue estimates until these are finalized prior to the launch of the tendering process. Once the PPP tender documents have been developed, affordability assessment is refined on the basis of the competitive dialogue process (if used) and the clauses in the PPP agreement, as the PPP agreement would explicitly set the direct and contingency payment liabilities and include the exact payment mechanism and any allowed adjustments, guarantees, trigger conditions, and termination payments. As the bids are submitted, the process continues through confirming and updating the affordability assessment based on the actual bids. Finally, at the stage of financial close the availability or service fee is fixed, and a final check and adjustment of the budget is performed.

3.1 Step-by-step approach to affordability assessment

3.1.1 Preliminary cost estimate and affordability assessment at Stage 1: PPP Project Identification and Selection

3.1.1.1 Preliminary cost estimate

It is good practice to start a preliminary assessment of the project affordability at the early stage of the project preparation process to get an understanding of whether the proposed project will be financially sustainable for the Contracting Authority/users both in the short and long term. During the pre-Feasibility study stage, a preliminary estimate of project costs and consideration of funding source(s) should be undertaken by the Contracting Authority. This exercise will help inform the first evaluation of project affordability and a decision whether or not to proceed with project preparation. Through this exercise, the Contracting Authority can get a

sense of which project options are affordable and can be considered further, whether the preferred project option can be delivered within the available budget or whether modifications to the scope of the project should be considered.

Since this is a very early stage, relatively little information is available, and external advisors may not yet be engaged, the depth of the preliminary affordability assessment is much less detailed than the affordability analysis at the Feasibility & Substantiation study stage; rather, it is just enough to guide the decision to proceed with the project further. At this point, the Contracting Authority should conduct a very preliminary estimation of the project's capital expenditure and operating and maintenance costs based on the proposed project structure, size and other features. This can be done, for example, by benchmarking from similar projects, researching available statistical data (e.g. through industry databases or publications, adjusted for the country specifics), gathering feedback from market sounding activities, and/or relying on data from the Contracting Authority itself, since it will typically have prior experience with projects of a similar nature in the country (even if not PPPs).

It must be highlighted, that there are a number of practical problems to be accounted for while making a preliminary estimation of the project costs. These include but are not limited to:

- Underestimating the future costs, and therefore the pre-determined budget. To avoid this, the Contracting Authority should establish an 'affordability envelope' that leaves sufficient margin in case the bids received from the market will be higher than estimated;
- Estimating only the construction capital costs (failing to account for the lifecycle costs), or estimating operations and maintenance costs based on the costs of current public service, which are usually lower than those in a PPP project, as the standards in a PPP project are typically higher; and
- Failing to account for higher than expected construction cost inflation. To avoid this or minimise the impact, the Contracting Authority may choose to add a contingency reserve, which could roughly be estimated at around 10% of the construction costs.

The annuity method may be used as an alternative approach for estimating the periodic payments from the government over the contract period. This can be done based on the approximate capex estimate, the estimated weighted average cost of capital (WACC) that summarizes and approximates the financing conditions, and the expected contract duration. It must be noted that this would result in a very rough estimation and potentially underestimate the total project costs, as this estimate does not include operations and maintenance costs, which are particularly sensitive to inflation and for certain PPP projects might constitute a significant proportion of the total project costs.

See Appendix 1 for an Excel file demonstrating a simplified worked example. Preliminary identification of sources of funding and affordability

Consideration of the source(s) of funding should be assessed already at the earliest stage. Before proceeding to the next stage, it is important to have at least a high-level view on the following questions:

1) Will the project require government funding support (such as for example to pay for the availability payments and/or contribute to upfront capex costs)?
2) If so, is there a budget or another mechanism available to pay for such support?

Within the budgeting process of Romania, elaboration and decisions on the draft annual budget are based on the medium-term budgetary framework of 4 years. However, the medium-term expense plans do not have the same time horizon as long-term PPP contracts. According to the Law Nr. 500 of 11 July 2002 on public finances and Law Nr. 273 of 29 June 2006 on local public finances, to carry out multiple year commitments, such as PPP projects, the authorizing officers should conclude legal commitments within the limits of the commitment appropriations approved by the budget for the respective budget year. In addition, each year the Ministry of

Public Finance (MOF) sets spending limits that are approved by the Government for the budget year to the main authorizing officers. However, even if the budgeting process of Romania does not focus on future costs beyond the medium-term 4-year period as decision factors, it is good practice to track the total expected annual commitments (taking inflation of the payments into account) beyond the 4-year budgeting cycle in order to have a clearer view of future costs and to provide lenders with a view on how projects are budgeted for and comfort that the Government will be able to meet its long-term contractual commitments. Comparing annual cost estimates against the projected budget allows checking whether the project is aligned with budget constraints and priorities and therefore is affordable within the budget.

Limits on fiscal commitments related to PPPs

It is international good practice for governments to adopt limits on direct fiscal commitments related to PPPs in order to avoid locking up too much of the budget in long-term fixed-payment commitments through PPP contracts (either within a sector or at general level) and to ensure that future flexibility in spending in other areas is not excessively limited. These limits may be established relative to the type of Contracting Authority and the size and priority of the project. However, normally such limits are not necessary in the early stages of PPP programs, such as in Romania, and the Romanian legal framework does not currently require such limits.

Some of the possible indicators of affordability are shown in Table 1 below.

Table 1: Affordability indicators

Fiscal commitment	Cost	Indicator of fiscal affordability (including projections over PPP contract length, beyond medium-term horizon)
Direct liabilities	- Estimated capital contributions by governement to the project Estimated annual availability payments - NPV	- Annual cost as percentage of ministry or sector agency, and national annual revenue / deficit-surplus budget - Cost as percentage of national public debt - Cost as percentage of GDP
Contingent liabilities	- Estimated annual payment, or expected average payment - NPV (Base/downside cases)	- Cost as percentage of ministry or sector agency, and national annual revenue / deficit-surplus budget - Cost as percentage of contingency line - Cost as percentage of public debt - Cost as percentage of GDP

In addition to the budgetary framework, there might be additional EU funding mechanisms available, such as combining financial instruments into a PPP structure as an additional source of funding to support the project costs. The Common Provisions Regulations for the current programming period provide more detailed information on this topic and elaborate on the ways to access these mechanisms[7]. However such structures while in theory possible have not been widely used to date.

In user payment PPPs, the willingness and ability of users of the facility to pay for the services provided by the project company should be assessed. If the expected cost of services or tariff is higher than the willingness or ability to pay then the government may have to provide some funding support: this might comprise part paying

[7] EU 2021-2027 Common Provisions Regulation, Combination of financial instruments and grants under shared management funds in the 2021-2027 programming period, 2021 (https://www.fi-compass.eu/sites/default/files/publications/Combination%20of%20financial%20instruments%20and%20grants_1.pdf)

for the capital costs of the project and/or using a combination of availability payments from government and user fees (this approach is sometimes used for example in urban transport projects). This will be one of the factors that inform the decision to proceed with the project, and if the pre-feasibility study points out that the proposed project would result in the level of fiscal commitments that are not affordable within the budget, the project scope and structure should be reconsidered.

If the results of the preliminary affordability assessment in the pre-Feasibility study indicate that the expected level of government payments is likely to be within the available budgets and the project goes to the next phase of PPP preparation, the preliminary affordability assessment will then be developed further using more refined cost and revenue estimates in the financial model, as part of the Substantiation Study.

What	**Preliminary cost estimate and affordability assessment at Stage 1: PPP Project Identification and Selection**
When	As part of the pre-Feasibility study.
Objective	Conduct a high-level assessment of project costs and revenues and identify whether the resulting required level of government payments is within the budget of the Contracting Authority or other public resources.
How	1. Estimate the preliminary level of project costs, both capital and operational expenditures, revenues and the resulting level of required government payments over the duration of a PPP contract (based on the information available at hand during pre-feasibility study stage). 2. Determine the level of required government payments as a percentage of the Contracting Authority's annual revenue/ budget and check whether the project is aligned with budget constraints.
Who is responsible	Contracting Authority, with guidance from PIMU. Note that at this stage, the decision to proceed with a project through PPP has not yet been made and advisors may not have been hired at this stage. Advisors are likely to be onboard from Step 2 onwards. For national PPP projects, at this stage the MoF should provide preliminary clearance on the affordability of the project.
Result	Together with the PPP Potential Scan and Preliminary Risk Assessment and Allocation, this preliminary affordability assessment will help inform the decision to support further assessment and development of the project as a potential PPP. If the affordability assessment would clearly indicate that there are no funding sources available for this project, there is no reason to move to the next stage of project preparation. If the project proceeds to the next phase, the estimates of project costs and revenues and its affordability will be revisited and reassessed in further detail during the Substantiation Study phase.
Output	Preliminary cost estimate and affordability assessment.

3.1.2 Affordability Assessment using a Financial Model at Stage 2: Preparation of a Feasibility & Substantiation study

The second step in the affordability assessment process occurs within the context of the Feasibility & Substantiation Study. Article 19 of the emergency ordinance No. 39 from May 10, 2018 on public-private partnership stipulates that the Substantiation Study must highlight the degree of affordability of the project as one of the main components justifying the implementation of the project as a PPP. This guidance describes all requirements for the affordability assessment of a project as a component of the Feasibility & Substantiation study.

For all other requirements of the Substantiation study (not directly related to affordability assessment), please refer to Appendix 2 of the *National Guidance on PPP Preparation and Procurement.*

The starting point for the affordability assessment in Stage 2 is the output from the preliminary cost estimate and affordability assessment in Stage 1: PPP Project Identification and Selection. The costs estimates and affordability assessment from Stage 1 will need to be revisited and updated, given the new and more detailed information from other components of the Feasibility & Substantiation study, such as:

- Technical feasibility assessment
- More detailed estimates of costs and revenues
- Market/demand assessment;
- Risk assessment and allocation.

One of the key parts of the Feasibility & Substantiation study is the preparation of project cost estimates (capital and operating expenditures, as well as the assumptions on the expected financing structure and financing costs) in line with the output specifications, so that the affordability of the project and the desired performance level can be assessed before the launch of the tender. In this way, unpleasant price surprises (e.g. all submitted proposals being more expensive than expected and exceeding the available budget) can be prevented as much as possible. In the current environment of high and unpredictable construction cost inflation, consideration might be given to mechanisms to share such risks between the public and private partners. The Contracting Authority should make realistic cost assumptions based on the information available and use the financial model and market sounding to test various construction cost risk sharing mechanisms in terms of affordability and acceptability to the market.

3.1.2.1 Role of the financial model

As a part of substantiation study, with the assistance of the advisors, the Contracting Authority should develop a detailed financial model of the project, which incorporates the cost estimates, financing and funding requirements over the PPP project lifetime as more detailed information becomes available. The Contracting Authority uses the financial model for the following purposes:

- In case of PPPs with availability or other government payments, the financial model is used to forecast the level and timing of the availability or service fee that will be later specified in the PPP contract between the winning bidder and the Contracting Authority. In particular, the financial model enables determination of the amount of the availability or service fee that is required for the project to be financially viable. At this stage, this fee is the best estimate of the availability fee that bidders are likely to present in their bids (the exact resulting amount may vary depending on each bidder's specific costs). The fee requested by the winning bidder will be documented in the PPP agreement and will have to be paid by the Contracting Authority to the private contractor over the duration of the PPP agreement. The Contracting Authority should forecast the availability or service fee over the life of the project in order

to assess the affordability of the project and to prepare its budget. If the estimated availability or service fee exceeds the available budget of the Contracting Authority, then the Contracting Authority may find that it needs to reduce the scope of the project. If this causes problems with project no longer being able to meet the identified needs, then the Contracting Authority may need to consider not proceeding with the project as a PPP at the present time.

- In case of PPPs with user fees, the financial model is used to forecast the amount of the tariff that will have to be collected from the users of the project services for the project to be financially viable. In this case, the fees are paid not by the Contracting Authority but by the users of the project. Nevertheless, is it necessary to forecast the amount of the user tariff in order to assess its affordability for users. If the resulting user fee appears to be too high (e.g. is considered to be unaffordable for certain social groups), then government support might be required for the project, and the financial model would serve as a tool to determine the level of government support required to make the project financially viable.
- In addition, various types of government support (such as upfront grants, periodic grants, concessional loans, guarantees) can be compared to determine the most efficient support package.

The PPP financial model enables preparation of a government budget impact forecast over the duration of the PPP contract. This forecast pertains to the level and timing of cash expenses of the government under the PPP agreement and is relevant for treasury management (i.e. the Contracting Authority must at any time have enough cash resources to meet its payment obligations to the private partner). This forecast is preliminary and will be updated as more information becomes available (e.g. through market sounding). There is also an overlap with the VfM assessment, as a form of the PPP financial model will also be used to compare the PPP option with the PSC (but it is important not to confuse the analysis for VfM purposes with the analysis for affordability purposes, even though they may involve similar financial models) but clearly the relevant input assumptions used must be the same. Later, during the procurement stage, the PPP financial model may be used to compare and sense-check the government's initial assumptions and those used by bidders and may be further updated based on the final financial proposal of the winning bidder or used to question some of the cost assumptions used by bidders. As a part of Feasibility & Substantiation Study, however, the initial forecast is used to assess the long-term affordability of the project over the expected PPP contract period.

Affordability assessment should include a list of contingent payments and, where possible, estimates of their potential amounts.[8]

In addition, the financial model is used to test the sensitivity of the estimated government payments to various cost parameters and assumptions in order to assess the robustness of the financial viability (from the perspective of the contractor) and affordability (from the perspective of the Contracting Authority). This may include the sensitivity to demand, revenue of the contractor, inflation, capex, various operational costs items, financing costs assumptions (the required return on and percentage of equity required, cost of debt assumptions etc), among others.

3.1.2.2 Structure of the financial model

At the substantiation study stage, the PPP financial model is usually the part of the scope of work of the Contracting Authority's transaction advisor. Generally, the financial model includes the modules presented in Table 2 below.

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[8] For a detailed explanation of contingent liabilities, please refer to existing publicly-available resources, such as *Analyzing and Managing Fiscal Risks—Best Practices*, IMF, 2016; *Managing Contingent Liabilities in Public-Private Partnerships*, Irwin, Mokdad, 2010; *Government at Risk: Contingent Liabilities and Fiscal Risk*, World Bank, 2002. It is recommended for the Government of Romania to develop a detailed framework and guidelines for managing fiscal commitments and contingent liabilities arising from PPP agreements, in line with international good practice.

Table 2: Modules of a financial model

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

The PPP financial model enables analysis of all aspects of the financial feasibility. As a result, the project is considered feasible if:

- return to shareholders is greater or equal to the target rate of return;
- the loans can be repaid on time;
- the cash balance remains positive;
- the minimum DSCRs exceed the levels expected to be prescribed in the financing agreement of the private contractor;
- the gearing ratio does not exceed the maximum to be prescribed in the financing agreement(s) of the private contractor.

If the project is found to be not financially feasible, then alternative solutions must be explored such as:

- adjusting the availability payments/tariff;
- changing the scope of the project;
- implementation of the project in phases;
- adjusting the contract period for the private contractor to have more time to recover the initial investment costs;
- providing additional forms of government funding support (e.g. for part of the capex).

The PPP financial model allows determination of the extent to which the above measures can be implemented in order to achieve financial feasibility of the project.

Various model templates and established standards for PPP financial models exist, such as the FAST Standard.[9] The requirements and standards will form an important part of the terms of reference for Transaction Advisers, who would be expected to assist the Contracting Authority in developing the financial model and providing input on appropriate assumptions to use.

3.1.2.3 Financial model for affordability assessment from the government perspective

While the assessment of the financial feasibility of the project is performed from the point of view of the private contractor, the purpose of the model is to enable the CA carry out an affordability assessment, and therefore identify the financial consequences of the PPP project for the government budget. This includes the assessment of the required government support and the assessment of direct and contingent payment liabilities.

For the assessment of the government's expected financial commitments, the financial model forecasts the following cash flow items which must be funded from, or accrue to, the budget of the Contracting Authority or of other government agencies:

- Direct payment liabilities:
  - availability fee paid by the Contracting Authority;
  - capital grants (upfront grants to cover part of the capital expenditures);
  - grants in kind (e.g. grant of use for land needed to build the project);
  - fixed annual subsidy; subsidy payable during the operating period, such as viability gap funding;
  - tax deductions;
  - concession fees, if any, paid by the private contractor to the Contracting Authority.
- Contingent payment liabilities
  - compensation in case of risk events;
  - pay-out under loan guarantees (if applicable);
  - early termination payments.

For contingent payment liabilities, the financial model estimates the fiscal expense that will occur in the case the particular risk or termination event occurs. To obtain an estimate of the expected fiscal expense, this information is be combined with the estimates of the probability that this risk or termination event will occur.

3.1.2.4 Notes on financial modelling

There are certain points regarding the financial modelling that are important to note:

[9] https://www.fast-standard.org/

- As the assessment of affordability relies on making estimates of future costs, a reasonable margin may be added on top of the expected costs, in order to allow for any changes in cost assumptions. Therefore, the financial model should include a range of sensitivity analyses and leave sufficient margin in case the costs turn out to be underestimated and the actual bids are higher than expected. This will indicate the maximum level of government payments that may be required, often referred to as the budget or 'cost envelope'.
- All cost and revenue estimates should be expressed in nominal terms (i.e. adjusted for inflation) to determine the expected nominal future payment streams from the government.
- Another caveat may lie in the overestimation of expected project revenue or overestimation of the expected revenue from the sale of public land that might be expected to be used to fund a part of the initial investment.
- To avoid underestimation of the costs, these should be based on the costs actually required by the private market rather than on the costs of the similar publicly-provided service, as the market costs might be higher (e.g. reflecting the true long-term costs of maintaining the project to the standards required).
- Availability and service fees should generally not be 'sculpted' or manipulated in such a way that they are made to appear low at the beginning of the contract (and higher in later years) to show that the project is only affordable in the first years of contract duration.

What	**Affordability Assessment using a Financial Model at Stage 2: Preparation of a Feasibility & Substantiation Study**
When	As part of the Feasibility & Substantiation Study
Objective	Conduct a comprehensive affordability assessment of the project and determine the direct and contingent liabilities and verify budgetary feasibility of required government payments
How	1. Revisit and update the cost estimates from Step 1. 2. Develop a financial model of the project, which incorporates the cost estimates and cash requirements over the PPP project lifetime estimated at the previous step and calculates the level and timing of the required government payments. 3. Update the financial model over the duration of project preparation based on the new information from the components of the substantiation study as well as feedback from the market sounding. **For an explanation of the concept of the market sounding, please refer to the *National Guidance on PPP Preparation and Procurement.*** 4. Determine the level of required government payments as a percentage of the Contracting Authority's annual revenue/ budget or the Contracting Authority's ability to service actual debt and check whether the project is aligned with budget constraints.
Who is responsible	Contracting Authority, with guidance from PIMU and support of its technical and financial advisors.

	Once the Feasibility and Substantiation Study has been completed, it needs to be submitted to the MoF, where the project's compliance with the prioritization criteria will be reviewed by the Public Investment Evaluation Unit and its conclusions will be submitted to the MoF's leadership. The application of the evaluation and prioritization criteria and the review of their application by the MoF are not required for projects that are funded exclusively from local government budgets and which estimated aggregate value does not exceed 100 million RON. Following review by the MoF, the Contracting Authority is required to submit the Feasibility and Substantiation Study to the Inter-ministerial Council for the Issuance of Clearances for Public Works of National Interest and Households (the Inter-ministerial Committee). The Inter-ministerial Committee's clearance is not required for projects that are funded exclusively from local government budgets. The final Feasibility and Substantiation study needs to be submitted for Government approval in case of central public administration projects or for approval by the local authorities in case of local public authorities' projects. In the case of projects initiated by the local authorities that need additional support from the State budget, approval would be required both from the local authorities and the Government.
Outcome	An estimated level of required government payments and contingent liabilities.
Output	Financial model and affordability assessment, to be part of the substantiation study.

3.1.3 Reconfirm and update Affordability Assessment at Step 1 of Stage 3: PPP Procurement

Once the Feasibility & Substantiation study is completed and the decision to proceed is made, the affordability assessment is refined on the basis of the draft PPP contract developed during the Step 1 of Stage 3 of the PPP Process.

What	**Reconfirm and update Affordability Assessment at Step 1 of Stage 3: PPP Procurement**
When	At the stage of tender documentation development.
Objective	Refine affordability assessment of the project and determine the direct and contingent liabilities.
How	1. Revisit and update the level and timing of government payments from Step 2 based on the draft PPP contract. 2. Prepare the list of contingent liabilities and estimate the contingent payments that the government may have to execute under the draft PPP agreement.
Who is responsible	Contracting Authority, with guidance from PIMU and support of its technical and financial advisors. Before launching the project on the market, the Contracting Authority needs to be sure that the budget for the project will be available. Therefore, for central government PPP projects, a preliminary budget approval may be requested from the MoF. If a preliminary budget approval is not secured in this stage, the Contracting Authority risks being faced without a budget approval after having run the full tender process, which can not only

	be detrimental to the project, it can also have a negative impact on the Government's reputation with private investors and operators for PPP projects. In the absence of legislation requiring Ministry of Finance preliminary budget approval, it is still strongly recommended that the CA checks to determine that budgetary resources are expected to be available to meet all expected PPP payment obligations as part of its approval at this stage.
Outcome	An estimated level of required government payments and contingent liabilities.
Output	Refined financial model and affordability assessment.

3.1.4 Final confirmation of Affordability Assessment of Winning Bid at Step 5 of Stage 3: PPP Procurement

Once the decision to proceed to tendering stage is made, the estimates of the required government payments are used to benchmark the financial proposals of the bidders and compare the affordability of the bids. If all proposals are significantly more expensive than the estimate of the financial model, the causes of the discrepancy must be identified. It is possible that the assumptions in the financial model have been too optimistic. However, there is also a possibility that the bidder has overestimated certain cost items (for instance to achieve a higher performance than strictly needed by the Contracting Authority). After completing the evaluation of the bids, it is necessary for the Contracting Authority to perform the final reconfirmation of affordability on the basis of the winning bidder's bid.

What	**Final confirmation of Affordability Assessment of Winning Bid at Step 5 of Stage 3: PPP Procurement**
When	During the evaluation of bids and selection of winning tenderer.
Objective	Benchmark the financial proposals of the bidders and verify affordability of the project.
How	1. Compare the outputs and assumptions of the bidders' financial models with the estimates of the required government payments. 2. Update and refine the assumptions, if necessary, in negotiations with the bidders. 3. Confirm the affordability of the project.
Who	Contracting Authority, with guidance from PIMU and support of its technical and financial advisors. At the next step, Stage 4: PPP Contract Signing & Financial Close, right before the signing of the final PPP contract, the MoF should provide its final approval. For PPP projects involving central government support, the MoF should approve the FCCL resulting from the final PPP contract to ensure the project has the necessary support from the MoF to be carried out.
Outcome	Final estimate of project affordability and government's exposure.
Output	Final Affordability Assessment

3.1.5 Final check and adjustment of the budget at Step 3 of Stage 4: PPP Contract Signing & Financial Close

At the financial close stage, the financial model is used to fix the availability or service fees where these depend on the interest rates at financial close. Since bidders must offer a fixed availability or service fee in their bids, they assume a certain cost of debt and therefore interest rate risk, as the rates might change (up or down) by the time financial close is reached. One of the ways to deal with this issue is for the bidders to hedge the interest rate prior to financial close through a swaption.

Generally, the tender documents specify the swap rates to be used by bidders to be able to compare the bids. These rates should include a reasonable margin over the market rates in order to ensure that the project remains affordable.

Alternatively, to address the same risk without entering into a swaption, the Contracting Authority may agree to bear the risk and reward of (base) interest rate movements between the rates at the time of bid and the final rates at financial close.

Either way, the closing of the financing and fixing of the interest rate at financial close is the responsibility of the private contractor. However, this process should be supervised by the Contracting Authority and its financial advisors, and the Contracting Authority should agree to the final terms of the swaption or interest rate risk sharing adjustment.

At this point no reassessment of affordability is made, but the budget is adjusted taking into consideration the impact of interest rate movements.

What	**Final check and adjustment of the budget at Step 3 of Stage 4: PPP Contract Signing & Financial Close**
When	At the financial close stage.
Objective	Fix the interest rates and adjust the budget for the project.
How	1. Check the impact of the swap rate or other interest rate risk sharing mechanism and supervise its selection. 2. Update the final project budget based on the final availability or service fees.
Who	Contracting Authority , with guidance from PIMU and support of its technical and financial advisers.
Outcome	Final check and adjustment of the budget.

Appendix 1: Example calculations for preliminary cost estimation

As referenced in Section 3.1.1, see attached Excel spreadsheet for a worked example of simplified preliminary cost estimation to inform the decision to proceed to the Feasibility & Sustainability Study stage.