



JASPERS Horizontal Task Outputs –
Working Paper

Combining EU Grant Funding with PPP for
Infrastructure:
Conceptual Models and Case Examples

Report prepared on the basis of a Consultancy Contract with
PricewaterhouseCoopers

December 2010

Foreword

Several JASPERS beneficiary countries have requested JASPERS support in the area of integrating EU funding under projects planned for procurement via a Public Private Partnership (PPP) approach – in particular Romania, Bulgaria, Slovenia, Cyprus, Latvia and Malta. JASPERS has responded by providing support in two ways: (1) addressing key horizontal structuring issues for such projects; and (2) providing support to specific projects planned for EU funding under a PPP approach.

This Working Paper provides an overview and analysis of different possible models for PPP-grant blending, as well as a review of past projects following these models. JASPERS has decided to disseminate this report because it provides methodological support in a complex area of EU funding and because it will prove of interest to a wide range of public authorities and the private sector in several countries. This report is part of a series of JASPERS outputs from “horizontal” tasks aimed at addressing generic issues which impact the development of projects anticipated for EU-funding during 2007-2013.

In developing this paper, JASPERS has drawn on consultancy support from PricewaterhouseCoopers under a Framework Contract with a consortium led by Jacobs. This report contains the full version of the report prepared under this consulting assignment. We would like to thank the principle authors of the report, Fabio D’Aversa, Francesco Gargani, Maja Kozminska, Igor Dizdarevic, Anna Kiwiel, Anne Murath, Chantal Braquet, Velia Leone and Richard Abadie from the PricewaterhouseCoopers consultant team, as well as Gerry Muscat and Joachim Schneider, JASPERS Task Managers. We would also like to thank experts from EPEC (the European PPP Expertise Centre) for their review and input, as well as specialists consulted within the national administrations, especially from Romania, Poland, Portugal and Greece.

Following the preparation of this report, EPEC has been tasked with a workstream oriented to developing further the methodologies for the blending of grant and PPP funding. JASPERS is contributing to this work, and will also continue to be available to beneficiaries to address project-specific issues relating to grant-PPP blending under projects planned for EU co-financing, where requested via JASPERS annual Action Plans.

Luxembourg, December 2010

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JASPERS TASK 1C:

Combining EU Grant Funding with PPP for Infrastructure Projects

– Conceptual Models and Case Studies



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1 Introduction

1.1 Context

Most of the future infrastructure projects in the 12 new Member States are eligible for EU Structural Funds (SF) within the current 2007-2013 budgetary period. If the “infrastructure gap” in Europe is to be bridged efficiently and in a reasonable time frame, the use of Public Private Partnership (PPP) in infrastructure projects is a potential source of benefits, but poses particular challenges. Therefore several countries have requested support to clarify the main ways in which PPP and EU grants can be combined in an effective manner.

The Joint Assistance to Support Projects in European Regions –hereafter referred to as JASPERS- is a joint policy initiative of the European Commission (EC), the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and Kreditanstalt für Wiederaufbau (KfW). JASPERS is tasked with assisting the new Member States (NMS)¹ to prepare major infrastructure projects which will be assisted by the EU Structural and Cohesion Funds over the budgetary planning period 2007-2013. Specifically, one of JASPERS tasks is to offer assistance to the MS to apply EU grant funding to infrastructure projects under a Public Private Partnership (PPP) structure.

PricewaterhouseCoopers (PwC) has been tasked by JASPERS to provide support in this work. The present report (“Models and Case Examples”) focuses on Conceptual Models and Case Studies in the field of Combining PPP with Grant Financing.

1.2 Objectives and Methodological approach

The objective of the present report is to provide EU grant beneficiaries and practitioners with a useful and practical tool for developing projects under PPP structures blended with EU grants. We intend to provide an analysis of the most

¹ The NMS are: Hungary, Poland, Czech Republic, Slovakia, Slovenia, Latvia, Estonia, Lithuania, Cyprus, Malta, Romania and Bulgaria.

typical models for PPP-grant blending, illustrated by some case examples, in such a way that it can be clearly understood by the beneficiaries and enable them to put in place real projects.

The report uses a balanced approach with no intention of advocating for or against the use of PPP. It aims at objectively:

- presenting PPP as one possible procurement tool when using EU funds, and
- providing key answers and practical tools for handling the PPP-grant blending issues.

In order to achieve these objectives, our methodology consisted of three main steps:

- Identify and analyse the key features relevant to PPP blended projects whatever the PPP model is chosen;
- Review four possible PPP models and analyse the impacts of the grant aspects on the project structure at the level of each key feature;
- Use the Public Sector Comparator (PSC) in a specific case study in order to compare the various blended PPP structures. We developed a specific application of the traditional Public Sector Comparator which allows assessing and comparing the Value for Money of a project done as a typical public investment and done as a PPP. This will help to examine which of the blended PPP structures offers the best value for money for a given project and what are the expected effects of EU funding.

During all three steps, PwC based its arguments on exhaustive documentation from EU regulations or recommendations (notably the Commission's 2003 guidelines for successful PPP), available documentation on existing projects and past experiences.

2 Key features to handle when blending EU grants with different PPP models

For clarity purposes, we present below an overview of the main characteristics of the four models and of the key features which we then analyse for all the models together.

2.1 Presentation of the four PPP models and of ten key features

A Public Private Partnership can be defined as a partnership between a public entity (national, regional or local) and a private entity for the purpose of delivering a project or a service traditionally provided by a public administration. Essential characteristics of a PPP are the degree of risk transfer from the public to the private entity and the possibility for the public sector to mobilise financial resources as well as technical skills of the private sector.

An EU grant is a non-reimbursable contribution to a project from the European Structural Funds. In practice, the Commission awards grants from its budgetary resources in order to implement projects or activities in relation to European Union policies.

In order to help identify and analyse the key aspects of blending the PPP and the EU grant, we have defined four models which we consider the most typical and suitable to cover the range of project types likely to be considered for this kind of funding.

2.1.1 The four PPP models

We have defined the model cases based on the degree of risk transfer to the private sector envisaged under each model project type – ranging from models with limited risk transfer (eg. operation and maintenance risk) through to models with higher risk transfer (eg. design, construction, financing and operations risk). The four PPP models we examine are defined as follows.

- **Private Operation and Maintenance (PPP1)**: the construction phase is clearly separated from the operating and maintenance phase, with two different contracts. In the first contract the private entity is in charge of the Design and Build functions. In the second one, the same or a different private entity is in charge of Operation and Maintenance of the infrastructure.

- **Design Build Operate (DBO) (PPP2)**: the public entity awards a contract for construction, operating and maintenance phases to the private entity through a single DBO contract.
- **Parallel Co-finance of capex (PPP 3)**: it is used for the financing of two complementary infrastructures through two separate contracts. In one contract, the private entity designs and builds one infrastructure; in the other contract, the (same or different) private partner designs, builds and finances the second infrastructure and operates and maintains both infrastructures. In this model the private partner partly or fully participates in the financing of the second contract. The EU grant is used to co-finance the first infrastructure only.
- **Design, Build, Finance and Operate (DBFO) (PPP 4, PPP 5)**: a DBFO is a model where risk is transferred to the private partner for designing, building, financing and operating. A DBFO can be either a classical concession² model with user-charge revenue accruing to the private partner or a model using availability payments (with or without user charges accruing to the private partner) over the whole life of the project, or a mix of both.

In terms of blending, if a DBFO scheme is partly financed with EU grants, there are two possible scenarios, depending on whether the capex part is co-financed by EU funds after full and satisfactory completion of construction, or through availability payments during the whole life-cycle of the project. Both cases will be examined.

- **DBFO where EU funds used to co-finance capex are disbursed on completion of construction: (PPP 4)** in this case the EU funds are used to co-finance capex upon completion and delivery of the infrastructure, which does not present any major constraints. Advantages and drawbacks will be analysed.
- **DBFO with availability scheme where EU funds co-finance the capex part of availability payments over the whole life of the project: (PPP 5)** the contractor receives a stream of availability payments from the public entity from the moment of completion of construction and throughout the operating and maintenance phase. The EU grant is used to co-finance the capex part of the availability payments over the whole life-cycle of the project. For the moment this approach remains hypothetical, as the application of EU funds beyond December 2015 is not permitted by the regulations. However, it is

²In line with Commission's interpretative communication on concessions under community law (2000/C 121/02)

analysed here as a hypothetical model, for comparative purposes, and in order to explore whether further research is warranted into this approach for the future. For discussion purposes, the concept of using an escrow account as an instrument to channel the funds is explored.

The report focuses on the impact of EU grants blended with PPP and on the procedure of mobilisation of EU grants. Our analysis runs through key features that have to be tackled in order to comply with EU regulations and maximise the absorption of the grants.

2.1.2 Ten key grant-related features

In this framework, the ten key grant-related features that have to be taken into account are the following ones. Their analysis is essential because it answers concrete questions all practitioners have to ask themselves before and during a PPP-grant blended project.

1. Role of the key stakeholders in PPP and grant terms

- Who are the key stakeholders and which is in charge of what?
- Who is receiving the grant and for what purpose?
- What are the contractual relationships between the stakeholders?

2. Financing scheme

- What funds are used to finance the project and in which way?
- What part of expenditure is co-financed by the EU grants?
- When does the EU grant co-financing occur (construction or operation phase)?

3. Eligible beneficiaries for EU Grants

- Who are the possible beneficiaries?

4. Eligible expenditure for grant co-financing

- Which expenditure can be eligible for co-financing?
- For how long is expenditure eligible for co-financing given the long life cycle of PPP projects?
- How is the funding gap determined and the EU grant calculated?

5. Asset ownership

- Who owns the infrastructure?
- Can there be transfer of ownership?

6. Tender criteria and procurement procedure suitable for PPP

- Does the involvement of EU grant funding impact the choice of selection criteria for the PPP, and if so, how?
- What procurement procedures are available and on which criteria is the choice of the optimal procurement procedure based?

7. Timing of the PPP relating to the grant process

- What are the key interfaces between structuring and tendering of the PPP and preparation of the grant application? What should come first, the PPP tender or the grant application?
- How to coordinate both the PPP tendering process and the grant application process (time planning and management)?

8. Risk Allocation

- What are the risks at stake?
- How are those risks distributed between the public and the private sector?
- How are the risks and their impact measured?

9. Tax issues

- What are the tax consequences of a PPP-grant blended project?
- What are the aspects to consider in order to optimise the tax structure, comply with the EU Regulations and avoid unexpected tax holidays?

10. Reporting arrangements and audit arrangements

- What are the reporting obligations on a project level?
- How does a project manager address them?
- What are the audit obligations on a project level?

As we can see from this brief overview, these ten features are key because they raise a number of questions that any public administration of any Member state will have to answer when considering whether or not to carry out a project through a blending approach. Some of the questions are answered by the EU regulations and we elaborate on that each time it is the case. Some of the questions will mainly depend on the specific legal framework of a given Member state³. Eventually, other questions are a matter of choice on a project level rather than of regulatory constraints.

³ A country by country analysis is not in the scope of this report.

In order to provide practical and operational answers to these questions, we firstly analyse all of the key features for all models of PPP-grant blending project, with the objective of providing concrete guidance for handling blending issues.

2.2 Analysis of key features for all models of PPP-grant blending project

Handling the blending issues can present some features common to all PPP models.

Please note that some of the features are not necessarily PPP specific and are also present in traditional procurement. For the scope of this report, we do not insist on the distinction between PPP/traditional public procurement features. The report focuses on the most important features which PPPs have to take into account, even though in many cases they are not different from traditionally procured projects. In any case, compliance with EU regulations on mobilisation of Structural Funds is required. Whatever model is chosen, the impacts are analysed hereafter key feature by key feature.

1. Role of the key stakeholders in PPP and grant terms

The general principle in terms of stakeholders' respective roles⁴ is the following: the responsibility for any request for EU assistance remains with the beneficiary country and the decision to provide an EU grant for a project remains the responsibility of the European Commission. Moreover, national authorities are responsible for ensuring compliance with all legal conditions for co-financing⁵.

- **Grant terms:** the General Regulation⁶ provides a list of authorities which have to be designated by the Member State in order to manage the EU grants and also defines other relevant stakeholders:
 - The Managing Authority (MA), responsible for managing the operational programme⁷. Usually, a Programme Secretariat, is responsible for assisting the MA in the execution of tasks such as monitoring, reporting, communication and publicity.

⁴ Aide-mémoire for the desk officers for the programming period 2007-2013, p.74

⁵ Aide-mémoire for the desk officers for the programming period 2007-2013, p.77

⁶ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 59

⁷ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 60

- The Certifying Authority (CA), responsible for certifying statement of expenditure and applications for payment before they are sent to the Commission⁸. All EU funds are first paid by the Commission to the Certifying Authority and not directly to the Beneficiary.
 - The Audit Authority (AA), responsible for verifying the effective functioning of the management and control system⁹
 - The Programme Monitoring Committee, which ensures the quality and the effectiveness of the programme and the use of the EU funding¹⁰.
 - The Beneficiary is the entity receiving the EU grant. The Authority contracting the PPP (central or local public administration) will typically be the beneficiary of the grant because, as per Article 2(4) of the Regulation No 1083/2006, the beneficiary must be the “initiator” of an operation, which role cannot be fulfilled by the private partner (see 3 below).
 - An intermediate body is “any public or private body or service which acts under the responsibility of a managing or certifying authority, or which carries out duties on behalf of such an authority vis-à-vis beneficiaries implementing operations”¹¹;
- **PPP terms:** whatever the PPP model, the following key stakeholders will be involved, but with roles that might differ from one model to another:
- The Contracting Authority is in charge of issuing the call for tenders and choosing the preferred bidder with whom it will sign the PPP contract. It is generally a local or central public administration. As mentioned previously under grant terms it would normally be the beneficiary of the grant.
 - The Contractor is the private entity signing the contract with the contracting authority and then providing the requested services.
 - The Design and Build Contractor (DBC) is the private entity in charge of Designing and Building the infrastructure.
 - The Operating Contractor (OC) is the private entity in charge of Operating and/or Maintaining the infrastructure.

⁸ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 61

⁹ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 62

¹⁰ Council Regulation (EC) No 1083/2006 of 11 July 2006, Articles 63-68

¹¹ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 2 (6)

- The Special Purpose Vehicle (SPV) is the project company whose sole purpose is the delivery of the project. It can be set up by the private entity(ies) alone or in conjunction with a public body. The SPV can be the DBC, the OC, or combine both roles.

2. Financing Scheme

There is no general rule for the set-up of a financing scheme. It depends by definition on the financial structuring of the PPP. Therefore we will indicate for each model:

- what is the financial scheme implied by the model and,
- how the EU grant impacts that scheme.

3. Eligible beneficiaries for EU Grants:

The beneficiary may be an operator, a body or a firm which is responsible for initiating or initiating and implementing operations¹². This beneficiary may be:

- a Public Administration (central or local)
- a Private Company
- a Non-Governmental Organization

The regulatory requirement that the beneficiary be an “initiator” of a project can be satisfied under a PPP only if the beneficiary is the public authority awarding the PPP contract. This would most likely be a ministry, a public agency, a municipality with a statutory responsibility for service delivery, etc.

When it comes to the private partner being beneficiary, the Commission has made clear that it is not normally possible under a PPP structure because the PPP SPV is selected as part of the project preparation process, and therefore cannot be considered as an “initiator”.

4. Eligible expenditure for grant co-financing:

Under the 2006 regulations, the Member States have more autonomy than in the past since the rules on eligibility of expenditure are now established at national level.¹³

Those rules are however “subject to the exceptions provided for in the General Regulation and in the specific regulations for each Fund”¹⁴.

¹² Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 2 (4)

¹³ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 56(4)

¹⁴ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 56(4)

The main elements contained in the EU regulations point out four key elements:

- Expenditures must be directly attributable to the project;
- Timing: expenditures must be paid by the beneficiary between the date of submission of the Operational Programme to the Commission or the 1st January 2007 (whichever is earlier) and the 31st December 2015¹⁵ ;
- Ineligible expenditures¹⁶ are recoverable VAT, interests on debt, and land purchase above 10 % of the total eligible expenditure for the operation concerned. A full list is available in the ERDF regulation¹⁷ ;
- In the case of a revenue-generating project the applicant has to calculate the expected flow of user charge revenue and deduct it from the eligible costs¹⁸ . This corresponds to the “funding-gap” method we define further on in this section on eligible expenditure.

For infrastructure projects, EU Structural Funds are used for co-financing capital expenditure. The Commission’s Working Document No.3 clearly states that for infrastructure projects “capital expenditure on transport, telecommunications, energy, water, environmental protection and health is considered eligible¹⁹”.

Capital expenditure is normally paid upfront and during the construction phase, thus complying with the 2015 time-limit. However, under a DBFO scheme, except in the case of concessions, the public contribution normally takes the form of availability payments. These payments start once the project enters its operating phase. If they are to be co-financed by EU funds, the time limit of 2015 could represent a problem. In the section dedicated to the DBFO, we will describe how to solve this problem.

4.1 Calculating the level of EU grant based on eligible expenditure

The eligible expenditure is the key basis for the calculation of the level of Community assistance. The method of calculation depends on the type of project:

- If the project is not generating any revenue, the level of grant is calculated simply by applying the co-financing rate to the total of eligible costs. The co-financing rate, defined as the percentage of total eligible costs that can be co-

¹⁵ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 56(1-2)

¹⁶ Regulation (EC) No. 1080/2006 (ERDF Regulation)

¹⁷ Regulation (EC) No. 1080/2006, art. 7

¹⁸ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 55 and COCOF/07/0074/03

¹⁹ Commission’s Working Document No.3, December 2006, “Commission Methodological paper giving guidelines on the calculation of public or equivalent structural spending for the purposes of additionality”, p.4

financed by the EU grant, is set by priority axis in every operational programme.

- If the project is generating revenue, the funding-gap²⁰ method will be applied.

4.2 The funding gap method

The following is based on the Commission's working document²¹ which contains full guidance on the calculation of the funding gap. This calculation is independent of the form of the project and remains the same both in case of a PPP and of a traditional public procurement.

The funding gap method consists in applying the co-financing rate to the part of investment costs that are not covered by the user charge revenues generated by the project. That part is the funding gap and qualifies as eligible expenditure. The co-financing rate of the OP is then applied to the funding gap. It is important not to forget that if the expected user charge revenue is found to be higher than the investment costs and the operating costs, the project is not eligible for EU funding. The EU grant can only fund the point at which profitability and sustainability is achieved:

- without a grant the $NPV < 0$, and
- with a grant the $NPV = 0$

In order to apply the funding-gap method, the definition of "revenues" has to be clear:

- They are only generated through charges directly borne by users and therefore availability payments are not treated as revenues for the purpose of calculating the funding gap;
- Residual value of assets (NPV) has to be included (see working example below, Table 1).

²⁰ The funding-gap method is defined in article 55 of the General Regulation. It is also clearly explained in the Commission's Working Document No.4 "Guidance on the methodology for carrying out cost-benefit analysis" and in the COCOF note on Revenue Generating projects

²¹ Commission's Working Document No.4 "Guidance on the methodology for carrying out cost-benefit analysis"

Working example: calculate the grant amount using the funding gap method

Based on the documentation provided by the Commission²², let us take an example of a 20 years PPP project where the EU Structural Funds will be used for co-financing.

The assumptions are the following:

- The co-financing rate of the Operational Programme is 75%;
- The discount rate in real terms is 5%²³ and gives the Net Present Value (NPV) when applied;
- The cash-flow profile of the project is the following:

Table 1: Simulation of cash-flow profile, undiscounted

Year	Capex	Opex	Estimated user charge revenue	Residual Value	Eligible expenditure
2007	25	-	-	-	20
2008	25	-	-	-	20
2009	25	-	-	-	20
2010	25	-	-	-	20
2011	-	2	4	-	-
2012	-	2	4	-	-
2013	-	2	4	-	-
2014...2026	-	26	52	5	-
TOTAL	100	32	64		80
TOTAL NPV	89	18	36	2	69

²² COCOF note on revenue-generating projects and Commissions working document No4,

²³ According to Working Document No4, the benchmark financial rate is 5%, although it can be adjusted upwards for PPP projects.

In this example there are three major stages to go through:

1. Determine eligible expenditure (EE)
2. Based on it, calculate the funding gap (FG)
3. Apply the co-financing rate to the funding gap in order to obtain the grant amount (EU grant)

1. Calculate eligible expenditure

- Calculate:
 - Revenue of project by year for economic life based on the cash-flow profile of revenues and residual value of assets
 - Capex by year for economic life
 - Opex by year for economic life
- Deduct ineligible costs to obtain eligible costs, say it amounts to 80
- Discount capex at 5% for the period of economic life and obtain the NPV of investment cost (IC): 89
- Calculate net revenue (NR): $36 + 2 - 18 = 20$

Eligible expenditure is equal to investment cost less net revenue (discounted):

$$EE = DIC - DNR$$

$$EE = 89 - 20 = 69$$

2. Calculate the funding gap based on eligible expenditure

- The Funding Gap Rate is a percentage corresponding to Eligible Expenditure divided by the investment cost:

$$FG = EE / IC \times 100$$

$$FG = 69 / 89 \times 100 = 77,5 \%$$

The funding gap for the project is 77,5%

3. Calculate the grant decision amount

- The decision amount (DA) is the amount to which the co-financing rate contained in the operational programme applies. As mentioned in the beginning, the co-financing rate is 75%.

- It will apply to the funding gap rate applied to the eligible costs (EC):

$$DA = FG \times EC$$

$$DA = 80 \times 0.775 = 62$$

- Applying the co-financing rate gives the percentage of eligible costs financed by the EU grant:

$$62 \times 0.75 = 46.5$$

The EU grant will finance 46.5% of the eligible costs of the project.

5. Asset ownership

When an infrastructure project is undertaken with a PPP structure, the entities involved are eligible for owning the infrastructure asset. Two scenarios are possible:

- The public entity remains the owner of the asset;
- The private entity is the owner of the asset for the contract period and there is a transfer to the public entity at the end of the contract. The residual value is to be determined between the public and the private partners;

For instance, in the Dublin Bay DBO project, it was agreed that the public sector remained the owner of the assets.

The application of these scenarios will depend on the PPP model that is being set up and on the contractual arrangements within it. There is no direct relation between asset ownership and the fact that the PPP is blended with EU funds.

Usually, in a DBFO and under availability payment scheme, the ownership of the asset is returned to the public sector at the end of the contract. In revenue generating transport infrastructure projects where an SPV is set up, the infrastructure represents the main asset of the SPV. There are no particular pros and cons since this is a typically contractual matter strongly depending on the specific context of the project.

6. Tender criteria and procurement procedure suitable for PPP

➤ **PPP Tender criteria**

Following EU regulations²⁴, there are two possible kinds of criteria: either the lowest price or the “economically most advantageous” tender, which basically corresponds to the best value for money criteria and is the optimum combination of whole-life costs and benefits assessed against pre-determined evaluation award criteria. Since PPP contracts are long-term contracts, we suggest the best value for money criteria to be applied (see also section 3 on the PSC) as a general principle.

What selection criteria are to be applied in the tender process for the choice of the preferred bidder? Usually in PPP, the common practice is to apply a criterion referring to the price of services offered by the bidders to carry out design, construction and operating and maintaining stages. The fact that a PPP is blended with EU Structural Funds which co-finance only capex does not necessarily mean the criterion only relating to the price of capex should be applied. Indeed, the European Commission

²⁴ Directive 2004/18/EC of the European Parliament and the Council, article 53

has no objection to a criterion which includes the whole life cost, even though this could lead to a more expensive capex leading to a higher contribution from the EU Structural Funds (balanced by lower operating costs borne by the Beneficiary).

As a consequence, the optimal criterion should be the Net Present Value (NPV) of both capex and opex elements in order to optimise the whole project life cycle management. The EC accepts that a Beneficiary evaluates together investment costs and operational efficiency rather than just minimum capex cost.

Another relevant issue regarding tender criteria arises from the fact that the Commission has to be presented with a clear figure on capex, since it is financing only expenditure related to the investment. In order to make certain to comply with SF Regulations, it is recommended that the Contracting Authority consider the possibility to include in the tender documents a request for the bidders to separate capex from opex, the idea being to divide an availability payment into dedicated streams for servicing debt incurred during construction, assuring a base rate of return for the private partner, and operational expenditures. This is not always the current practice in the market but should not pose any major problems. Indeed, this should not be viewed as an obstacle since it should be a simple matter of considering all estimated costs over the whole life-cycle of the PPP and then separating capex from opex.

As a general principle, while preparing the procurement, the contracting authority should:

- have already performed a feasibility study as extensive as possible (including financial analysis, cost-benefit analysis and public sector comparator analysis) and gathered as much information as possible;
- include precise information in the tender so that the private entity can assess costs and schedule.

It should be underlined that normally the PPP best practices include such preparation in any case, regardless of EU funding.

➤ ***Choice of procurement procedure***

Public bodies and certain agencies operating in the fields of utilities in receipt of EU Structural Funds must ensure that, when issuing calls for tenders for public works, supplies or services, they fully comply with the relevant EU Directives on public procurement²⁵. These Directives are aimed at local authorities and other public bodies

²⁵ Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, and Directive 2004/17/EC

across the EU, and regulate the advertisement and procedures for the award of public works, services and supply contracts.

There is no regulatory obstacle in choosing any of the public procurement procedures set out in the Directive 2004/18/EC when blending the PPP with EU grants. Therefore the choice of a specific procedure will depend on the characteristics of a particular project. The three main procurement procedures defined by the Directive are:

- Restricted procedure: any economic operator may request to participate and only those economic operators invited by the contracting authority may submit a tender.
- Competitive dialogue²⁶: any economic operator may request to participate and the contracting authority conducts a dialogue with the candidates admitted to that procedure, with the aim of developing one or more suitable alternatives capable of meeting its requirements, and on the basis of which the candidates chosen are invited to tender.
- Negotiated procedure: the contracting authorities consult the economic operators of their choice and negotiate the terms of contract with one or more of these. This procedure can be used only under specific conditions such as occurrence of unpredicted factors, exceptional cases, no proposals submitted in a restricted procedure, etc.²⁷ .

The choice of a competitive dialogue is the most suitable one when the project presents a degree of complexity rendering the use of the restricted procedure difficult to apply²⁸ .

This is confirmed by the Commission, which considers competitive dialogue can be used “in particular with the implementation of important integrated transport infrastructure projects, large computer networks or projects involving complex and structured financing the financial and legal make-up of which cannot be defined in advance²⁹ .”

coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

²⁶ See the Commission’s Explanatory Note on Competitive Dialogue CC/2005/04_rev 1 of 5.10.2005 which synthesises both the conditions under which the Competitive Dialogue can be used and the procedures to respect when conducting it.

²⁷ Directive 2004/18/EC art 30 and 31 list the conditions under which a negotiated procedure can be used.

²⁸ Directive 2004/18/EC art 1(11)

²⁹ Directive 2004/18/EC Recital 31

However, there is no legal restriction to use the other procurement procedures: the choice will largely depend on the nature of the projects and/or the Member State's specificities.

7. Timing of the PPP relating to the grant process

The key issue raised here is the articulation of two distinct processes: the typical PPP procurement process and the EU grant application. In other words, at what stage of the PPP procurement process should the grant application be submitted to the Commission? Or, put another way, how advanced should the PPP process be when the grant application is sent to the Commission?

In general the PPP process would need to be well defined and described in the grant application, so that its main features are taken into account in the grant approval process³⁰. But at the same time, the grant approval process needs also to be well described in the PPP tender documentation, to give comfort to bidders that the EU grant funding will indeed materialise, and at the right time.

Grant application can be submitted either before commercial close or after commercial close.

By commercial close we understand the award of the contract to the preferred bidder. It means the identity of the PPP company is fully known after commercial close.

Scenario 1: The grant application is submitted before commercial close

The timing is the following: once the Commission approves the grant, the tendering starts and the information on the level of EU grant is fed into the tender dossier.

In order to apply this scenario, the grant applicant has to have at its disposal a good level of information. This implies the project has to be well advanced at an early stage with a high quality feasibility studies. The grant applicant must be able to provide the Commission with the results of feasibility studies including financial and economic analysis (especially in case of major projects for which it is mandatory³¹). The financial analysis is a key point. Besides evaluating the financial profitability of the

³⁰ According Council Regulation (EC) No 1083/2006, Article 40, the grant application should include inter alia: information on the body responsible for the implementation of the project; description of the investment including the estimation of its financial volume; estimation of the amount to be co-financed by the EU funds.

³¹ Council Regulation (EC) No 1083/2006, Article 40 (c) and (e)

investment and the financial sustainability of the project, it determines the appropriate level of contribution from the Funds³².

There are two main advantages to this scenario:

- the entire process is shortened because it is not necessary to wait for the award of the PPP contract to submit the grant application;
- the private sector is able to take the EU grant into account in its proposal.

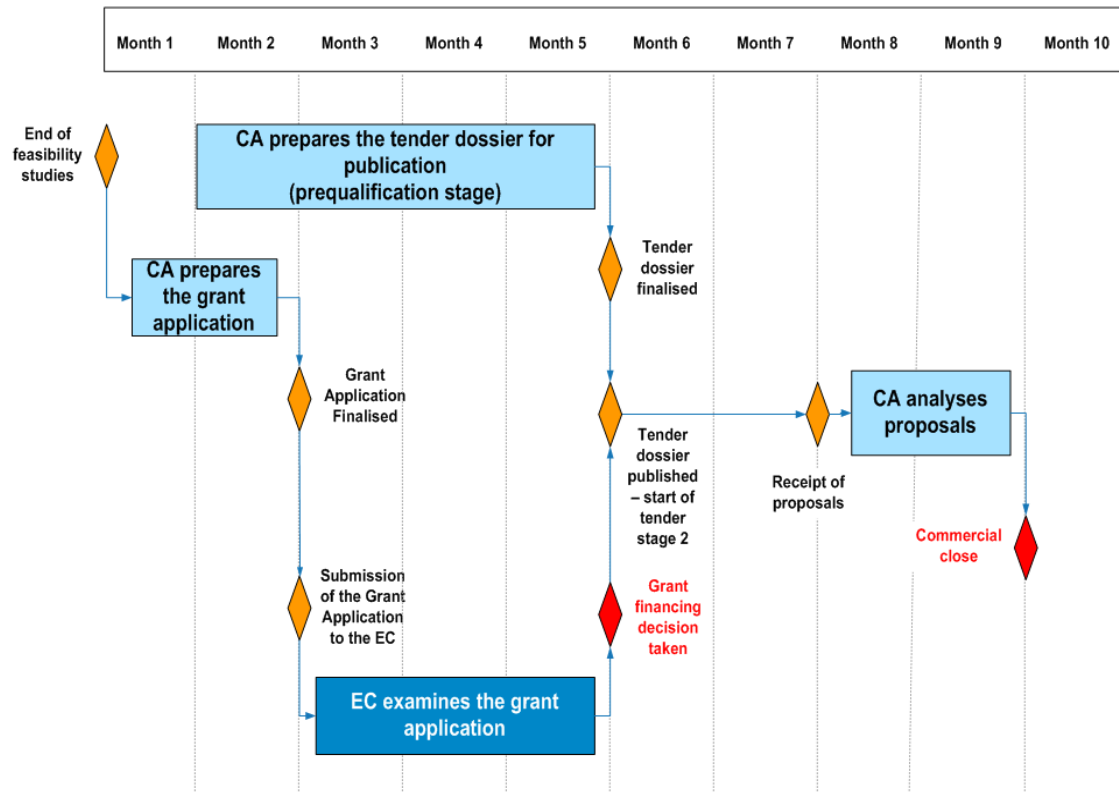
However, there is also a drawback. The Commission awards the grant at the level resulting from the cost-benefit analysis. There is a risk, once the call for tenders has been launched, that the received bids turn out to be much higher (or much lower, making the EU funds over-financing the project) than what was estimated in the feasibility studies and in the cost-benefit analysis. Therefore, the real need for co-financing will be superior/lower to the actual EU grant. There is nothing insurmountable if such a situation occurs, but it would take time if it is necessary to re-submit the application taking into account the new adjustments. This means that the entire process will be expanded by the time the Commission will need to examine the new application. In any case, the Commission has a legal obligation to decide on the grant approval within three months from the day of submission³³. One way of avoiding this problem is the general recommendation for the Contracting Authority to regularly communicate with both the EC and the national authorities from the earliest stage of the project. In addition, this risk could be avoided if, in the tender documents, the award criterion of the PPP is not lowest price but rather something independent of the level of grant (such as amount of additional capex, or duration of the contract, for instance).

The graph below illustrates the timing of PPP and grant application processes when considering scenario 1.

³² Working Document No.4 of the Commission, "Guidance on the methodology for carrying out cost-benefit analysis", p.7

³³ Article 41 of the General Regulation

Figure 1: Scenario 1 - Grant application submitted before commercial close



Our starting point is after the feasibility studies are completed, which are not directly impacted by the grant application process. The overall duration from the first day of preparation until the start of the construction can be longer than the indicative 10 months represented on the graph (in most cases it will be much longer).

Moreover, most of the tenders are two-staged with a prequalification stage followed by the analysis of received proposals. The prequalification stage can take place earlier than indicated on the graph or while the grant application is being examined; however, this has no impact on the fact that the grant application is anyways submitted before commercial close.

The beneficiary has to prepare the grant application based on the results of the feasibility studies and of the cost-benefit analysis. The beneficiary has to make sure that the application includes a financial analysis of the project, including all the elements necessary for the calculation of the level of the EU grant based on eligible expenditure.

Once the grant application is submitted, the Commission has three months (as a legal maximum) to approve or not the grant. It is recommended that the CA uses that time

to carefully prepare the tender dossier. Once the grant financing decision is taken, the elements related to this decision are included into the tender dossier, which is then ready to be published.

It is important to note that the three months period assumes that the grant application contains all relevant information needed for approving the project. If this is not the case, the application review process may be interrupted by DG REGIO while further information is requested from the Beneficiary. In order to reduce the risk of such interruptions it is especially important to have a clear presentation of the PPP preparation and tendering process, as this could be one area in which DG REGIO might request additional information.

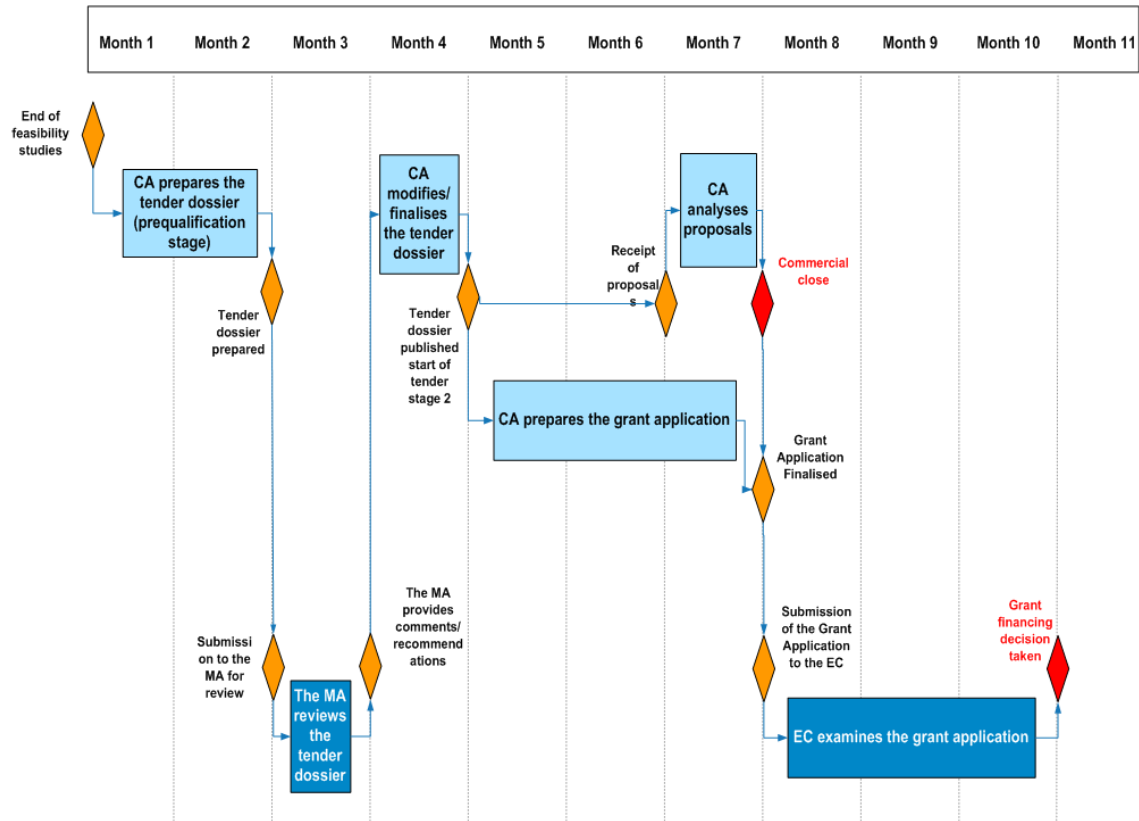
The Directive 2004/18 on the public procurement sets the minimum delays between the tender publication and the receipt of proposals at 40 days from the day the tender was published in case of a restricted procedure. In the case of a competitive dialogue the delay is 37 days. The Contracting Authority should bear in mind that those are minimums. The complexity of infrastructure projects will most likely require longer delays. In the graph we indicated an estimated duration of two months (whatever the procurement procedure) but it is clear that the process can take much longer. Eventually, once the selection is completed, the PPP contract is awarded to the private partner and the project can start.

Scenario 2: The grant application is submitted after commercial close

In this case, the grant application is sent to the Commission only after commercial close. This will be the case mainly when the feasibility studies are not detailed enough and the level of information is insufficient for introducing an application, or when the results of the bids, potentially in the case of a competitive dialogue procedure, could substantially influence the financial figures of the project. It could also be applied if the Beneficiary wishes to reduce the risk of having to re-submit an application due to changes in project cost and grant rate resulting from the tender process. In this case the application has to be submitted after at least the commercial close of the bid process introducing a suspensive close for the financial aspects.

The graph below illustrates this second scenario:

Figure 2: Scenario 2 - Grant application submitted after commercial close



One of the characteristics of Scenario 2 is that the grant might not be approved after the commercial close, although this risk might be lower in the case the project is already listed as an indicative major project in the Operational Programme. As a practical and operational solution to mitigate this risk, we recommend the Beneficiary to always communicate with the Managing Authority and to request a review of the tender dossier before it is published. After review, the grant application is finally submitted to the Commission. It can also suggest additional improvements or modification, which the grant applicant will take the time to include in its tender dossier before publishing it. This will be a valuable support for the project when it comes to be examined by the Commission for final grant approval. This type of communication could also be established at Commission level, although it should be noted the Commission is more involved at OP level than on a project by project basis. JASPERS, whose role is precisely the assistance to Member States for this type of projects, should also be considered as a valuable interlocutor.

Once the tender dossier is published, the Contracting Authority enters a more passive period while waiting for the proposals. This time should be used to start as soon as possible (if it has not been done already) preparing the grant application.

When all proposals have been collected, they have to be analysed and compared in order to select the preferred bidder. At the same time as the selection is coming to its end, the CA has to finalise the grant application. Ensuring proper timing is critical in order to chronologically:

1. Close the commercial phase
2. Include all the relevant information on the contract in the grant application.
3. Submit the grant application.

As mentioned previously, the Commission has the obligation to communicate its decision within a maximum of three months from the day the grant application is submitted, provided the application is clear and the application process does not need to be interrupted to obtain further information.

The two timing graphs presented are applicable to any PPP model. The choice will depend on the specifics of the project. The table below summarises the respective advantages and drawbacks of each scenario, taking into account that in each case careful time management is crucial:

Table 2: Advantages/drawbacks of each timing scenario

	Advantages	Drawbacks	Type of projects where preferable
Scenario 1: grant application before commercial close	<ul style="list-style-type: none"> - Reduces the delays of grant award - The private sector can fully integrate the EU grant into its proposal 	<ul style="list-style-type: none"> - Risk of bids being higher/lower than estimated and therefore level of grant is inaccurate 	<ul style="list-style-type: none"> - High quality of feasibility studies
Scenario 2: grant application after commercial close	<ul style="list-style-type: none"> - Allows to provide full information on the PPP contract in the grant application - Reduces uncertainty on award of grant 	<ul style="list-style-type: none"> - Extends the overall length of the procedure 	<ul style="list-style-type: none"> - When bids could substantially influence the financial figures of the project (competitive dialogue)

8. Risk Allocation

Allocation of risks differs from one model to another, since the key point of having different models is precisely the degree of the risk transfer. The issue of risk allocation and above all the financial impact of the risks are analysed in detail in the Public Sector Comparator section (section 3). Elaborating a transparent allocation of risks between the private and the public entities is crucial for ensuring an efficient partnership.

Additional risks related to the EU co-financing and common to all models have to be taken into account.

The major risk, prior to the start of the project and whatever the model, is related to the possibility of not being awarded with the EU grant. This could be mitigated in several ways whatever the PPP model:

- The public body takes the risk on itself, if the EU funds are not granted – matching funds will be supplied by the public body (this might be a significant financial commitment).
- Procurement terms may require the private partners to make alternative offers, with two scenarios depending on whether the project receives or not the EU grant (e.g. in the latter case the user charges to be imposed will be higher to allow the private partner to cover higher financing costs).
- Submission before publication of the tender dossier to the MA (see previous paragraph on timing)

Another risk is related to the uncertainty on the level of grant. As the private sector usually does not accept the risk of the EU public contribution being lower than the amount reflected in the concession contract, it is up to the public authorities involved to underwrite the EU grant in the contract. If the co-financing is below the amount expected, the public sector will have to fill in with additional funds for the project (see section 2.4 and the example of the Athens International Airport, where this is precisely what happened).

9. Tax issues

Throughout the life cycle of the PPP, both the private contractor and the public entity will be confronted with taxation such as profit tax, payroll tax, property (transfer) tax, or value added tax (VAT).

The main question we address in this report is the impact of value added tax (VAT) on the structure of the PPP-EU grant blended projects and specifically the eligibility of VAT for EU co-financing. The EU regulations specify that recoverable VAT is not an eligible expense for EU co-financing³⁴.

It is important to underline that the VAT aspects will greatly depend on:

- national legislations
- type of projects
- the VAT status of the beneficiary (VAT taxable person or not)

Therefore the question needs to be addressed on a country-specific basis depending on national VAT rules and taking into account the specifics of a given project. We will provide a common analysis for all PPP models and examine specificities of the PPP models when relevant.

VAT is a consumption tax. It is calculated on the price of goods supplied and services rendered, as its essence is to be charged at all stages of production, but with a mechanism enabling the firms to offset the tax they have paid on their own purchases of goods and services against the tax they charge on their sales of goods and services³⁵. Design and construction as well as operational and maintenance activities are in principle VAT-taxable activities³⁶.

Two case-scenarios are possible in terms of VAT mechanisms in a PPP depending on one main factor which is whether the beneficiary of EU funds is able to recover VAT.

³⁴ Regulation (EC) No. 1080/2006, art. 7

³⁵ See "The Modern VAT", International Monetary Fund, 2001

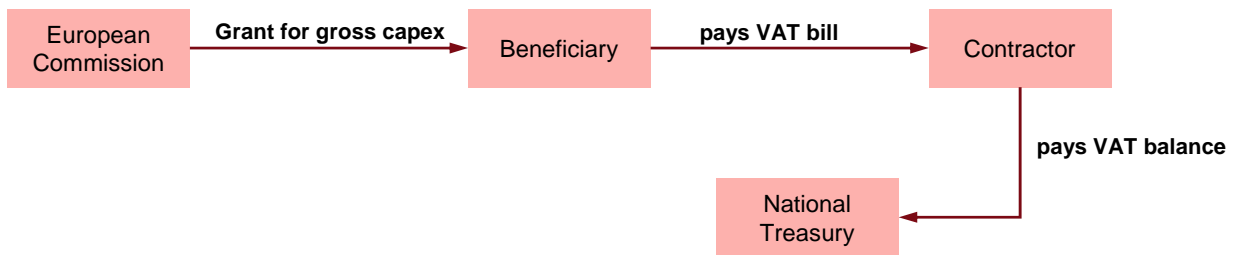
³⁶ It should be noted however that real estate rental and lease income and financing are in principle exempt activities

9.1 Beneficiary unable to recover VAT

The following graph illustrates the mechanism:

Figure 3: VAT mechanism if the beneficiary is unable to recover VAT

Beneficiary is not a VAT taxpayer



The beneficiary contracts for services and/or construction and receives VAT invoices. The beneficiary pays them, therefore incurring VAT. At the same time, the beneficiary cannot recover VAT either by deducting against VAT on revenues, or by petitioning the fiscal authorities to return VAT paid. This situation (lack of the possibility to recover VAT) may happen e.g. when the beneficiary is not a VAT taxpayer or it performs activities not giving the right to recover VAT.

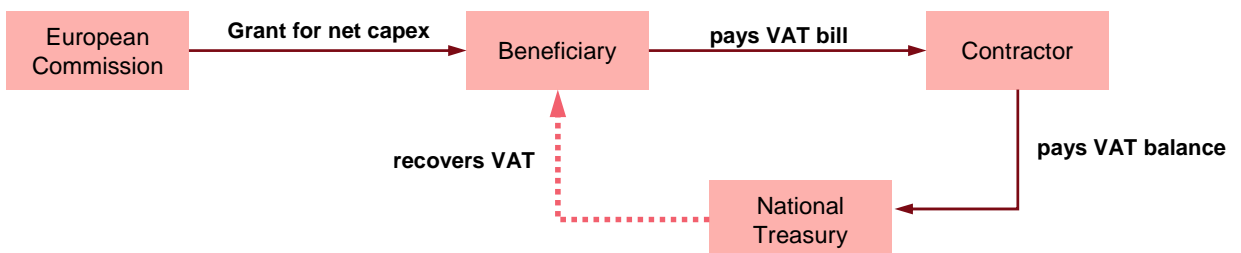
In this case VAT is an eligible cost and the grant is calculated for gross capex.

9.2 Beneficiary is a VAT taxpayer

The following graph illustrates the mechanism:

Figure 4: VAT mechanism if the beneficiary is able to recover VAT

Beneficiary is a VAT taxpayer



As in the previous scheme, the beneficiary contracts for services and/or construction and receives VAT invoices. The beneficiary pays them, therefore incurring VAT. At the same time, the beneficiary is able to recover VAT, either by deducting against VAT on revenues, or by petitioning the fiscal authorities to return VAT paid.

The application of one of the two case-scenarios will basically depend on (i) the VAT status of the beneficiary in the light of the national VAT regulations and (ii) the character of operations performed by the beneficiary.

With respect to (i) above, in some countries some kinds of public entities may not be regarded as VAT taxpayers and thus are unable to recover VAT. With respect to (ii) above, VAT is in principle recoverable only when linked with taxable activities. Therefore, in case the beneficiary does not perform VAT-taxable activities it is possible that he will not be able to recover VAT paid on purchases made (even if he holds the status of a VAT taxpayer under local regulations).

It is worth noting that user charges are not the only kind of consideration possible for taxable transactions in a PPP. In particular availability payments can be and are taxed with VAT in existing PPP schemes.

As a conclusion, the VAT situation will mainly depend on country and project specifics.

10. Reporting and audit arrangements

The reporting arrangements are the responsibility of the Managing Authority as well as of the Certifying Authority and the Audit Authority defined in section 1.1.

There is no specific impact or constraint on reporting obligations due to the blending other than those usually deriving from EU regulations. The Regulations clearly specify that when EU funds are used all the audit and reporting data have to be gathered by the CA and AA and then submitted to the relevant authorities, with no reference to the specificity of the project financial or legal scheme³⁷.

Two levels of audit and reporting exist: “level 1” refers to the project level and “level 2” refers to audit and reporting in terms of operational programmes. Within the scope of our report, we focus on level 1 which deals with day-to-day filing of information by the project manager.

³⁷ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 58-62

The project manager is the connecting chain between the Managing Authority and the project partners. The project manager must have a thorough overview of the project which means he has to receive all the relevant project progress information from project partners (the private and public entities).

The project manager periodically reports progress reports to the Programme Secretariat, with the obligation to keep all files and relevant documents regarding the project for three years after the final payment is made by the EC.

The following information has to be recorded:

- Contracts and correspondence, including all relevant information on how the public procurement procedures have been followed.
- Information with respect to physical progress of activities within the project: activities that have been finished, the rescheduled activities, the problems and solutions encountered during the execution of the project, etc.
- A Financial Statement informing on financial progress must include the approved budget estimate, expenditure invoices, signed financial agreements, evidence of payments made and documents related to the co-financing of the project.

The following reports have to be provided based on the information above-mentioned:

- Progress reports have to be submitted by the project manager to the Programme Secretariat, usually two or three times a year.
- End or final report to be accompanied by a Statement of Expenditure and auditor's statement. When the Final report is submitted and a complete check of eligibility of costs has been made by the relevant authorities (see our check list on eligible expenditure), the total amount of the EU grant due will be paid to the final beneficiary (which is the public entity in the DBO contract).

It is important to note that whatever the PPP model is used, the beneficiaries of the EU grant never receive payments directly from the Commission. They deal with the MA (through the Programme Secretariat) and the Certifying Authority. The CA is the one who pays the final beneficiary, including the advance and interim payments once the requests are reviewed by the Programme Secretariat.

Based on the above, the following check-list illustrates the necessary steps in order to mobilise an EU payment once the project is approved. It can be viewed as an aide-mémoire for the project manager and is applicable to all projects which seek to mobilise EU funds, whether PPP or not.

Table 3: Check list of the necessary steps to mobilise an EU payment once the project is approved

Stakeholder	Tasks	Output
European Commission	EC has approved the project	Formal letter of approval
Project Manager	Gathers all contracts (including the formal letter of approval) and relevant correspondence	Include the information in the progress report
Project Manager	Prepares the financial statement by gathering all financial information to date (notably expenditure invoices)	Includes the financial statement in the progress report
Project Manager	Prepares all other relevant information on the progress of activities	Progress report
Project Manager	Finalizes the progress report	Submits to an independent auditor
Independent Auditor	Checks the progress report	Approves or not the progress report
Programme Secretariat	If the document is approved, it is submitted to the CA	Submission to the CA
Certifying Authority	Performs the final check and certification of the progress report	Final check
Certifying Authority	Pays the interim or advance payment to the beneficiary	Payment to the beneficiary

We note no difference in reporting obligations between the four models, except for the Grant Co-Financing of availability model as it will be described further on.

Regarding the audit arrangements, as mentioned in the introduction, the Audit Authority has an independent function from the CA and the MA. It conducts its examination according to internationally accepted auditing standards and according to the duties set out in the EU regulations. On a project basis, the audits are to be carried out each twelve months period from July 1 2008 to 31 December 2015³⁸.

Both in terms of audit and reporting, there are no specific legal obligations after 2017 deriving from Structural Funds regulations. However, in any case, the Financing Regulation on the General Budget of the European Communities is applicable. It specifies that any grant decision “must expressly provide for the Commission and the Court of Auditors to have the power of audit, on the basis of documents and on the spot, over all contractors and subcontractors who have received Community funds” (Article 170).

All audit and reporting activities carried out after 2017 should conform with EC guidelines on closure of interventions.

The following table summarises the main elements resulting from the general analysis. It also indicates those criteria for which the general analysis is sufficient because it applies to all models, and those for which a specific analysis is detailed for specific models. When both boxes are ticked, it means the general analysis applies in any case, but some specific elements should be taken into account when selecting the model.

³⁸ Council Regulation (EC) No 1083/2006 of 11 July 2006, Article 62.1

Table 4: Main elements resulting from the general analysis of key features

	Main elements	Applicable to all PPP models (see 2.2)	Analysed model by model (see 2.3)
Role of the key stakeholders	They will be distinguished in grant terms and in PPP terms. The roles and responsibilities will be specific to each model		✓
Financing scheme	Determining what the financial resources are used for and when will be specific to each model		✓
Eligible beneficiaries	The public entity is always the beneficiary. An exception could be envisaged in the last model		✓
Eligible expenditure	The main distinction criteria is the presence of revenue in the project: if there is none, the co-financing rate method is used; if there is revenue, the funding gap method is used	✓	
Asset ownership	No direct relation with blending – will mostly depend on the contractual agreement	✓	✓
Tender criteria & procurement procedure	The optimal tender criterion should be based on the NPV of capex and opex for all models. The choice of procurement procedure might depend on the model	✓	✓
Timing of the PPP/grant process	Two possible scenarios: submission of grant application before or after commercial close. Some elements are specific to the models.	✓	✓
Risk allocation	The main distinction between the models is based on the degree of risk sharing.		✓
Tax issues	They concern the eligibility of VAT as a cost. Two scenarios are possible depending on whether or not the beneficiary may recover VAT or not.	✓	
Reporting & audit	They derive from Structural Funds regulations and are the same for any model	✓	

2.3 Analysis of Specific Models for PPP-grant blending

The four models range from the lower risk sharing to higher risk sharing between the public and the private partners.

We analyse hereafter the ten key features which were covered in generic terms under section 2.2 in a specific way as they impact each specific model. Depending on the model, in some key features there might not be specific impacts differing from those presented in section 2.2, in which case there will not be a dedicated paragraph to that key feature. When this is the case, the general analysis of the key issue in question applies. The specificity of the last model we present led to the introduction of an additional key feature which is the escrow account mechanism.

Eventually, we present case examples of past projects carried out under a PPP scheme with EU co-financing. All models have been tested in the field, mainly during the 2000-2006 programming period or under ISPA, except the last model implying an escrow account.

2.3.1 Private Operation and Maintenance (PPP1)

This model is based on two contracts:

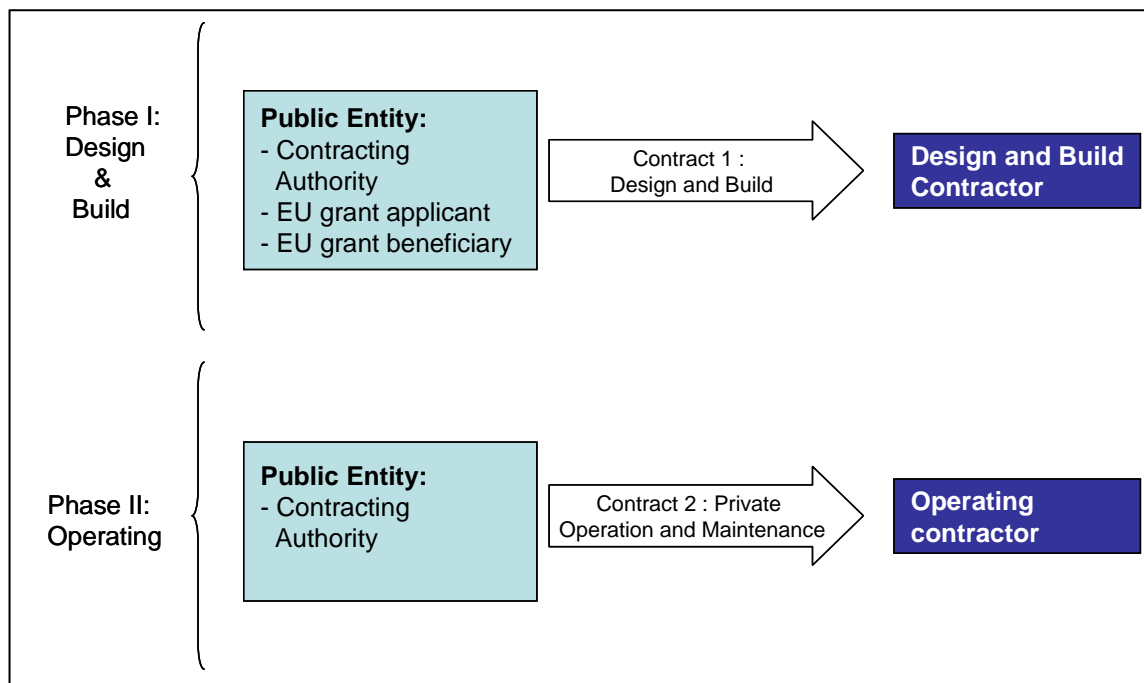
- Contract 1 for the designing and the building of the asset;
- Contract 2 for the operating and maintenance of the asset.

The object of the first contract is exclusively the construction of the infrastructure by the design and build contractor. Once the construction is completed, a second contract is signed either with the same private partner or with a different one. The object of the second contract is operation and maintenance of the infrastructure by the operating contractor.

Role of the key stakeholders in PPP and grant terms

For clarity purposes, we will use the following type of graph (see below) in all the models. It allows summarising the main roles of the stakeholders by indicating which one has which responsibility and which contractual relationships exist between them.

Figure 5: Role of the key stakeholders in PPP and grant terms



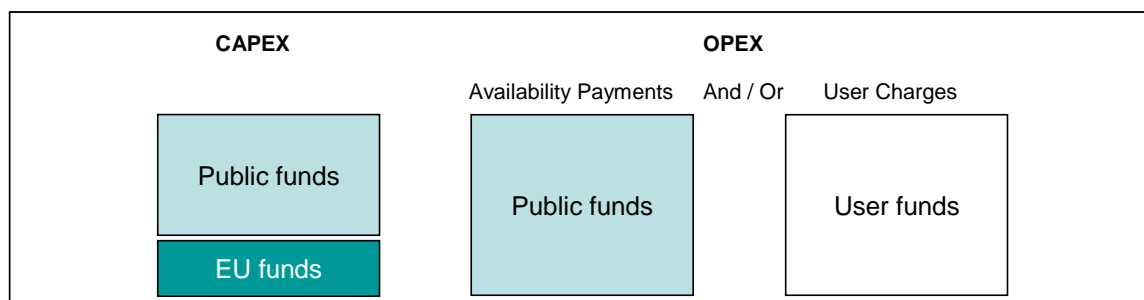
In PPP terms, phase 1 (Design and Build) and phase 2 (Operate and Maintain) are clearly separate. The public entity acts as a Contracting authority and signs two contracts either with the same private partner or with two distinct partners. The public entity is most likely to be the same in both contracts.

In grant terms, the public entity is in charge of preparing and submitting the EU grant application but only during the first phase (as we will see in the paragraph dedicated to the timing of PPP and grant processes).

Financing scheme

The graph below illustrates the financing scheme of the model:

Figure 6: Financing scheme of the Private Operation and Maintenance Model



In the first phase (contract 1 on Design and Build), capex is co-financed by public funds and EU funds. In this graph, the distribution between EU and public funds is indicative: it will depend on the financial plan of the project and specifically on the applicable co-financing rate or funding-gap rate in case of revenue-generating projects, as explained in section 2.2 (paragraph on eligible expenditure).

In the second phase (contract 2 on Operation and Maintenance), opex is financed through:

- availability payments from public funds, and/or
- user charges if any.

Asset ownership

The private partner does not finance the investment. Moreover, we may have two different private entities for each phase (Design and Build – Operate and Maintenance). Therefore, no private entity can have ownership right over the infrastructure.

From the beginning of the construction until the end of operation and maintenance phase, the public entity is and remains the asset owner. There is no ownership transfer.

Tender criteria and procurement procedure suitable for the PPP:

The general analysis applies to this model as far as the Design and Build contract is concerned, since it is the one to be co-financed. However, the tender criteria for the award of the operation and maintenance contract are not impacted by the fact that the project was grant-funded, except that the assets need to be maintained in a way consistent with the forecasts in the grant application.

According to our general analysis on the choice of the procurement procedure, there is no legal obstacle in using any of the procedures listed in the procurement Directive. The choice is a double opportunity choice, given the necessity of two tender processes for two separate contracts.

The restricted procedure is the most likely to be used in both contracts for two reasons:

- the degree of involvement of the private entity(ies) is not as high as in the other models and consequently does not specifically require the use of competitive dialogue, which is essentially designed for complex projects;

- the negotiated procedure is rather an exception than a standard procedure, designed for specific needs or unpredicted factors³⁹.

Timing of the PPP relating to the grant process

The contracting authority should carefully consider the second tender process timing. If the two tender processes are disconnected there will be a delay between the end of the construction phase and the beginning of the operation phase. The consequence will be higher costs and inefficiency.

Risk allocation

In this table we present an estimation of the risk distribution between the public and the private sector. These risks are typically PPP-related and do not necessarily depend on the EU funding. As for the specific EU funding-related risks they have been described in section 2.2.

Table 5: Estimation of the risk distribution between the public and the private sector

	Technology Risk	Residual Value Risk	Planning Risk	Operational Risk	Maintenance Risk	Legislative & Policy Risk	Industrial Relation Risk	Force Majeure Risk	Financial Risk	Environmental Risk	Design Risk	Demand Risk	Construction Risk	Commissioning Risk	Availability Risk
Public		x		x		x		x	x						
Private			x		x		x			x	x	x	x	x	x
Shared															

The risk transfer from the public sector to the private sector is low (compared to the following models), especially because of the financial risk which remains borne by the public entity. The risk allocation is analysed and quantified in section 3 on the Public Sector Comparator.

³⁹ Articles 30 & 31 of the Directive 2004/18/EC

Conclusion

The blending with EU grants does not represent an additional obstacle compared to a classical public investment. It can be managed through effective communication between the Commission, the Managing Authority and the Contracting Authority. The main issue in this model is the disconnect between the two tenders, which could result in a delay between the completion of construction and the start of operations – this could impact the revenues of the project forecast in the CBA if not handled carefully, impacting financial sustainability and economic benefits of the project. The more the start of operations is delayed, the greater the impact due to discounting.

However, under this model the benefits of the PPP approach are not completely captured: the risk transfer from the public to the private sector is low compared to other models and the leverage in terms of private capital and skills not optimised.

We can summarise the breakdown in responsibilities between public and private entity: as follows:

Table 6: Responsibilities between public and private sector						
Design Build contract	Investment	Design	Build	Operating & Maintenance	Financial responsibility	Facility ownership
	Public	Private		Private	Public	Public

This is an overview of the advantages and potential constraints of the private operation and maintenance model:

Table 7: Potential constrains and advantages of the Private Operation and Maintenance Model	
Advantages	<ul style="list-style-type: none"> ➤ The “design-build” phase may benefit from a high co-financing rate; ➤ Good feasibility and costs minimisation for the service operator; ➤ Blending of the grant and PPP approach is straight forward.
Potential constraints	<ul style="list-style-type: none"> ➤ Potential additional costs due to separate tender processes ; ➤ Necessity to manage time carefully – especially risk of disconnect between the two contracts resulting in delayed operational phase; ➤ Limited possibilities of shifting risks to private entity.

Local governments use this type of straight forward approach particularly in waste and water sectors in order to provide:

- waste treatment services - for instance in Romania waste projects where EU grants under both ISPA and Cohesion Funds have been awarded to the public entity for contract 1, prior to contracting under PPP for operation and maintenance services;
- Water supply and sewage disposal services – for instance in Poland in Gdnask where the same type of project was successfully completed already back in 1992.

2.3.2 Design Build Operate (DBO) (PPP2)

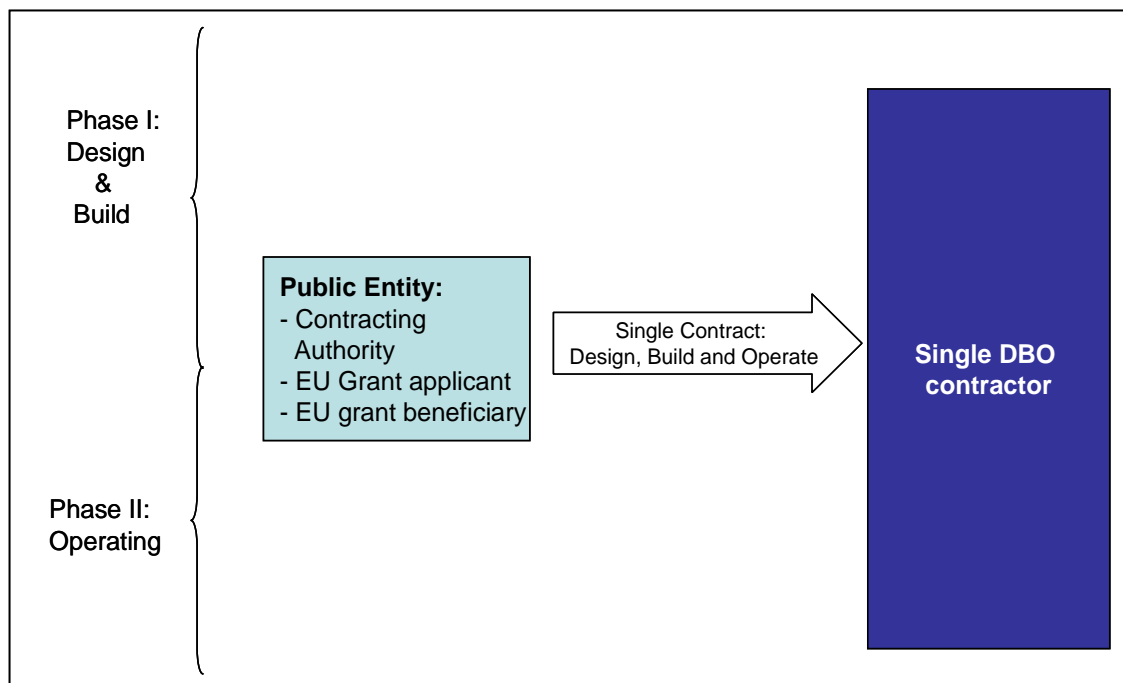
This model consists of a single contract by which the private entity is responsible for Design, Build and Operate functions. It is the most frequently used model to-date.

The DBO is based on the principle “Operate what you Design” reflecting the fact there is only one private entity and that the single contract is an incentive to achieve the best possible Design and Build in order to Operate it successfully.

Role of the key stakeholders in PPP and grant terms

The graph below illustrates the roles for each stakeholder:

Figure 7: Role of the key stakeholders in DBO Model



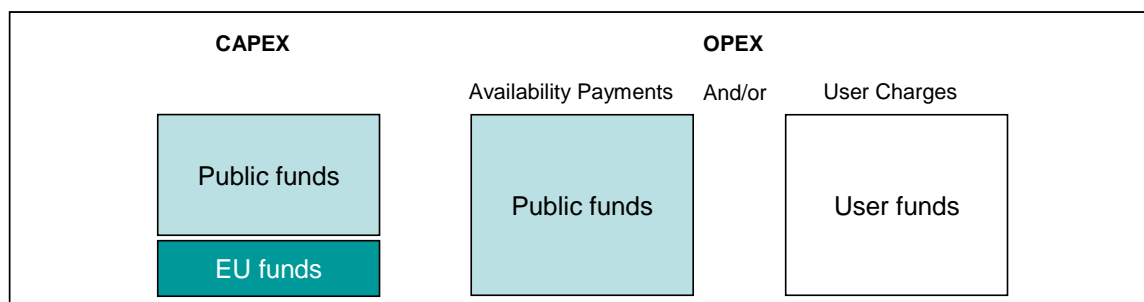
In PPP terms, the contracting authority awards only one contractor with Design and build and with Operate. The contractual relationship is based on a single contract running through both phases.

In grant terms, the public entity prepares and submits the EU grant application to the Commission. We will examine the timing of this application in relation with the tender process in the paragraph dedicated to the timing of PPP and grant processes.

Financing scheme

The graph below summarises the typical financing scheme of a DBO:

Figure 8: Financing scheme in DBO



Asset ownership

The public entity owns the infrastructure and there is no ownership transfer, neither during nor at the end of the DBO contract. As an example, the Dublin Region Waste Water Scheme (Treatment plant) in Ireland, it was agreed the public authority remained the owner of the asset.

Tender criteria and procurement procedure suitable for the PPP

The tender process implies less interface problems than the previous model since a single contract commits the private entity to the design, construction and maintenance. The principle “operate what you design” applies to this contract.

At the present time, DBO contracts tend to be based on an amended version of standard contracts covering the design and build elements of a DBO contract. Practitioners observe a lack of standardised document which addresses the risks and responsibilities associated with the long term operation phase of such contract. Therefore, procurement procedures should be adjusted to cover the operation element of DBO, especially with respect to the risks and responsibilities of the parties.

As mentioned in section 2.1, any procurement procedure can be used. The choice is a matter of opportunity and will largely depend on the project:

- If the project is not technically and financially complex, the standard restricted procedure will be sufficient to ensure good tender quality and efficient choice of the private partner;
- If the project is technically and financially complex, the use of competitive dialogue will allow maximum leverage on private technical expertise⁴⁰.

Timing of the PPP relating to the grant process

The timing analysis carried out in section 2.2 fully applies here, the DBO not being different from a typical traditional project from that point of view. If the competitive dialogue is chosen, the overall duration of the procedure will be extended by the time necessary to carry out the dialogue with the short listed bidders.

Risk allocation

Compared with PPP1, operational risk is fully shifted to the private sector, which is an important feature and can have impact on the way the project is designed. Compared to the following models, a DBO does not involve partial or full financial risk borne by

⁴⁰ Directive 2004/18/EC recital 31

the private sector and therefore does not imply additional scrutiny from the from the project financiers.

Table 8: Risk allocation in DBO Model

	Technology Risk																		
	Residual Value Risk																		
	Planning Risk																		
	Operational Risk																		
	Maintenance Risk																		
	Legislative & Policy Risk																		
	Industrial Relation Risk																		
	Force Majeure Risk																		
	Financial Risk																		
	Environmental Risk																		
	Design Risk																		
	Demand Risk																		
	Construction Risk																		
	Commissioning Risk																		
	Availability Risk																		
Public																			
Private																			
Shared																			

Conclusion

The main impact of EU grants, as in all models, is related to the particular attention to be paid to time management in terms of tender process and grant application. The moment of submission of the grant application has to be carefully chosen (either when the tender dossier is published or once the PPP contract is awarded, in both the restricted procedure and competitive dialogue) in close consultation with the Commission.

This table displays the breakdown of responsibilities between the public and the private sectors:

Table 9: Responsibilities between public and private sector

Design Build Operate Contract	Investment	Design	Build	Operating and maintenance	Financial responsibility	Facility ownership
	Public	Private			Public	Public

The table below summarises the advantages and potential constraints

Table 10: Potential constrains and advantages of the DBO Model	
Advantages	<ul style="list-style-type: none"> ➤ The grant-related issues concern mainly time management; ➤ High accountability of the private sector and strong quality incentive under the “Operate what you Design principle”
Potential constraints	<ul style="list-style-type: none"> ➤ As for all projects, the timing of both the tender process and the request for EU grants must be secured and properly managed. ➤ Careful and transparent separation of capex and opex costs by bidders in the tender stage to avoid the EU grant funding opex

2.3.3 Parallel Co-Finance of Capital Expenditure (PPP 3)

The parallel co-finance of capex is a model used for the financing of two complementary infrastructures. For example it is typically the construction of a wastewater plant on the one hand and, on the other hand, the construction of a network of pipes around it. That is why the model is based on two separate contracts:

- **Contract 1** is set up with a private entity for designing and building the Infrastructure 1, without any agreement on the operation and maintenance.
- **Contract 2** has two components:
 - Designing, building, and financing of Infrastructure 2 by the private partner entity;
 - Delivering of the service (operations and maintenance) for the whole infrastructure (Infrastructures 1 and 2 combined).

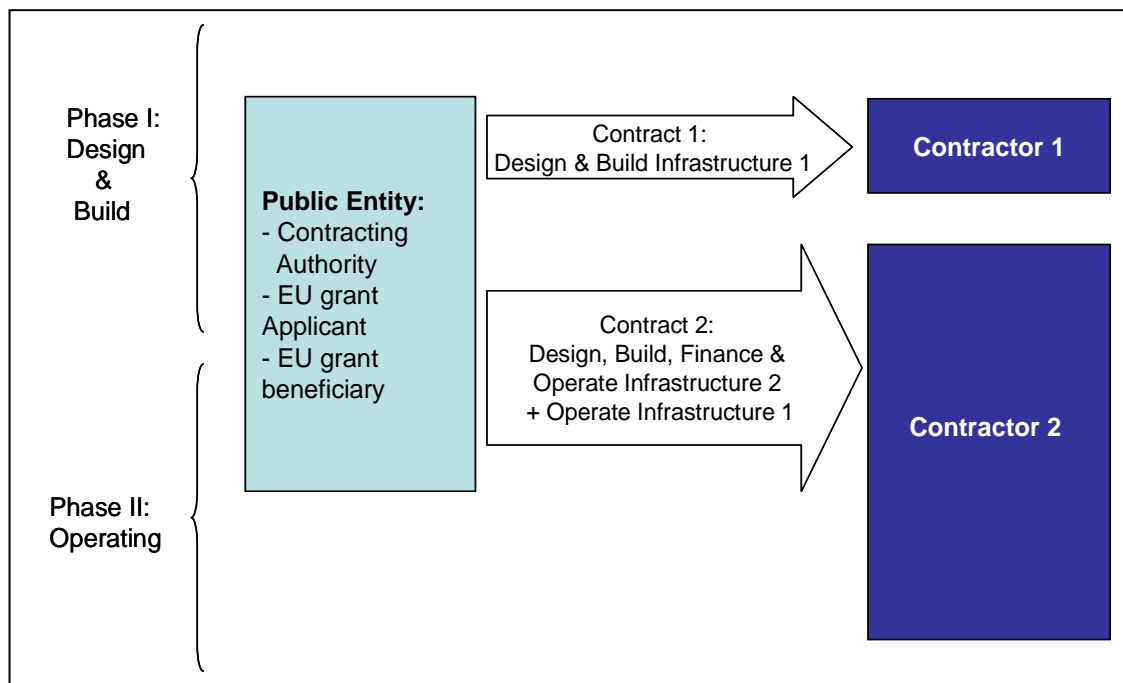
The model of Parallel Co-financing of capex is a coupling of a Design and Build Contract (contract 1) with a DBFO contract (contract 2). The DBFO model is explained further on in the report (described as the last model in section 2.3.4)

The particularity of this project structure in comparison with a classical DBFO consists in the split between Infrastructure 1 co-financed by EU grant under a Design and Build contract and Infrastructure 2 as a typical DBFO with no EU co-financing.

Role of the key stakeholders in PPP and grant terms

In the following graph we summarise the roles of the stakeholders for both infrastructures.

Figure 9: Role of the key stakeholders in PPP and grants terms

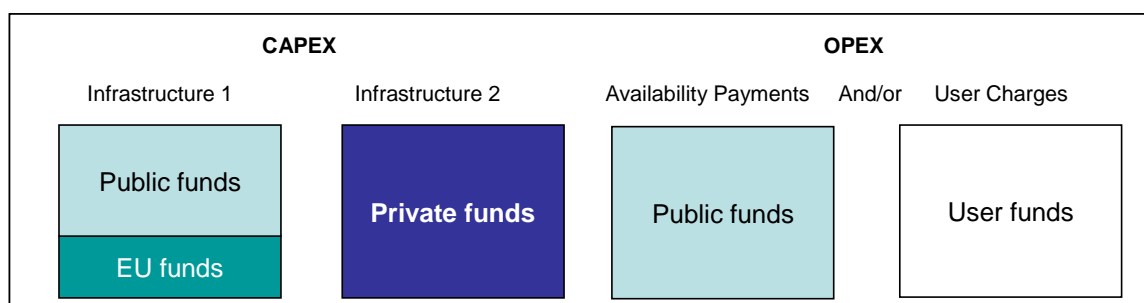


The first contract assigns to the private entity the responsibility of Design and Build contractor of Infrastructure 1 while the second contract assigns to the private entity the responsibility of Design, Build, Finance and Operate Infrastructure 2 as well as operating Infrastructure 1. The public entity will also act as the grant applicant but only for the second infrastructure.

Financing Scheme

The scheme is more complicated than in previous models, as the graph below displays it:

Figure 10: Financing scheme in Parallel Co-Finance of Capital Expenditure Model



The Design and Build of Infrastructure 1 is co-financed by public funds and EU funds. Private sector finances infrastructure 2 and is paid gradually for its investment over the whole life of the project (period of time specified in the contract) by receiving revenues for the service provided to the public entity, like in a typical DBFO (see section 2.3.4). Those revenues can be either availability payments financed by public funds, and/or user charges if any.

Eligible expenditure for grant co-financing

The rules explained in section 1.1 regarding the co-finance rate and the funding-gap method apply in this model as well. The specificity comes from the existence of two separate infrastructures although both are operated by the same contractor. A question could arise whether both contracts are eligible, notably in order to calculate the funding gap using costs and revenues of both infrastructures. Although there is no definitive rule on the question, it seems unlikely for practical reasons that the second contract could be eligible: the tender for second infrastructure occurs further in time, and it might still present significant uncertainty in terms of prices at a point where the grant for infrastructure 1 has already been awarded (or at least application submitted), making it difficult to estimate the costs and revenues of Infrastructure 2. Moreover, since infrastructure 1 is a complementary infrastructure (in our example a network of pipelines supporting the water waste plant), including costs and revenues from infrastructure 2 would imply a much higher contribution from the EU grant.

Asset ownership

In principle, the owner of both infrastructures is the public entity and there is no ownership transfer at the end of the contracts. It could be envisaged that contractor 2 owns either Infrastructure 2 or more likely the whole infrastructure (because it is operating the whole) but under a BOT (Build-Operate-Transfer) transfers it to the public sector once operation phase is over. Such arrangement has been made in the past in Slovenia, for the Maribor Wastewater Treatment Plant where the ownership will be reverted to the municipality after 22 years (end of contract).

Tender criteria and choice of procurement procedure suitable for the PPP

The tender criteria for awarding contract 1 should take into account detailed specifications allowing to operate infrastructure 1 at defined standards. This should ensure that those specifications are fully reflected in contract 2.

The tender process for contract 1 will contain only specifications for designing and building of Infrastructure 1, while the tender process for contract 2 will contain specifications for designing, building and financing Infrastructure 2, coupled with specifications for operating both Infrastructure 1 and Infrastructure 2. Therefore, in

accordance with our analysis of section 2.2 and of the two previous models, the choice of the procurement procedure should be the following:

- Restricted procedure for Contract 1 (Design and Build)
- Competitive dialogue for the more complex Contract 2 (DBFO)

Timing of the PPP relating to the grant process

As in the first model, the contracting authority should carefully consider the second tender process timing: a delay between the end of the construction phase and the beginning of the operation phase, mainly due to unconnected tender processes, might induce inefficiencies. From past experience, the main timing risk is that if construction of the EU funded part is delayed, but would provide revenues to the DBFO, there may be a major risk to the public sector which would have to guarantee the onset of revenue. This was a major issue in the above mentioned Maribor project.

Two tender processes will be launched at the same time:

- the first one corresponds to a Design and Build contract and should be handled properly through a typical restricted procedure.
- the second one corresponds to a DBFO contract for the complexity of which the competitive dialogue procedure is the best suited.

The analysis of timing in section 2.2 applies for contract 1, since there is no EU funding in the DBFO.

Risk allocation

The difference with the two previous models lies in the fact that there are two contracts of different nature. The sharing of risks between public and private entities is distinct in the contract 1 2.

Contract 1 corresponds to the first model we examined and therefore the risk allocation table of that model applies.

Contract 2 is actually a DBFO model for which the risk allocation table is presented in the next section 2.3.4 on the DBFO model. The risk transfer to the private sector is higher in this case.

Conclusion:

There is no major obstacle to blending EU grants with such a PPP model. However, due to the complexity of two distinct contracts of different nature and of the two tender processes to be launched at the same time, this model is more difficult to deal with. The main factor of success of using this model lies in the proper managing of time and organisation of both tender processes.

The breakdown of responsibilities is more complex than in the previous models:

Table 11: Responsibilities between public and private sector					
Parallel Co-finance of Capex	Design	Build	Operating and maintenance	Financial responsibility	Facility ownership
	Private (I1+I2)			Public (I 1) Private (I2)	Public

The table below summarises the main advantages and the potential constraints of the model:

Table 12: Potential constraints and advantages of the Parallel Co-Finance of Capital Expenditure Model	
Advantages	<ul style="list-style-type: none"> ➤ Separate construction contracts make grant structuring easier since it only finances capex 1 (see financing scheme graph); ➤ The risk transfer to the private sector is high, inter alia due to the DBFO contract
Potential constraints	<ul style="list-style-type: none"> ➤ Time management and handling both tender processes at the same time ➤ Overall complexity of the project due to two contracts and two infrastructures

2.3.4 Design, Build, Finance and Operate (DBFO) with EU funds co-financing capex

The DBFO model consists of a single contract in which the responsibilities for Designing, Building, Financing and Operating are bundled together and transferred to the private partner. The key element of a DBFO compared to the other models is the fact that the private entity is in charge of financing. The DBFO is usually intended for more complex projects and its objective is to maximise the leverage on private capital.

As presented in section 2.2.1, two different schemes are to be considered under a DBFO model. The first possibility is a DBFO with user charges where the capex is co-financed after completion of construction by the EU grant. The second possibility is a DBFO with availability payments where the EU grant co-finances the capex portion of availability payments over the whole life of the project.

2.3.4.1 DBFO with user charges – EU grant co-finances capex after construction completion (PPP 4)

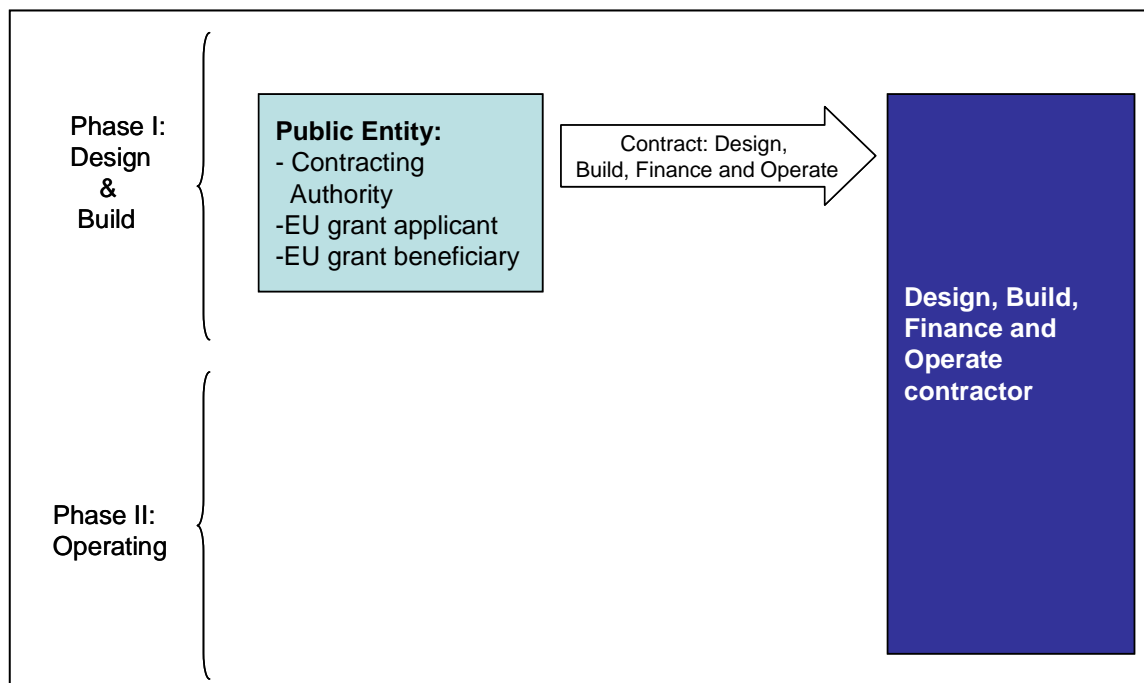
In this model, the EU grant co-finances capex after completion of construction. This is consistent with EU regulations given that at the time of construction completion, the beneficiary will be able to present the Commission with invoices of incurred expenses, thus complying with art. 56 of GR stating the expenditure has to be actually paid. And in this case it is reasonable to consider that the funds will be disbursed within the time-limit of 31 December 2015.

Since we are in a DBFO contract where the private entity finances the investment, the co-financing is broken down between EU funds, private capital and a public contribution. The level of EU contribution has to consider the private sector's opportunity cost of the investment but has to remain reasonably low in order to respect the principle of risks and responsibilities transfer to the private sector, which is at the foundation of the DBFO model and which justifies the remuneration of the private risk. In other words, the level of grant has to remain sufficiently low not to compromise the "no service no payment" principle.

Role of the key stakeholders in PPP and grant terms

The graph below summarises the role of the key stakeholders during the two phases of the project:

Figure 11: Role of the key stakeholders in PPP and grant terms



The contractual relationship between the public and the private partner covers both phase 1 and 2 through a single contract.

Financing Scheme

The financing scheme is illustrated in the following graph.

Figure 12: Financing scheme in the DBFO with EU funds co-financing capex Model



As shown in the graph, for illustration purposes, we consider a DBFO with user charges and no availability payments. When there is user charge funding only and no availability payment a public national contribution to the capex is needed. If there is availability payments mixed with user charges, the public contribution will no longer be needed in capex and will be used for availability payments. This is consistent with the

funding gap methodology described in section 2.2. Private capital finances part of the investment; the EU grant co-finances only a percentage of the funding gap and therefore the public contribution is needed to co-finance the remaining percentage of the funding gap.

Eligible Expenditure

- Firstly, the EU grants being used for financing capex, they will be disbursed within the limit of 31 December 2015. One other specific issue needs to be underlined. The fact that interests on debt are not eligible under EU regulations means the private sector will be raising funds at a higher cost. Since interest on debt cannot be co-financed by the EU grant, the public contribution will have to compensate for that higher cost. However, this compensation can be reduced by increasing the involvement of IFIs which offer longer maturities and reduced rates. Thus public authorities can be able to offer the private sector a more attractive transaction.

Since we are dealing with a revenue-generating project, the funding gap method is to be applied.

Working example

Capex = 100

Estimated revenue (net present value) = 120

Opex = 40

Consequently funding gap = $140 - 120 = 20$

EU grant co-finances for instance 65% of the funding gap: $0.65 \times 20 = 13$

$20 - 13 = 7$, which is the amount to be financed by public contribution either through availability payments or through financing capex when there is no availability payments

Moreover, the amount of EU-co-financing should be defined and anticipated with precision in order to avoid the risk of distortion of the “no service no payment” principle.

One specific point has to be raised on this matter since the private co-finances capex with EU grant. It is necessary to underline that in order to avoid any market distortion the amount of EU contribution to be matched with the private financing needs to be transparent for all the stakeholders involved. This implies that this approach can be used only if the EU contribution to the investment is sufficient for attracting and leveraging on private funding. However, in order to avoid the distortion of the “no service no payment principle” which is the risk of a too high amount of EU co-financing,

the EU grant funding should not be too high in this model as it might otherwise undermine this principle

Asset ownership

It can be contractually set out that the private entity owns the infrastructure during the contract but that it is transferred to the public entity at the end of the contract. The residual value of the asset is then to fix between the public and the private entity.

If the choice of setting up an SPV has been made, then the SPV owns the asset. This means the ownership is shared by the shareholders of the SPV (public and private shareholders or only private, depending on the structuring of the SPV).

Tender criteria and procurement procedure suitable for the PPP

The best suitable procurement procedure is definitely the competitive dialogue, given the private sector is financing and given the complexity of the project.

Because the private entity is financing, the procurement procedure is expected to be longer than in the DBO in order to:

- extensively cover the financing element of the contract;
- fully take into account the higher degree of complexity of a DBFO structure, mainly used for complex projects;
- optimise the selection of the private partner.

The trade-off is that the competitive dialogue takes longer than the other procedures but optimises the choice of the private partner.

Risk allocation

As we can see in the table below, the majority of the risks are borne by the private sector. One of the advantages of the DBFO is a high level of risk transfer from the public to the private sector, with the exception of typical sovereign attributes such as Force Majeure or legislative and policy risk.

One risk is shared by both private and public sector: the residual value risk, as mentioned in the paragraph on the asset ownership.

Table 13: Risk allocation in the DBFO with EU funds co-financing capex Model

	Technology Risk													
	Residual Value Risk													
	Planning Risk													
	Operational Risk													
	Maintenance Risk													
	Legislative & Policy Risk								X					
	Industrial Relation Risk									X				
	Force Majeure Risk										X			
	Financial Risk											X		
	Environmental Risk												X	
	Design Risk													X
	Demand Risk													X
	Construction Risk													X
	Commissioning Risk													X
	Availability Risk													X
Public										X				
Private		X	X	X	X	X	X	X	X		X	X	X	X
Shared													X	

Conclusion

This type of DBFO, where EU grants are used to co-finance capex, allows the public sector to leverage private capital in order to finance the investment. It also allows to use the EU grants during construction period in compliance with the December 2015 limit. It also encompasses some constraints, linked risks hanging on the “no service no payment principle” and with the choice of the beneficiary which will influence the timing management of the project.

This table can be used as a reminder of the main characteristics of this model:

Table 14: Responsibilities between public and private sector

Design Build Finance Operate Contract	Investment	Design	Build	Operating and maintenance	Financial responsibility	Facility ownership
	Private	Private			Private	Private with transfer to public at the end of contract

Advantages / Potential constraints:

Table 15: Potential constrains and advantages of the DBFO with EU funds co-financing capex	
Advantages	<p>Optimised leveraging on private capital and private innovation, well suited for complex infrastructure projects;</p> <p>High risk transfer to the private entity;</p> <p>No issues of financing the availability payments post-2015;</p> <p>Best suited for revenue-generating projects.</p>
Potential constraints	<p>Time management of PPP process and EU grant application;</p> <p>Risk of distortion of the “no service no payment principle”</p>

2.3.4.2 DBFO with EU funds co-financing the capex part of availability payments (PPP 5)

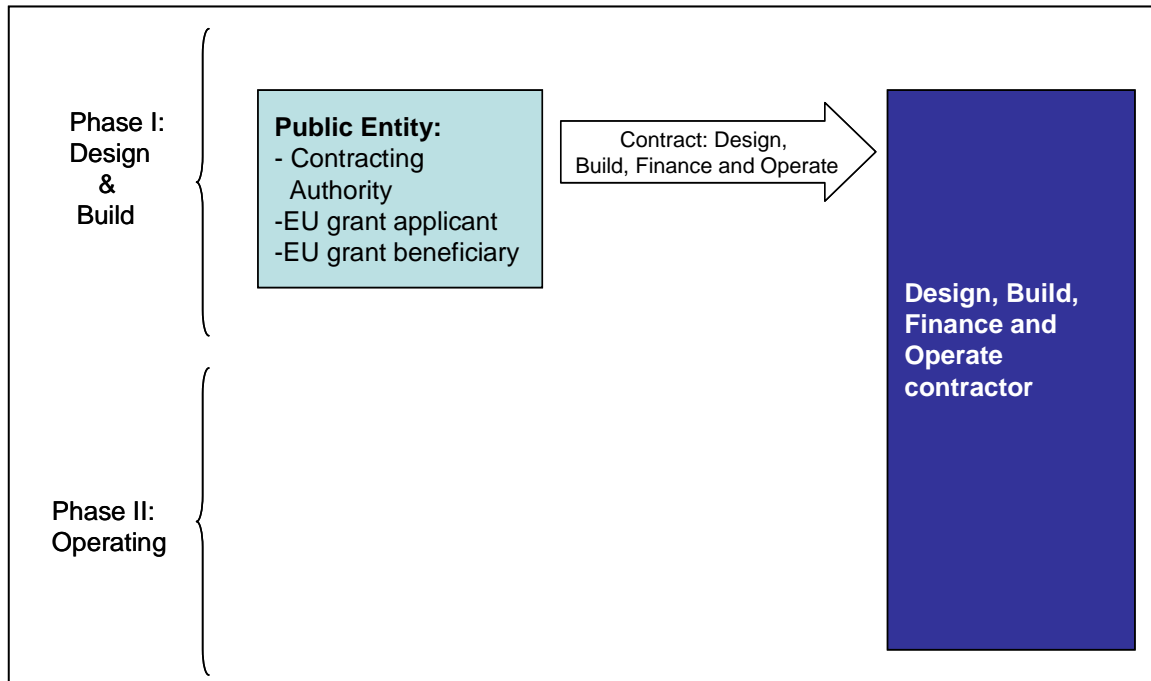
This is the availability scheme in a DBFO. The private contractor finances the investment and is paid over the whole life cycle of the project. The EU grants are used for co-financing availability payments (but only the capex part) with public funds.

The particularity of this structure is the raising of EU grants during the operating phase and notably after the 2015 time-limit, while previous structures consider the raising of EU funds at the beginning of the project (Design and Build). In order to tackle this specific issue, we will analyse an additional mechanism in the financing scheme: the escrow account. It is noted that this remains a hypothetical model for the moment, as it is unclear whether such mechanism is permitted by the EC regulations – however, it is included here for comparative and discussion purposes.

Role of the key stakeholders in PPP and grant terms

The graph below summarises the roles of the key stake holders:

Figure 13: Role of the key stakeholders in PPP and grant terms

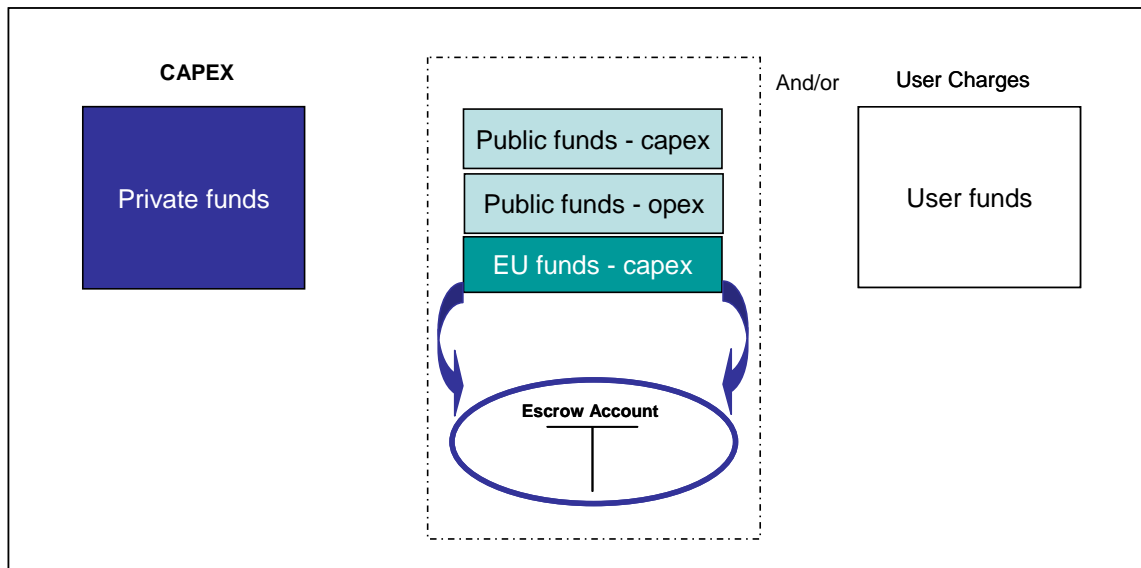


The role of the key stakeholders is almost identical to the previous structure: there is one contract for Design, Build, Finance and Operate between the public entity and the private partner. The contractual relationship thus covers both phase 1 and phase 2.

Financing Scheme

This graph displays the main differences with the previous DBFO structure:

Figure 14: Financing scheme in the DFBO with EU funds co-financing the capex part of availability payments



Capex is financed by private funds as in any DBFO. Public contribution is split between matching funds for EU investment contribution and actual opex funds.

Since the availability payments are ongoing after 2015, the EU funds are channelled through an escrow account. In the following paragraphs we present the main features of an escrow account in the context of blending.

What is the escrow account?

We define the escrow account as a legal arrangement in which an asset (the EU grants in this case) is deposited into safekeeping (e.g., a bank account) under the trust of a neutral third party (escrow agent) pending satisfaction of contractual contingency or condition.

The escrow account is an additional feature used as an instrument allowing to deposit the EU grant on the escrow account (so the EU grant is disbursed) and then use the account to regularly pay the availability to the private sector.

The escrow account cannot be considered as a “financial engineering instrument” defined by the General Regulation⁴¹. Any financial engineering instrument under EU regulations must comprise repayable investments⁴², which is not the case of an

⁴¹ Council Regulation (EC) No 1083/2006, article 44

⁴² Commission Regulation (EC) No 1828/2006 art. 43(2)(i) and COCOF note 08/0002/00 on financial engineering

escrow account. Therefore, the escrow account does not have an institutional basis: it is set up as a purely contractual agreement between the public entity, the private entity and an escrow agent.

Why the escrow account mechanism?

Using the EU grants to finance the availability payments is an issue when it comes to PPP projects which are by definition extending over a long period of time.

The availability payments start from the moment the construction is achieved and the operating starts. They are due until the end of the contract. The applicable principle is the “no service, no payment principle” under which:

- the private partner must deliver construction on time in order to begin receiving the payments;
- availability payments are paid in regular rates during the whole life-cycle of the project.

The escrow mechanism is a potential solution for:

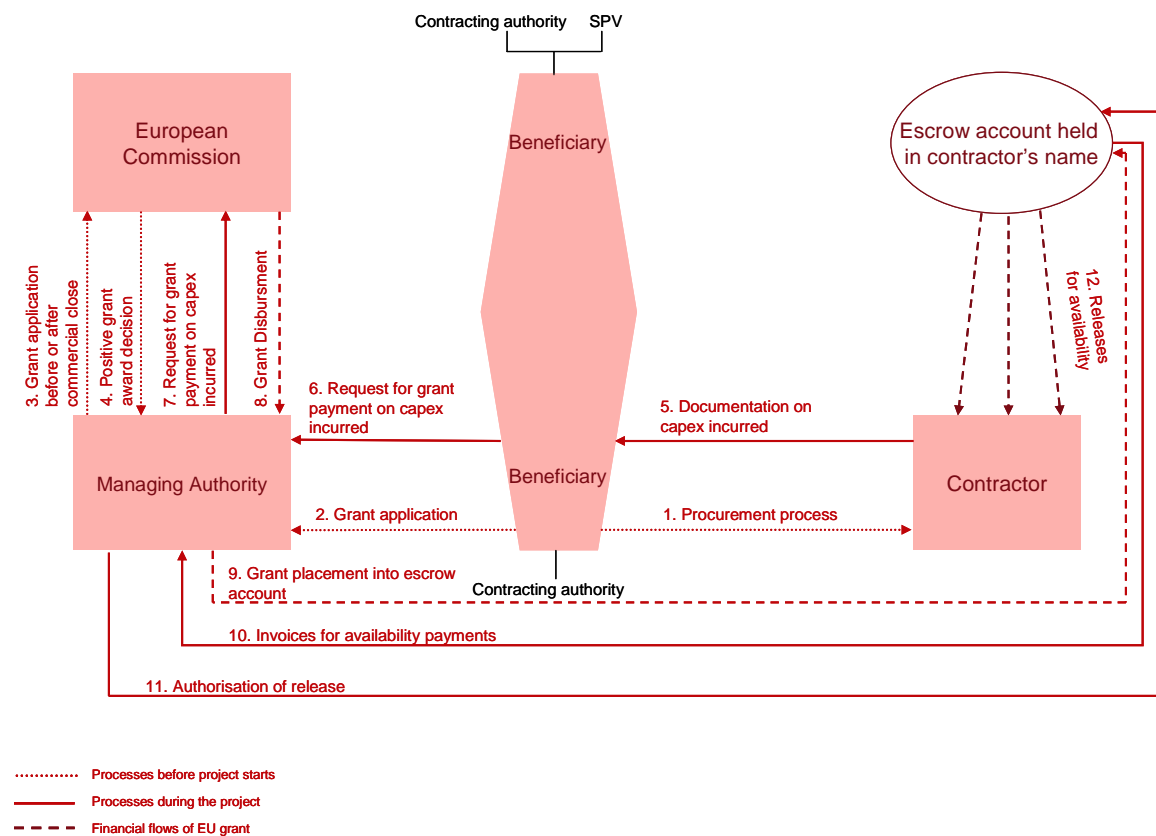
- using the EU funds over a long period of time without being in contradiction with EU regulations;
- ensuring that the “no service, no payment” principle is respected.

The other possible solution for avoiding to disburse EU grants during the whole life-cycle and particularly after 2015 would be to pay the availability payments at an early stage (either before construction is completed or just at the beginning of the operating, for instance) in one or several huge payments. However, this does not appear to be an efficient option because it violates the “no service, no payment” principle: if the availability payments are made before the service is rendered with the expected quality, the private entity has much lower incentive to deliver and operate within the quality standards defined in the contract. The loss of accountability of the private sector could result in poor performance.

How does an escrow account work?

The figure below describes the basic functioning of the escrow account:

Figure 15: Escrow Account Mechanism



The escrow agreement is signed between the three following key stakeholders:

- the public entity;
- the private entity;
- the escrow agent, normally a commercial bank or an IFI

The availability payments start from the moment the construction is terminated and the infrastructure is fully available so that the operating phase can start. These payments are due until the contract expires, unless there is any premature breach of contract. The governing principle is “no service, no payment”, accordingly:

- the private partner must deliver construction on time and in good order to begin receiving the payments;
- availability payments are paid in regular rates during the whole life-cycle of the project, assuming that all the provisions of the awarded contract are fully respected and the infrastructure is always fully and properly available; in other words, the services are rendered according to the standards and timing set in the level of services agreement, awarded as part of the procurement process.

The possibility of making use of EU grants for the capex part of availability payments is fundamentally based on two elements:

- capex invoices: after completion of the construction phase, according to the contractual obligations undertaken, the private contractor must provide invoices, certifying all the expenditure incurred for the investment, to the awarding authority. These invoices are the basis for disbursing the EU contribution to the capex portion of the availability payments. By providing the invoices certifying the incurred capex, the contractor provides full proof that expenditure eligible for co-financing by EU grants has already been executed. As shown in the above graph, the beneficiary is responsible for certifying the invoices are correct and fully correspond to the contract obligations;
- contractual engagement of the public entity for future availability payments, expressly set out in the PPP agreement, and coherent with SF regulation⁴³.

Once the Management Authority has been provided with the two above-mentioned elements, the EU grant part of the availability payment would be disbursed. It should be stressed that according to this mechanism, it is the awarding authority's main responsibility to certify the private sector's correct and legitimate implementation of the contract. The Management Authority will check whether the public sector is properly implementing the contractual and financial scheme agreed upon. By so doing, a proper "checks and balances" mechanism is set in place.

In order to allocate properly the risk on the private sector, it must be stated that, during the operating phase, the funds cannot be withdrawn from the escrow account at the discretion of the contractor. Eventually, they can be subject to the authorisation of the Managing Authority. This will be based on conditions for the release of the escrow payments which have to be defined as precisely as possible before the whole scheme is set up and so as to mirror the specific peculiarities of each project.

In general, the funds are released under the condition that construction is fully and properly delivered and operating services are provided according to required standards, set by the public sector in the procurement phase. In case of poor quality of services provided, the contractor could be denied the capex portion of the availability payments. In other words, the escrow will operate as a guarantee scheme, i.e. payments will be released only if all the conditions for the operational phase of the

⁴³ Article 78 of the SF regulation states that all statements of expenditure shall include the *"total amount of eligible expenditure, in accordance with Article 56, paid by beneficiaries in implementing the operations and the corresponding public contribution paid or due to be paid according to the conditions governing the public contribution"*.

contract are satisfied. This mechanism, therefore, could allow a very high level of quality compliance in terms of services rendered as it may operate as a third independent party in relation to the execution of some critical obligations of the contract, underlying the DBFO scheme.

Furthermore, as compliance with those conditions will be submitted to the Commission -through reporting and monitoring of both the escrow agent and the Managing Authority - it allows identification of best practices and subsequent dissemination of intelligence on the market, whilst, at the same time, provide full protection of SF money in case the contractor is not fully complying with the contractual provisions.

With this approach, the risk transfer is consistent with traditional DBFO practice, providing incentive and leverage on private sector and ensuring construction and availability risks transfer to the private sector, whilst also keeping control on the proper expenditure of SF.

How to deal with private contractor's default?

In Annex 1 we present an indicative list of typical contractual clauses for making availability payments based on our knowledge of PPP practice in UK, which is a starting point.

Who can be the escrow agent?

The choice of the escrow agent will be based on two sets of criteria:

- the legal requirements: who can and who cannot be the escrow agent?
- the opportunity of the choice: who would be the optimal escrow agent?

From a legal point of view, two basic features have to be taken into account:

- The escrow account must be held by a neutral third party, according to the definition we gave above. Therefore, it is excluded that the private entity, the public entity or the Commission could be escrow agents.
- The escrow account is a contractual feature, therefore allowing for any actor to be appointed as the escrow agent, provided it respects the third party neutrality principle. In practice, this means any commercial bank or any financial institution can be the escrow agent.

Eligible beneficiaries

As mentioned before, it is difficult to qualify the private entity as the “initiator” of the project, and a public sector entity would need to be the beneficiary. The grant would be disbursed by the Commission to the Managing Authority which transfers it to the public entity which then places it into the contractor’s escrow account, the fund flow would be simplified with the Managing Authority directly placing the grant into the SPV’s escrow account

Tender criteria and procurement procedure suitable for the PPP

Since the EU grant co-finances the capex part of the availability payments, it should be specified that bidders have to indicate the precise breakdown between capex and opex in their proposals. The Contracting Authority, in any case, has to ensure the capex part is reflected in the contract because it will have to match the invoices that the private partner will send during the whole life of the project.

Given the level of complexity of the contract and above all the high degree of involvement of the private entity, the most suitable procurement process would be the competitive dialogue. It would allow to:

- attract the best competencies available on the market;
- design very precise technical specifications, and
- avoid risk of uncertainty or modification of the tender specifications.

Timing of the PPP relating to the grant process

See section 2.2.

Risk allocation

The risk distribution differs from the previous DBFO scheme where the EU grant was used for financing capex after construction is completed. Indeed, the allocation will not be the same because the “no service no payment” principle is not compromised here.

Reporting and Audit arrangements

In this particular model, the audit and reporting arrangements, besides the general principles described in section 1.1, raise a specific question related to reporting and audit obligations after 2015. This question arises because the EU grants continue to be used after 2015 through the Escrow account mechanism. There is no legal rule on this matter. Based on past experience, the solution would be to continue applying the same reporting and audit standards as those in place during the 2007-2013 financial

perspective. This is the common practice regarding projects started in one programming period but continuing in the following one.

Conclusion

The breakdown of responsibilities between the private and the public sector is very clear: most of it is borne by the private entity who can sell the infrastructure to the public entity at the end of the contract.

Table 16: Responsibilities between public and private sector						
	Investment	Design	Build	Operating and maintenance	Financial responsibility	Facility ownership
Grant co-financing of availability payments	Private	Private			Public	Private with transfer to public at the end of contract

Advantages / potential constraints:

Table 17: Potential constrains and advantages of the DFBO with EU funds co-financing the capex part of availability payments Model	
Advantages	<ul style="list-style-type: none"> ➤ “No service no payment principle” applied to the availability payments; ➤ High level of leverage on private capital and innovation. ➤ Possibility of using EU grants over the whole life of the project
Potential constraints	<ul style="list-style-type: none"> ➤ The use of an escrow account in order to ensure payments of EU grants beyond 2015 is untested and hypothetical at this stage; ➤ Time management of PPP and grant processes.

2.4 Examples of past projects under PPP with EU co-financing

Bacau Solid Waste Management Project- example of private operation and maintenance (PPP1)

Project	Bacau Solid Waste Management Project
Rationale/PPP Objectives	Through the project, waste services will be reorganised at a regional scale, large enough to enable competition and private sector involvement, with long-term operation and maintenance concessions tendered for landfill management and waste collection. The project is meant to strongly increase technology transfer, including modern leachate collection and treatment for both the existing and new landfills.
Financial structure	Total project cost is 20 million € split between EBRD loan of EUR 5 million to the Municipality of Bacau, with co-financing of EUR 15 million from an EU ISPA grant.
EU Support	EU grant of 15M € under the ISPA scheme
Contract agreement between parties	Two tendering processes were launched: the first one for the construction of landfill and collection infrastructure, the second one for the operation of the landfill and collection services.
Risk allocation	The construction risk is as per a traditional construction contract. Operation and maintenance risks are shifted to the private operator. There is no financial risk transfer for the infrastructure financing since the financing is provided entirely by the public sector.
Tariff setting	N/A
Strong points	A PPP scheme easy to set up and enabling to leverage on private sector technology know-how
Weak points	The final landfill operator is selected after the landfill is constructed, resulting in timing issues for the new operator to take over the facility; also there is little opportunity for the private partner to influence the construction in comparison to a DBO approach. For collection, the operating concessionaires also have little influence on the specification of the grant-funded equipment (eg. bins, trucks) which they take over once their concessions are awarded.

Dublin Region Waste Water Scheme: example of blended DBO (PPP 2)⁴⁴

Project	Dublin Region Waste Water Scheme (Treatment Plant) – Ireland
Rationale/PPP Objectives	Attracting the best technology and expertise available in the market, increasing economic and environmental efficiency, better protection of capital investment
Financial structure	Overall project cost of 265 million €. Investment financed by Irish Government and EU grant. Assets publicly owned.
EU Support	Cohesion Fund financed 50% of the investment costs
Contract agreement between parties	DBO contract
Risk allocation	Risk principally allocated to private operators: they cover maintenance and operating costs
Tariff setting	Municipality set tariffs to cover both capital and operating costs
Strong points	Project attracted latest technology; project agreement was structured to incentivise the operator to protect the capital investment and ensure project sustainability.
Weak points	Project dependent on government funds to finance the gap between operating costs and tariff revenue

Background

Ireland has had several successful DBO experiences under the Cohesion Fund⁴⁵. In particular, the “Dublin Bay Project” (Ringsend Waste Water plant) was carried out under a DBO approach. The objective of the City Council of Dublin, in accordance with the “Operate what you Design” principle, was to provide the private partner with an incentive to employ innovative and cost effective design methods.

⁴⁴ This example as well as other DBO projects already carried out is also developed in detail in the DBO guide available on the EIB site [insert link when DBO guide published](#).

⁴⁵ “The Cohesion Fund in Ireland”, report of the Irish Institute of Public Administration, Case Studies chapter p.32, available on line http://www.ndp.ie/documents/EU_Structural_Funds/cohesion_fund/NDP-Cohesion.pdf?bcsi_scan_A8AC74DCFE366902=0&bcsi_scan_filename=NDP-Cohesion.pdf

Tender procedure

The contract was awarded to an international consortium through a public tender.

EU grant application

It was made after the award of the contract.

PPP features

The Dublin City Council entrusted the private contractor with the responsibility for designing, building and then operating the waste water infrastructure for a period of 20 years. As part of the DBO arrangement the waste water plant shall be handed back to the City Council at the end of the contracted period (20 years). This overcomes the difficulty of predicting maintenance costs of this type of infrastructure.

Financial structure

- Total cost of overall project: 264,900,448 €
- Total eligible costs for EU purposes: 166,729,223
- Rate of assistance: 80%
- Cohesion Fund assistance: 133,383,378
- Cohesion Fund assistance as a proportion of total costs: 50%

The private contractor is paid for the operation of the plant from tariff revenue, which it collects from non-domestic consumers only (domestic consumers do not pay for water treatment in Ireland). Tariffs are set by the Municipality, at a level sufficient to cover both capital and operating costs. The contract does not provide for profit-sharing and the assets remain publicly-owned.

Maribor Wastewater Treatment: example of blended Parallel Co-finance of Capital Expenditure (PPP 3)

Rationale/PPP Objectives	Finance the main collector (infrastructure 1) and design, build, finance and operate a new wastewater treatment plant (infrastructure 2)
Financial structure	Total project cost for infrastructure 1 was 6 M€ fully financed by EU grant .Total project cost for infrastructure 2 was 43 M€ financed through equity, senior debt from EBRD and Commercial Banks, shareholders loan, and generated cash form operation.
EU Support	The main collector (infrastructure 1) has been fully financed (6.5 M€) through EU grant
Contract agreement between parties	Design and Build contract (infrastructure 1) coupled with DBFO (infrastructure 2)
Risk allocation	Risk associated with the waste water treatment plant mainly allocated to private operators: design quality, maintenance and operating costs. Public sector – ie City of Maribor – bore the off-take risk ie guarantee to supply waste water to the private operator by an agreed start date and in agreed minimum volumes, which was a key interface risk linked to timely implementation of the grant-funded main sewer collector component.
Tariff setting	Municipality set tariffs to cover both capital and operating costs
Strong points	Combining private sector participation under concession contract, EBRD project finance and E.U grants. Successful and unique project
Weak points	Interface risk (see risk allocation above)

Background

This is the example of a project where a separation was made between two infrastructures: a main collector (infrastructure 1) and a treatment plant (infrastructure 2). The municipality of Maribor identified a need for leveraging on private resources both for financing the main collector and designing, building, financing and operating the wastewater treatment plant (WWTP).

Tender procedure

After preliminary feasibility studies the Municipality of Maribor launched an international tender for the concession of Wastewater Treatment Plant (WWTP) which

was awarded to Suez. The construction of the main collector was then tendered separately.

EU grant application

The application for EU co-financing took place after the award of the WWTP BOT contract but the application concerned only the co-financing of the main collector (infrastructure 1). The result was the award of a 6.5 million € grant which financed entirely the main collector.

PPP features

The main collector was constructed under a Design and Build scheme (see model one) and the WWTP is operated under a DBFO contract with significant risk transfer to the private sector provisions. For this project a Special Purpose Vehicle was set up (a consortium of shareholders) and its obligations were to design, finance, build and operate during 22 years the WWTP while meeting construction deadlines and performance requirements in terms of effluent quality and requested percentage of pollution reduction.

Financial structure

Total project cost for the WWTP was 43 million € split between:

- Equity from shareholders: capital of 4 million € and loan of 7.4 million €
- Debt from an ERBD loan of 28.1 million €, private sponsors injecting also 4.2 million €

There was no municipal or state guarantee. For the services rendered, the Concessionaire is entitled to a monthly Service Fee paid by the Municipality linked to the volume of waste water treated, with a minimum off-take. The Service Fee is defined for the full duration of the contract as: Capital charge + Fixed Operating Charge + Variable Operating Charge.

Lessons learned

- This project is considered as an example of good practice combining Private Sector, IFI and EU Funds
- A key lesson was the critical importance of the interface risk in such parallel structures. The collector was very nearly completed too late, which would have resulted in a major cost to the City to pay the off-take price to the private operator even while no waste water could be treated.

Athens International Airport: example of a blended DBFO (PPP4)

Rationale/PPP Objectives	Construction of an airport with high risk allocation to the private sector
Financial structure	47% was an EIB loan, 15% from commercial banks, 12% from the Greek airport development fund, 11% from EU grants, 7% from Greek State, 8% equity.
EU Support	11% of overall financing from structural funds
Contract agreement between parties	DBFO contract with ownership by the private entity and transfer to the public at the end of the contract
Risk allocation	High risk allocation to private operators but risk on level of EU grant covered by the public
Tariff Setting	Private contractor allowed to freely set tariffs at a capped level needed to obtain an annual return of 15% over capital
Strong points	Reduced cost of the project to the national budget
Weak points	Tendering difficulties due to political factors Poor assessment of and compliance with EU procedures resulting in a clawback of 12.7 million €

Background

The Greek State identified a need for an international airport in Athens and chose a public private partnership as the most suitable solution. The PPP structure was a DBFO and was sought as a way to allocate most risks to the private sector and leverage on its financial resources.

Tender procedure

After completion of feasibility studies, a tender was released and a preferred bidder was selected. However, due to political factors (Greek elections) the bidders were asked to resubmit their bids and a second tender procedure was launched, resulting in the choice of the same preferred bidder.

EU grant application

The application was launched after the contract was awarded. As a result, there was no certain knowledge of the EU grant level. It was up to the public authorities to underwrite the EU grant in the concession contract. Later on, if the co-financing were below the amount expected, the public sector would have to provide additional funds for the project. The concession contract for this project included 400 million € of EU grants. However, the Greek government received only 250 million € and as a result had to disburse additional 150 million €.

PPP features

The DBFO contract was signed and provided for the concession to be held by Athens International Airport SA, a partnership between the Greek State (majority holder with 55%) and a private consortium (45%). The structure allowed private financing of the project while maintaining control in public hands. Most risks were allocated to the private partner. For instance, traffic risk was fully allocated to the private sector since there was no minimum level of traffic guaranteed in the contract. Regarding the asset ownership, the contract stated that the concession would be handed over to the public authorities after 25 five years of operation.

Financial structure

The total project cost amounted to 2 109 million € and was financed as follows:

- 47% by an EIB loan
- 15% by commercial banks
- 12% by the Greek airport development fund
- 11% by EU grants
- 7 % by Greek state
- 8% by sponsors through equity

The Airport concessionaire was allowed to freely set tariffs at a capped level needed to obtain an annual return of 15% over capital, as well as to cover the operation expenses, depreciation of assets and interests paid. This implied that operation risk was reduced (as rates could be increased to cover under-recovery of operational cost), that construction risk was reduced (as a higher construction cost was reflected in the higher depreciation of assets), so that overall project risk was significantly reduced.

It should be also noted that the EC decided to reduce the grant because eligibility rules of the Cohesion Fund were not complied with entirely (incorrect assumptions on eligible expenditure) and publicity and information requirements were not respected. The reduction amounted to more than €12.7 M. As the Greek State was the underwriter in the concession contract to the concessionaire of all grants to be obtained from the EU, this decision meant that the €12.7 M repayment of grant (about 5%) had to be covered entirely by the Greek Government.

Lessons learned

- The project involved the public control of the concessionaire. In many of NMS, PPPs are perceived as hidden privatisations. The involvement of the EU and the public control of the concessionaire may overcome negative public opinions with regards to PPPs.

- This project is an example of the effects of insufficient preparation to follow EU procedures. NMS, due to their lack of experience when dealing with the EU, should consider the effects of not fulfilling EU requirements in order to avoid clawback as happened in this project.

Vasco da Gama road bridge: example of a DBFO with upfront EU co-financing

Project	Vasco da Gama bridge
Rationale/PPP Objectives	Construction and operation of a long and wide road bridge on time and on budget
Financial structure	897 M € total cost, 35 % Cohesion Fund (319 M €), 33 % EIB (299 M €), 6 % private concessionaire on the basis of toll revenues (50 M €), 26 % government contribution (229 M €).
EU Support	35 % of total costs from Cohesion Fund.
Contract agreement between parties	DBFO contract, PPP concessionaire had the right to collect tolls on this new and on the existing Tagus crossing (25th of April bridge)
Risk allocation	Private concessionaire took construction and operating risk and also parts of the revenue risks for both bridges
Tariff setting	Determination of toll level on the basis of government decisions but within a pre-agreed framework.
Strong points	Despite substantial technical risks and uncertainties, project was implemented within just three years time, exactly on schedule so that it was operational during the Lisbon world expo of 1998. It also contributed substantially to the re-vitalisation of a large contaminated riverside area (Sacavem) which became the location of the Expo.
Weak points	Reliance on toll revenues for existing “25th of April” bridge and political pressure for continued low tariffs on that competing bridge has led to several rounds of contract renegotiations and financial restructuring.

Background

The Portuguese government identified the need for an additional road crossing of the Tagus river, mainly for long distance north-south traffic to ease traffic on the saturated existing April 25th road bridge. It was also looking for private contribution to the re-development of a 340 ha contaminated riverside area, the largest industrial area within the city, including an oil-refinery, a waste dump and treatment facilities, military

facilities and obsolete port facilities, which would be linked through the bridge to the southern side of the Tagus basin and become urbanised to host the Expo 1998 in Lisbon. DBFO was sought as a way to allocate design and construction risks to the private sector and to leverage on its financial resources.

Tender procedure

Provision of appropriate institutional capacities to steer the project preparation and the project tender through the establishment in 1991 of “Gabinete da Travessia do Tejo em Lisboa” (GATTEL) as a governmental project implementation authority. Launch of the negotiated procedure in two phases: preselection procedure in 1992 (five international consortia), submission of bids in 1993, finalisation of negotiations with the preferred bidder in 1994 and conclusion of concession contract with “Lusoponte”, an SPV composed of Portuguese, British and French companies in April 1994. Start of construction works one year later, in April 1995 and completion in March 1998, on time for opening of Expo 1998.

EU grant application

Precise information to be included in September 2009

PPP features

The Expo’98 World Exhibition was the flagship event associated with a major urban renewal project. ParqueExpo was the urban planning authority over the entire area.

The success of the renewal project depended on the advance sale of land, in order to obtain funds for land acquisition, demolition and soil decontamination, for the resurfacing of the whole area, and for the construction of exhibition pavilions and several architectural landmarks. Land value depended on the credibility of government commitment to deliver the renewal project and to deliver accessible public facilities. The World Exhibition’s fixed opening-date was critical for the success of the global project, as well as the construction of the new bridge.

The PPP concessionaire had the right to operate and collect tolls on both Tagus bridges. “April 25th” bridge’s low toll levels were to be raised steadily during the construction of the “Vasco da Gama” bridge, converging to a common level enough to fully fund the concession. Therefore, conceptually, no public money would be spent on the project.

The PPP contract with Lusoponte included exclusive rights for 28 years to all future crossings near Lisbon, the right to collect tolls on both bridges at pre-defined rates, and the responsibility for extensive environmental protection measures during and

after construction. The contract was subject to early termination in case total traffic (in both bridges) reached 2250 million vehicles before completing 28 years.

Contract re-structuring to resolve the concessionaire's revenue deficiencies

In 1994, after financial close, the announcement that users of the old "April 25th" bridge would pay increased tolls to the "Vasco da Gama" concessionaire was perceived by the public as cross-subsidisation. After the first 50% increase (from € .50 to € .75), substantial public opposition built up over the "April 25th" bridge tolls, so that the government decided to keep bridge tolls at a low level and compensate Lusoponte for the loss of revenue. And later, taking into consideration all changes introduced, the government decided to renegotiate the contract.

The result of the renegotiation was the increase in the term of the contract, from 28 years to 35 years, and the payment of compensation by government (as presented in the overview table). In the process, the clause allowing for early termination of the contract, meaning that the effective term increase was between 7 and 11 years, was cancelled. And some responsibilities (e.g. the maintenance of "April 25th" bridge) and risks were transferred back to the State.

Furthermore the government allowed Lusoponte to benefit from favourable tax rules.

Later, after Portugal entered the *euro zone*, Lusoponte was refinancing the project, so all this contributed to a significant change in the contract and in its financial balance.

Lessons learned

- The initial success of the project has altered in many ways due to the factual tariff competition between both bridges and the reliance of the contract on tariff revenues. The level of EU contribution has strongly reduced the gravity of those problems so that the project can still be considered sustainable and the concessionaire has not defaulted. Without this concession neither the bridge would have been built in the time required, nor the brownfield site which subsequently became Expo site, would have been re-developed in the time required. Therefore, despite some serious criticism of the national court of auditors, the overall evaluation is still positive,
- Therefore this project served as the basis of concepts for all major infrastructure projects for which EU funding is foreseen during the ongoing period of financial perspectives (including several high speed rail projects, light rail, a new airport of Lisbon etc). Concepts for those projects (which have partially matured into full final contract drafts) have reduced the transfer of revenue risks and increased the availability payment based transfer of operational risks. It is assumed that EU funding requests will be submitted to the Commission upon contract signature and national political endorsement in late 2009 and in the course of 2010.

3 Model analysis using the Public Sector Comparator (PSC)

This section's objective is to present a practical method for determining the best Value for Money (VfM) of each of the PPP models described in section 2, taking into account the EU Structural Funds contribution. The Public Sector Comparator (PSC) is an example of a tool which can be used to help the beneficiaries to select the optimal model for their project.

The following presentation is a project simulation deriving from a wide range of our past experiences. It does not aim at advocating in favour of one particular model but rather intends to provide a practical tool for the beneficiaries in order to make the best possible choice given their project's specifics, and to illustrate the kind of analytical assumptions which need to be made when comparing alternative structures.

The PSC takes into account the EU Structural Funds contribution and shows that the main impact is on the public sector by reducing its costs to a degree that will depend on the PPP structure of the project and on the co-financing rate, once all the risks have been taken into account.

This section is organised following these steps:

- What is the PSC and its role?
- On what assumptions is it build?
- How do you estimate the financial impacts of the risks?
- How do you reach a final result using the PSC?

3.1 Role of the PSC approach in comparing projects

The Public Administration has to deliver the public service in a responsible way which allows it to preserve public financial resources as well as to benefit from the private sector experience and know-how.

The search for the best partnership should aim to find a "win-win" partnership between the public and the private entities, in terms of:

- share of responsibilities between those who are best able to manage them and the cost of risks;
- best Value for Money (VfM).

As a tool for comparing various blended PPP structures, we will use the Public sector Comparator (PSC) traditionally used to determine whether to engage in a PPP at all.

The PSC is used at all stages of the procurement process to evaluate whether to engage in PPP or go through the classical public investment, how to optimally divide various risks between the public and private entities, how to structure the PPP and which payment mechanism to pick, and which of the offers submitted in the tender process provides better value to the public administration.

Similarly, the PSC answers the question of what are the expected financial consequences of picking a particular blended PPP structure, and whether it provides the best financial and economic value for the public entity.

The PSC compares:

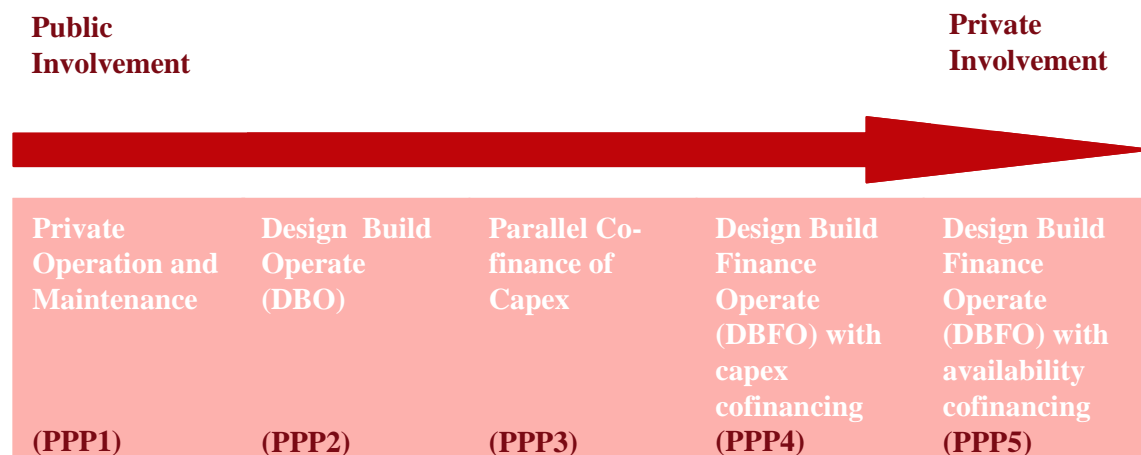
- the operating, investment and financial flows of the project,
- the necessary contribution of the public entity in a given structure,
- the expected financial impact of significant project risks that remain on the side of the public entity.

Here below we evaluate different forms of blended models previously described, with different levels of the private entity's involvement, notably in financing or operating the infrastructure, and with different utilisation of the Structural Funds contribution.

A financial model is constructed for the project as a whole for each option under analysis, then additional risk-based parameters are assessed to estimate expected financial impact of relevant project risks.

In the graph below the five selected structures are classified on a scale representing the Public versus Private Involvement in the project.

Figure 16: Public versus Private involvement in the project



For the purpose of this document, we will analyse the example of a toll motorway. The example project is hypothetical. The assumptions are based on market knowledge and comparison of similar projects. The financial model used to assess the financial impacts of various structures and risks is a high-level simplified model producing the basic elements of the profit and loss account, cashflow statement and balance sheet of the project, as well as projected financial flows for the public entity, the private entity, and the EU.

3.2 Reference projects and their assumptions

Every financial model can only be as reliable as the assumptions used to build it. For the Public Sector Comparator, reasonable values, preferably based on the Feasibility Study, market knowledge and best practices, must be assumed for:

- basic characteristics of the infrastructure,
- construction costs,
- operating costs,
- financing costs
- revenues,
- schedule of costs and revenues,
- asset values at disposal/transfer/end of operations,

- EU grant,
- appropriate discount rates,
- other assumptions.

When comparing various blended structures for the same project, thought should be given to how various structures impact particular assumptions. These differences in assumptions contribute to the differences in the final result of the PSC.

The basic assumptions for the example project are as follows:

- The project is a toll motorway,
- There are two sections, each of 50 km in length,
- Tolls are set by the public entity at 0,1 EUR net of VAT for light vehicles and 0,3 EUR net of VAT for heavy vehicles,
- The preparatory work on the project finishes and the first tender begins at the beginning of 2007,
- The concession is granted for 30 years from beginning of construction.

3.2.1 Costs

Identifying the costs is the first step in the construction of the PSC. The aim of this step is to list all the costs over the life of the project.

The cost estimation does not take into account the risks of the project. Their probable financial impact will be assessed separately.

Capital costs (Capex)

Capital costs are those relative to the construction of a new facility or the construction of a new asset (for instance, the costs generated by the designing of an asset, the cost of land on which the asset has to be built, the materials needed to implement the asset, or engineering costs)

For modelling purposes, capital (construction and design) costs are usually derived from the project's Feasibility Study. An important assumption for construction costs is the schedule of expenditure; different amounts of construction costs may be incurred in various years, as first a design is prepared, then preparatory work starts before construction proper, and finally the finishing tasks may be less expensive than creating the basic infrastructure.

The chosen blending option impacts the construction costs. In general construction costs are higher if construction is carried out by the same entity who will then operate the infrastructure. This is because higher-quality construction usually allows for savings in operating costs. If the same entity will later operate the infrastructure, it will be motivated to design and construct for higher operational efficiency that will allow it to realise benefits later.

The capex assumptions for the example project are as follows:

- Total baseline net capital expenditure:
 - 500 000 ths EUR for Section 1,
 - 500 000 ths EUR for Section 2.
- Modifications to capital expenditure according to project structure:
 - Lower by 1% for PPP1 (separate Design&Build and long operating contract) for both sections
 - Lower by 1% for PPP3 (parallel cofinance of capex) for section 1 only
- Division of capital expenditure:
 - 90% basic infrastructure (road)
 - 10% machinery
- Capital expenditure schedule:
 - 40% in first year of construction,
 - 40% in second year of construction,
 - 20% in third year of construction.

Operating and maintenance costs

Operating and maintenance costs allow the daily operation of the asset and looking after the asset and keeping its quality level.

Operating costs consist of:

- Annual operation and maintenance costs (including toll system operation, regular and winter maintenance),

- Costs of periodic renovations to the main and supporting infrastructure, as well as the frequency of periodic renovations,
- Administration and overhead.

If the same entity who designed and built the infrastructure is the operator, it may be expected to obtain additional operating efficiency due to designing the infrastructure to optimise operating costs (e.g. using more durable construction materials in order to minimise the necessity for periodic renovations further on).

It is also worth noting that in the case of administration and overhead costs not directly related to the project infrastructure and services, they may not constitute eligible costs for EU co-financing. This is especially true of administration and overhead costs of the private entity related to the fact that the private entity is often a consortium that founds a special-purpose company (and bears the related administration costs) before being selected by way of tender.

The operating and maintenance cost assumptions for the example project are as follows:

- Total baseline net annual operating and maintenance costs:
 - 28 500 ths EUR for Section 1,
 - 28 500 ths EUR for Section 2.
- Total baseline net periodic maintenance costs:
 - 33 667 ths EUR for Section 1,
 - 33 667 ths EUR for Section 2.
- Modifications to operating and maintenance according to project structure:
 - Higher by 2% for PPP1 (separate Design&Build and long operating contract) for both sections
 - Higher by 2% for PPP3 (parallel cofinance of capex) for section 1 only
- Frequency of periodic maintenance: every 10 years plus final maintenance in the last year of concession
- Annual administrative overhead for private entity: 500 ths EUR

Financing costs

Financing costs are a burden on the institution that assumes capital expenditure financing responsibility in a given option. They are based on market conditions, and usually assume long-term financing instruments such as loans or bonds. Financing

costs may be lower for the public entity, but they depend on the credit rating and financial situation of the borrower. Financing costs consist of interest, coupons and/or fees for the usage of various financial instruments.

Financing costs do not constitute eligible costs for the purpose of calculating the funding gap.

The financial assumptions for the example project are as follows:

- Commercial loan for capex financing in PPP3, PPP4 and PPP5:
 - Financing 45% of remainder of capex after EU co-financing,
 - Grace period: 5 years,
 - Loan maturity of 20 years,
 - Initial fee 1,5%
 - Margin over EURIBOR 3M:
 - 150 b.p. if there are no user charges,
 - 200 b.p. if there are user charges present.
- International Financial Institution loan for capex financing in PPP3, PPP4 and PPP5:
 - Financing 45% of remainder of capex after EU co-financing,
 - Grace period: 5 years,
 - Loan maturity of 20 years,
 - Initial fee 1,5% and margin over EURIBOR 3M of 100 b.p..
- Short-term revolving loan to provide liquidity, at 200 b.p. over EURIBOR 3M
- Equity financing:
 - Initial contribution of 1M EUR equity,
 - 10% of capex after EU co-financing (only in PPP3, PPP4, PPP5),
 - Providing project liquidity as needed,
 - Dividend payment based on retained earnings, current earnings and cash surplus over the level necessary for maintaining a minimum Debt Service Coverage Ratio of 1,2,
 - Final dividend in the last year of concession, payout of remaining cash.
- Reserve for periodic maintenance gathered over 10 years.

3.2.2 Revenues

There are several kinds of revenues possible in blended PPP projects:

- Revenue for the private entity from direct or indirect user charges,
- Revenue for the private entity from availability payments paid by the public entity,
- Third-party revenue not coming from either the users or the public entity (e.g. lease payments from companies who offer additional services to users of the infrastructure), if present.

Only user charges and third-party revenue constitute revenue that should be taken into account when calculating the funding gap for the project. A project with only availability payments is not a “revenue generating project”, as analysed in section 2.

If the user charges are set low enough to preserve a funding gap that allows for EU co-financing, they do not cover all the costs of the private entity within the 30-year timeframe of the funding gap calculation. Therefore there are three possibilities for making the project bankable:

- extending the duration of the concession (up to as much as 75 years in the case of some French non-blended PPP projects),
- providing a supplemental payment from the public entity to the private entity,
- giving the private entity an availability payment instead of user charges (which in this case constitute the revenue of the public entity).

For the purpose of PSC calculation, revenues from user charges are assumed based on a demand forecast and pricing policy. Availability payments are calculated based on project costs (including financing costs, if present) and a given return on capital for the private entity. Third-party revenues are assumed based on a demand forecast and valuation of the services provided to third parties.

The revenue assumptions for the example project are as follows:

- Base Average Daily Traffic (ADT) at 20 000 vehicles in the first year of operation.
- Base ADT rising by 1% in each year of operation.
- Heavy vehicles constitute 20% of traffic.
- Tolls (if present) set by the public entity at:
 - 0,05 EUR/km in real terms for light vehicles,
 - 0,15 EUR/km in real terms for heavy vehicles.
- Availability calculated at a level sufficient to provide the required private entity IRR at a realistic (median) risk level.
- No third-party revenues

3.2.3 Schedule

The project schedule is applied to cost and revenue assumptions to appropriately allocate cash flows during the lifecycle of the project.

The most important milestones of the project schedule are:

- start of tender(s),
- beginning of design and construction,
- beginning of operations,
- loan repayment schedule,
- end of concession period.

The project schedule is the outcome of answers to the following questions:

- When will the project be ready for tender?
- Which procedure will be chosen? (A competitive dialogue takes longer than restricted procedure.)
- How long will design and construction take?
- What is the duration of the PPP contract?

The schedule assumptions for the example project are as follows:

- Start of first tender at the beginning of 2007
- Tender length:
 - 9 months for restricted tender,
 - 18 months for competitive dialogue in PPP2 and PPP3,
 - 24 months for competitive dialogue in PPP4 and PPP5.
- Second tender (in PPP1 and PPP3) starts a year after the first tender and finishes in time not to delay construction and operation.
- Time for grant application to be approved: 9 months from submission of project to national authorities to European Commission approval (realistic assumption: 1 round of corrections to the application)
- Grant application is submitted:
 - When first tender begins (PPP1, PPP2, PPP3),
 - After DBFO tender ends (PPP4, PPP5) –
- Construction begins when grant is confirmed and tender ends.
- Construction lasts 3 years.

3.2.4 Treatment of asset values

Some assets are generally created during the long term partnership. The treatment of these assets in the PSC will depend on their ownership status. If the public entity finances the capital expenditure, it may remain the owner of the asset, while the private entity only operates it. In that case the asset value does not impact the private entity's operations. Otherwise the asset may be owned by the private entity and depreciated according to accounting regulations. In that case EU co-financing should also be treated according to accounting regulations.

Additionally, asset values upon the end of the contract should be taken into account if the private entity is the owner of the asset. Asset transfer may result in a benefit to the public entity equal to the residual value of the asset, unless the asset transfer occurs after payment to the private entity of a sum equal to the residual value of the asset.

The asset value assumptions for the example project are as follows:

- Infrastructure is depreciated at a linear rate over 27 years.
- Machinery is depreciated at a linear rate over 10 years.
- At the end of the concession period, total net asset value is 0.

3.2.5 EU Grants

If we consider that the European Commission provides grants to a public or private entity involved in a Public-Private Partnership, we have to integrate those EU grants in our analysis when comparing various project structures.

The way those EU Grants will appear in our analysis differs importantly depending on the PPP structure. The following characteristics must be taken into account:

- the grant amount;
- the grant beneficiary;
- the grant procurement timing: grants may intervene in the Design&Build or in the Operation phase. Moreover, the grants procurement process will take more or less time, having a direct influence on the grants' timing.

When user charges are present, the funding gap of the project must be calculated. The procedure for calculating the funding gap does not differ in various blended PPP options, though the funding gap itself may differ due to differences in capex and operating and maintenance costs.

The EU grant assumptions for the example project are as follows:

- The project is revenue-generating and a funding gap is calculated.
- The basic co-financing rate is 60%, applied to the funding gap.
- Funding gap calculation according to rules for the 2007-2013 programming period
- Grant amount is calculated for the realistic scenario.
- Grant cofinances:
 - PPP1: Capex on both sections, public entity as beneficiary,
 - PPP2: Capex on both sections, public entity as beneficiary,
 - PPP3: Capex on section 1, public entity as beneficiary,
 - PPP4: Capex on both sections, private entity as beneficiary
 - PPP5: Availability payment, public entity as beneficiary.
- VAT is an eligible costs in PPP1, PPP2 and PPP3 (since the public entity is the beneficiary and it is not able to recover VAT paid)

3.2.6 Appropriate discount rates

To take the time value of money into account, all flows should be discounted using the appropriate discount rates. The discount rates are different for every party involved in the transaction (public and private entities).

For the private entity, the discount rate is the required Internal Rate of Return on the investment. It is applied to flows between the project and the private entities that are the project's shareholders - equity contributions and dividends.

For the public entity, the discount rate is the public entity's Cost of Capital. This is most often assumed as equal to the yield on long-term bonds issued by the public entity.

Additionally, an appropriate discount rate should be assumed for the capital expenditures, operating and maintenance costs and revenues, for the purpose of calculating the funding gap of the project. This rate should be assumed according to the rules of calculating the funding gap and Cost-Benefit Analysis of EU-funded projects.

In each case nominal streams should be discounted with nominal discount rates, and real streams with real discount rates. This is particularly important when taking into account the risk of changes in the macroeconomic environment. If inflation rises, the costs may be higher, but the nominal discount rates assumed for analysis at present remain the same, resulting in the estimated financial impact of higher inflation for the project.

The discount rate assumptions for the example project are as follows:

- Private entity nominal discount rate:
 - Base required private entity IRR of:
 - 10% in PPP1 and PPP2,
 - 12% in PPP3, PPP4 and PPP5 due to additional financing risk.
 - Increase in private entity IRR by 300 b.p. if user charges are present due to additional traffic risk.
- Public entity nominal discount rate of 6%

3.2.7 Other assumptions

A number of other assumptions have to be estimated in order to complete the financial model of cash flows for the project for both the private and public entities. These include tender costs, macroeconomic forecasts, as well as other assumptions about the functioning of the project. These should be estimated based on analysis of similar projects and market knowledge.

Tender costs include both administrative costs and consultant costs. They may be lower for simpler restricted tenders (such as D&B), but they may be higher if the restricted tender is for a complicated project such as a DBO, since large outlays are needed to prepare the tender documentation. The competitive dialogue may be a cheaper tender procedure for complicated projects, since it allows the public entity to leverage the expertise of the private sector.

Macroeconomic forecasts impact all costs and revenues (both regarding tariff policies and demand for services). Care should be given to selecting a reliable source of forecasts. Various scenarios should also be considered on the risk-assessing stage.

The additional assumptions for the example project are as follows:

- Tender costs:
 - PPP1 (D&B plus operating contract): 0,25% of capex for D&B tender and 0,25% of capex for operating tender,
 - PPP2 (DBO): 0,40% of capex,
 - PPP3 (parallel cofinance of capex): 0,25% of capex for D&B tender, 0,30% of capex for DBFO tender,
 - PPP4 (DBFO with capex grant): 0,30% of capex,
 - PPP5 (DBFO with availability co-financing): 0,30% of capex.
- Macroeconomic forecasts:
 - Annual CPI growth at 2.5% throughout the project,
 - EURIBOR at 3% throughout the project.
- Interest on surplus cash: 100 b.p. over CPI.
- Tax rates:
 - CIT at 20%,
 - VAT at 20%.
- VAT deductibility:
 - The public entity cannot deduct and recover VAT paid,
 - The private entity is able to deduct and recover VAT paid.

3.3 Risks and estimating their financial impact

3.3.1 Introduction to risks in PPP Projects

Risk is an inherent part of any project, whatever the structure is. It is fundamental to establish an exhaustive list of all risks related to a specific project in order to define the value assigned to each risk.

In PPP structures, the risks and their value are generally distributed between the private entity and the public entity. This is the major advantage of PPP structures, since they allow the public entity's financial burden to be predictable to some extent, rather than burdened with risk.

Depending on the project structure, the private (resp. public) entity will support more or less risks compared to the public (resp. private) entity. In that regard, as all risks are valued, the total expected financial outcome of assuming risks is assigned to each project structure and is a key factor when deciding the most appropriate project structure.

Even if risks may be attributed to one of the entities involved in the project (transferable risks), some risks will always be supported by the public entity (retained risks).

When applying the PSC, the retained risks will represent costs for the public entity whatever the structure is and may be safely omitted without distorting the results of the final comparison. Transferable risks will represent costs for the public and the private entities, depending on risks effectively transferred or not to the private entity.

Retained risks are fixed and always supported by the public entity. Transferable risks are shared between a private and a public entity, with the lowest part of risks effectively transferred in the PPP 1 option (long-term operating contract), and the highest level of risk transfer in the PPP 5 option (DBFO).

The fact that risks are transferred to the private entity does not mean that the public entity will not pay for those risks. The cost of those risks will be indirectly paid by the public entity to the private entity in order to allow the private entity to achieve its required return on capital. The more risks are transferred to the private entity, the higher are the charges paid by the public to the private entity for delivering the contract output because the private entity cannot support additional risks without any financial compensation.

In order to proceed to a clear and valuable repartition of risks between private and public entities, an integrated project risks analysis must be performed:

- identification of risks involved in the project;
- calculation of the financial impact of risks;
- determination of the entity (or entities) supporting the risks (and the proportion of risks supported by each entity).

3.3.2 Identification of risks involved in the project

The first step in the project risks analysis is the identification of all potential risks associated with a project. Types of risks and importance of each vary from project to project. The expected outcome of this identification step consists in reaching an exhaustive list of all risks linked to a specific project.

The risk categories for the example project are as follows:

- Delays in tender,
- Delays in construction,
- Changing operating and maintenance costs,
- Changing financing costs,
- Traffic/demand changes,
- Macroeconomic changes.

3.3.3 Calculation of the financial impact of risks

Assessment of the impacts of risks

It is necessary to estimate and assess the timing of the possible direct and indirect financial impact(s) of risks, because those will be reported in the costs of the projects and will represent a key element when determining the optimal structure of the project. The impacts of risks are measured by the difference between the costs previously foreseen and the additional costs/revenues if risks eventuate.

It is important to keep in mind that a risk that may not at all be financially estimated is not a risk that disappears from the global project structure analysis. A non-quantifiable risk will represent a decision factor when building a qualitative notice on the structure.

Risks should be studied in scenarios that have different probabilities of occurring. The baseline should be the median risk scenario, but optimistic and pessimistic scenarios should also be analysed.

The risk scenarios for the example project are as follows:

Categories	Unit	1. Optimistic	2. Realistic	3. Pessimistic	4. Downside
Delays in tender	[years]	0.25	0.38	0.50	0.67
Delays in construction	[years]	0.06	0.19	0.29	0.38
Changing opex	[%]	-3%	5%	10%	15%
Financing costs	[%]	-0.5%	0.0%	0.5%	1.0%
Traffic changes	[%]	5%	0	-5%	-10%
Macroeconomic changes	[1/2/3/4]	1	2	3	4

Additionally the macroeconomic scenarios are:

- Scenario 1, Optimistic: CPI at 2.0%, EURIBOR at 2.7%,
- Scenario 2, Realistic: CPI at 2.5%, EURIBOR at 3.0%,
- Scenario 3, Pessimistic: CPI at 3.0%, EURIBOR at 3.5%,
- Scenario 4, Downside: CPI at 3.5%, EURIBOR at 4.2%.

Assessment of the likelihood of risks arising

It is necessary to assess the likelihood or probability of each of the possible consequences, as well as the financial results of each of them.

It is difficult to determine with precision the probability of risk scenarios. Empirical data represents again a key source for assessing the likelihood of risk scenarios. When information is not available or of poor quality, common sense is required to attribute a probability as close as possible to the reality.

3.3.4 Calculation of the value of risks

The total estimated value of the financial impact of a risk is the sum of the value of all financial impacts related to this risk. And the value of a risk impact is the sum of all the probability weighted scenarios linked to this risk impact.

Most of the time, consequences of risks do not arise at the same time and during a short period of time. For that reason it is necessary to spread the total amount linked to a risk impact into several periods of time (generally in years). For example, if the total value of a risk impact is 200 (in m€) and if the consequences of risk are spread into 3 years (with 60% for year 1, 30% for year 2 and 10% for year 3), the risk impact values are on a yearly basis distributed over the 3 years following the mentioned

percentages (120 m€ for year 1, 60 m€ for year 2 and 20 m€ for year 3). This is most easily done by adjusting the assumptions for the initial financial projections to take into account the risk-changed input.

Corrections must be done to take into account the inflation and the discount factor.

3.3.5 Determination of the entity who bears the consequences of the risks

As mentioned in the previous sections, it is crucial to determine the present value of the estimated financial impact of all risks, but it is also crucial to identify the entity that will support each risk.

Retained risks are always supported by the public entity while transferable risks may be supported either by the public entity or by the private entity, depending on the project structure and terms of the contract.

In a PSC, blended structures assign various risks differently. In particular the construction risk is assigned to the public entity under PPP1, while the public entity bears the whole financing risk in PPP1 and PPP2, and partly in PPP3. Operating costs risk is assigned always to the private entity, but traffic/demand changes only impact it if user charges revenues are present and assigned to the private entity.

In order for PPP financing to be off-balance-sheet, according to Eurostat at least two conditions must be fulfilled:

- the private partner bears the construction risk,
- the private partner bears at least one of the demand risk and the availability risk.

This may be an additional factor in a PSC, if off-balance-sheet financing is a priority or an advantage for the public entity.

In section 2.3, we have presented for each model an indicative estimated risk distribution between the public and the private sector (see in particular tables 5, 8 & 13). Based on that estimation, the box below defines and adapts the distribution of risks for our example project.

The risk assignments for the example project are as follows:

Categories	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex co- financing	PPP5: DBFO with availability co- financing
Delays in tender	public	public	public	public	public
Delays in construction	public	private	public/private	private	private
Changing opex	private	private	private	private	private
Financing costs	public	public	public/private	private	private
Traffic changes	private	private	private	private	private
Availability	private	private	private	private	private
Macroeconomic changes	shared	shared	shared	shared	shared

3.4 Obtaining the final result of the PSC

3.4.1 Value for Money Assessment

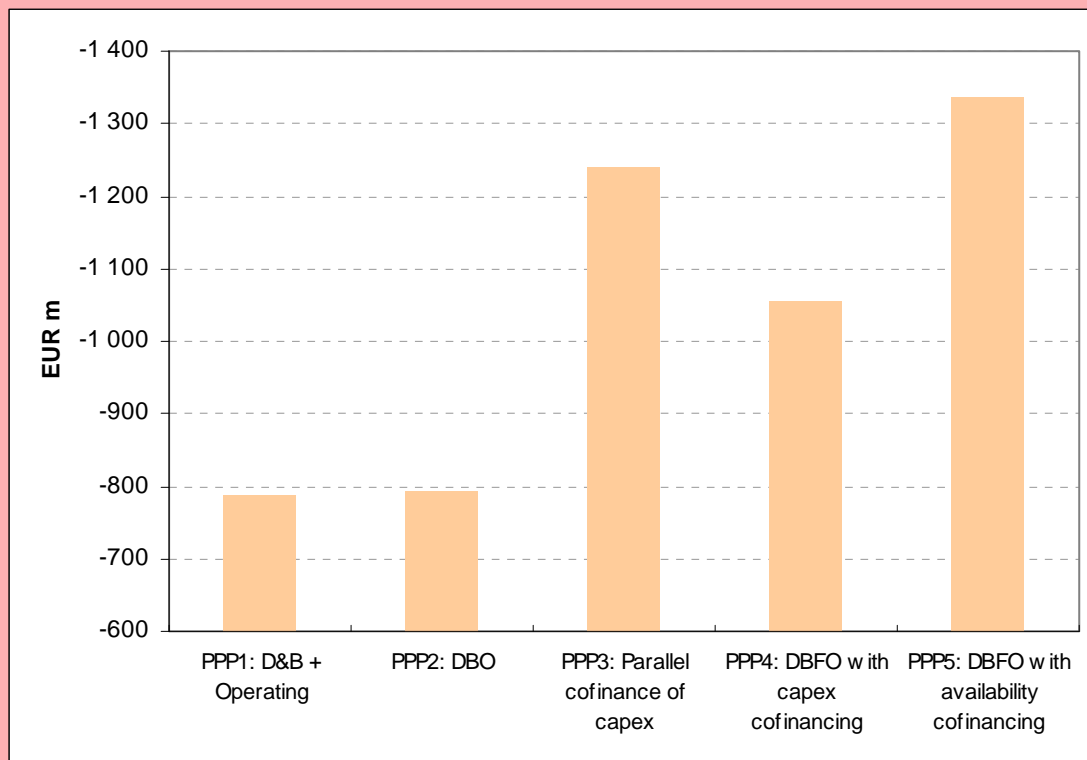
An evaluation must be done to determine which blended PPP structure offers the best Value for Money (VfM) for the project in question.

The present value of the public entity's costs is the first figure to consider. It represents the total outlay required to obtain the same value (a performing infrastructure and services rendered at a set level of tariffs/usage fees). Therefore the NPV figures in the below table (and in following tables where applicable) correspond to the Net Present Value of all expenditure borne by the public entity, which also explains why the figures are negative. For a PPP project, this consists of total public financing of capex (if present) and availability payments, less any EU co-financing.

The NPVs for the public entity for the example project, in EUR ths, are as follows:

	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex cofinancing	PPP5: DBFO with availability cofinancing
NPV	-788 844	-793 963	-1 239 719	-1 056 139	-1 337 844

Figure 17: NPV for the public entity



The lower NPV for PPP1 and PPP2 are related to the lack of financing costs in these options, in particular to the fact that the private entity does not finance capex from equity and thus requires a lower absolute value of dividends to be paid out; this is also the reason that the public entity NPV in PPP4 (DBFO with capex EU co-financing) is lower than in PPP5 (DBFO with availability co-financing). It is worth noting that even though in PPP3: Parallel co-finance of capex, the private entity finances only capex for one half of the motorway, the NPV for the public entity is much higher than in PPP4 (where the private entity finances the whole capex). This is due to the fact that in PPP3, the EU co-financing is applied only to half the project, which results in a much lower sum total of EU grant, and requires more public funds.

The VfM represents the difference between the net present costs of the various the blended PPP structures under consideration. The lowest net present cost means the structure presents the lowest service cost for the level of services required by the public entity.

The second stage is to add the risk analysis onto the basic NPV, adding the estimated expected outcomes of the risks retained by the public entity. This can be done by risk type to assess appropriate risk transfer in each category.

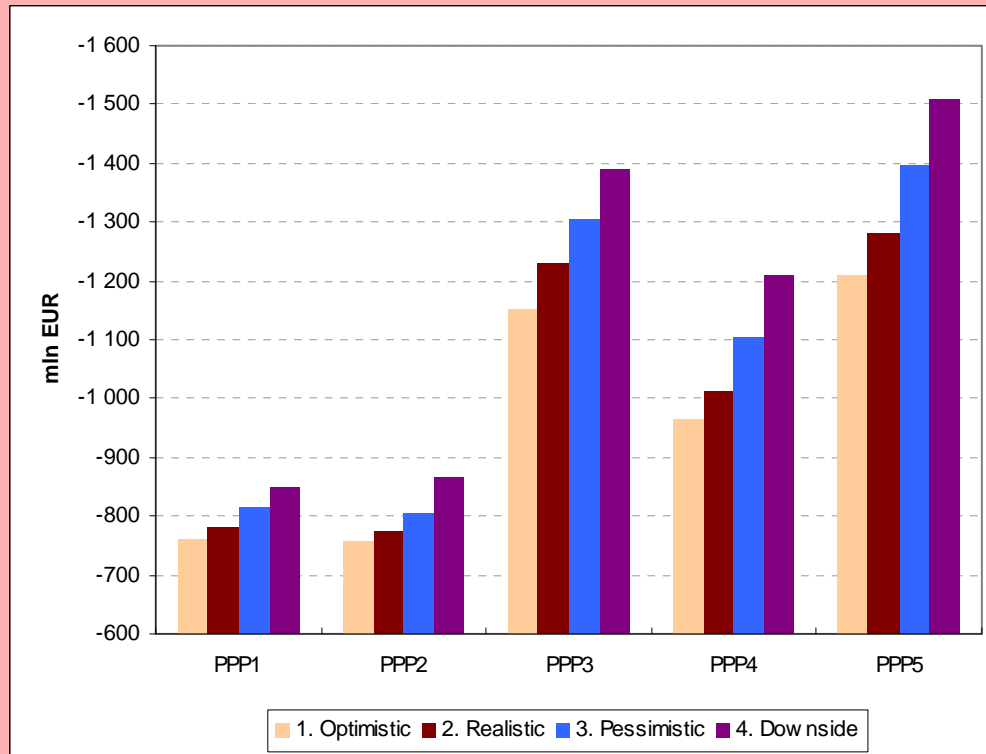
The estimated expected financial impact of risks for the example project is as follows. Many of the financial benefits in NPV are derived from a lengthening of the project schedule (via higher discount on expected public contributions) and offset by lost economic benefits from early completion of construction. This table clearly shows the benefits from risk transfer in each case.

Scenario	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex co- financing	PPP5: DBFO with availability co- financing
1. Optimistic	30 447	37 255	88 002	91 238	128 155
2. Realistic	8 496	21 140	9 140	45 604	56 584
3. Pessimistic	-24 974	-11 211	-64 924	-47 658	-59 069
4. Downside	-58 977	-71 831	-147 917	-151 297	-168 631

The risk-adjusted NPVs for the public entity for the example project, in EUR ths, are as follows:

Scenario	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex co- financing	PPP5: DBFO with availability co- financing
1. Optimistic	-758 397	-756 708	-1 151 717	-964 901	-1 209 690
2. Realistic	-780 348	-772 824	-1 230 579	-1 010 535	-1 281 260
3. Pessimistic	-813 818	-805 174	-1 304 643	-1 103 797	-1 396 913
4. Downside	-847 821	-865 795	-1 387 636	-1 207 436	-1 506 476

Figure 18: Risk-adjusted NPV for the public entity



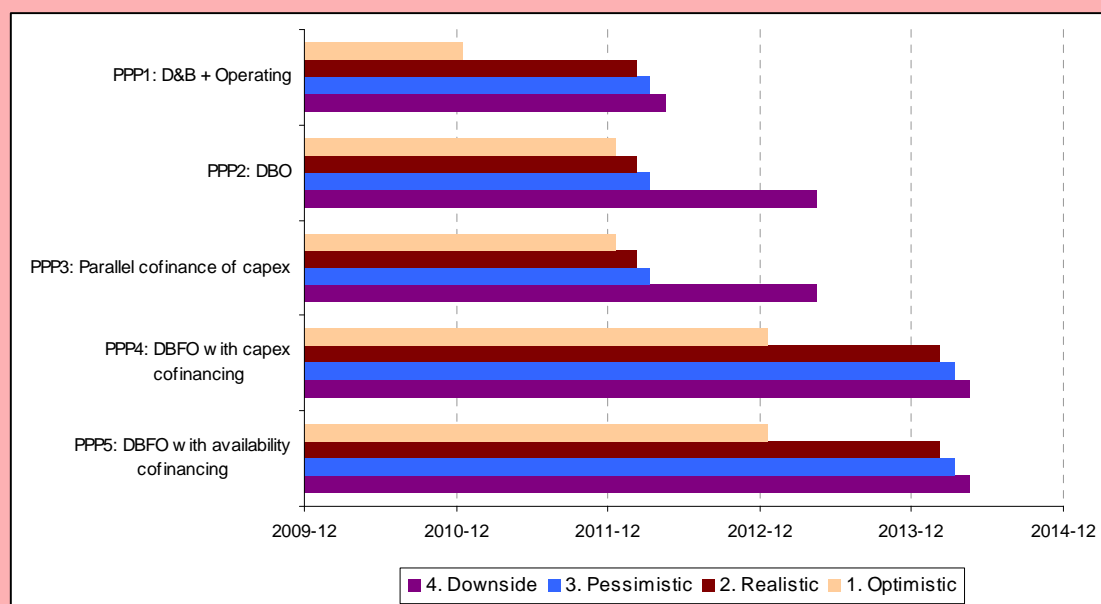
These different amounts allow the public entity to get a global net present cost of services for each blended PPP structure, as well as assess the risk of the financial commitment changing.

Additionally economic costs should be considered. These can change especially with the various schedule variations and risks, as the opening of the infrastructure is delayed and economic gains from the usage of the infrastructure are postponed.

The opening dates for the example project are as follows (assuming tenders announced in January 2007 and base 3 years of construction):

Scenario	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex co-financing	PPP5: DBFO with availability co-financing
1. Optimistic	2010-12-21	2011-12-21	2011-12-21	2012-12-21	2012-12-21
2. Realistic	2012-02-09	2012-02-09	2012-02-09	2014-02-09	2014-02-09
3. Pessimistic	2012-03-14	2012-03-14	2012-03-14	2014-03-14	2014-03-14
4. Downside	2012-04-19	2013-04-19	2013-04-19	2014-04-19	2014-04-19

Figure 19: Opening dates



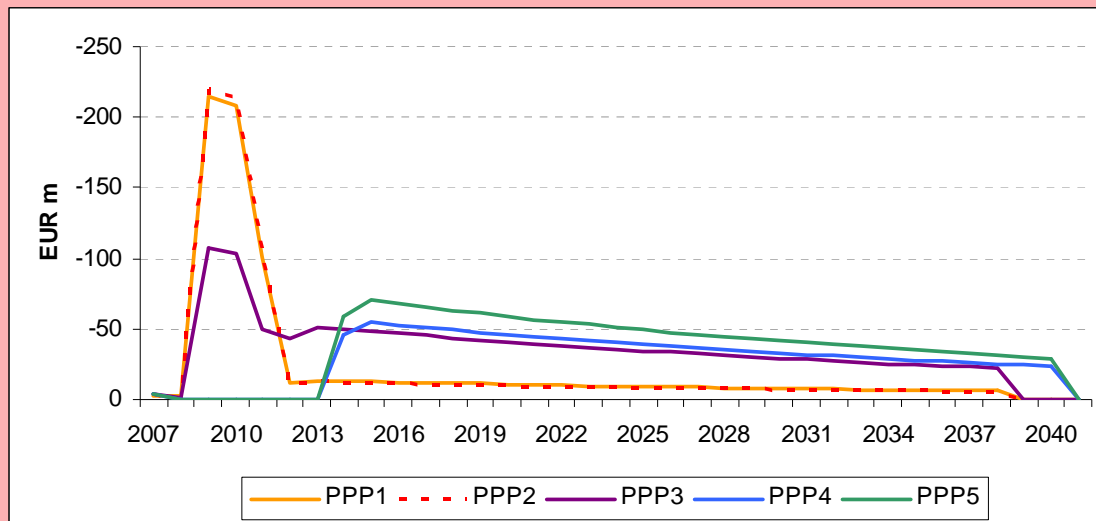
The opening dates for PPP4 and PPP5 are the latest due to the fact that in these options, the application for EU grant funds is submitted after the signing of the PPP contract (commercial close). The PPP3 option also bears the risk, in the downside/most pessimistic scenario, that construction is pushed into the next year (a new building season)

The VfM is a good and quite objective way to define which structure is the best one compared to a self-made project. However, it is important to mention that the quantitative analysis should be complemented with a qualitative analysis, which

focuses on the consideration of qualitative aspects that have not been taken into consideration before. It can for example consider public opinion, local legal and economic environment, or in any part of the service delivery that has not been assessed but is different or more attractive. Another factor to consider would be the payment timing for the public entity, since it may find large initial payments impracticable due to its own capabilities to finance large outlays in a short time period.

The payment profiles for various PPP options in the example project, under a realistic risks scenario:

Figure 20: Payment profiles for the public entity (EUR m, real terms)



The above figure shows that in PPP1 and PPP2 very large outlays are required during construction. PPP3 requires lower outlays during construction, but has the largest absolute NPV under a realistic risks scenario. The outlays for PPP4 and PPP5 start with the operating period.

Additionally for a PSC, the most optimal use of EU funds should be considered. This may be assessed as:

- nominal co-financing rate, which is the co-financing rate applied to the funding gap;
- effective co-financing rate, which is the percentage of capex financed by EU funds;
- relation of EU co-financing to total public contribution (EU co-financing plus public entity financing).

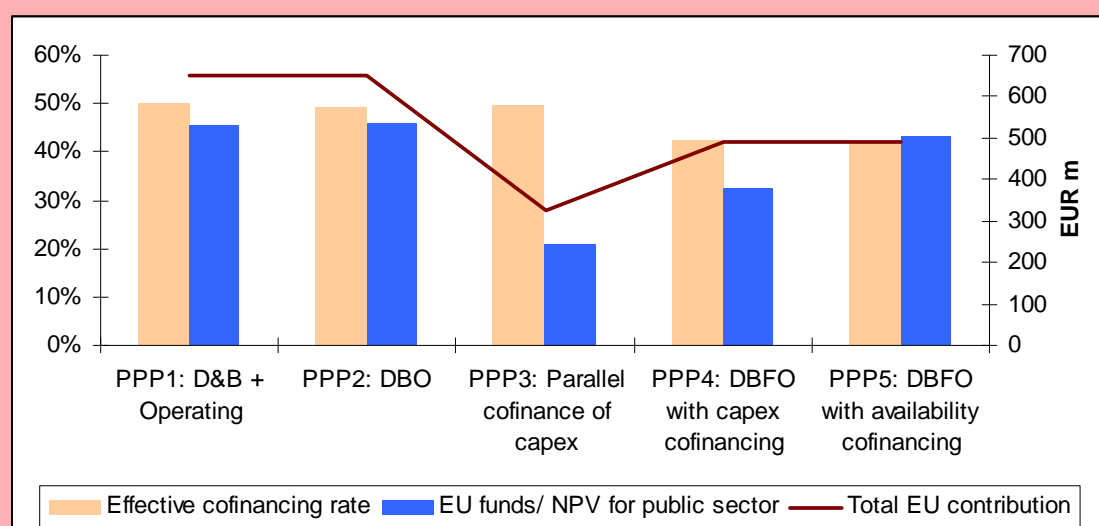
The EU co-financing efficiency in the example project, under a realistic risks scenario, is as follows:

	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex cofinancing	PPP5: DBFO with availability cofinancing
Funding gap (EUR ths, real)	1 088 400(1)	1 083 447 (1)	544 200(2)	814 397	814 397
Nominal co-financing rate	60%	60%	60%	60%	60%
Effective co-financing rate	50,04%	49,31%	49,70%(2)	42,34%	42,34%
Total EU funds contribution	653 040	650 068	326 520	488 638	488 638
EU funds / NPV for total public contribution	41,09%	41,21%	30,70%	32,59%	27,61%

(1) VAT as eligible cost

(2) Only for Section 1 of the motorway, VAT as eligible cost

Figure 21: EU co-financing efficiency



The effective co-financing rate is highest for PPP1. PPP1 and PPP2 also offer the highest rate of EU funds to total public contribution (EU funds and public entity funds). It is worth noting that the total EU funds contribution in PPP1, PPP2 and PPP3 is higher by the amount of VAT on capex, since in these options VAT is an eligible cost (the public entity cannot recover VAT).

3.4.2 Alternative assumption: impact of the presence or not of user charges

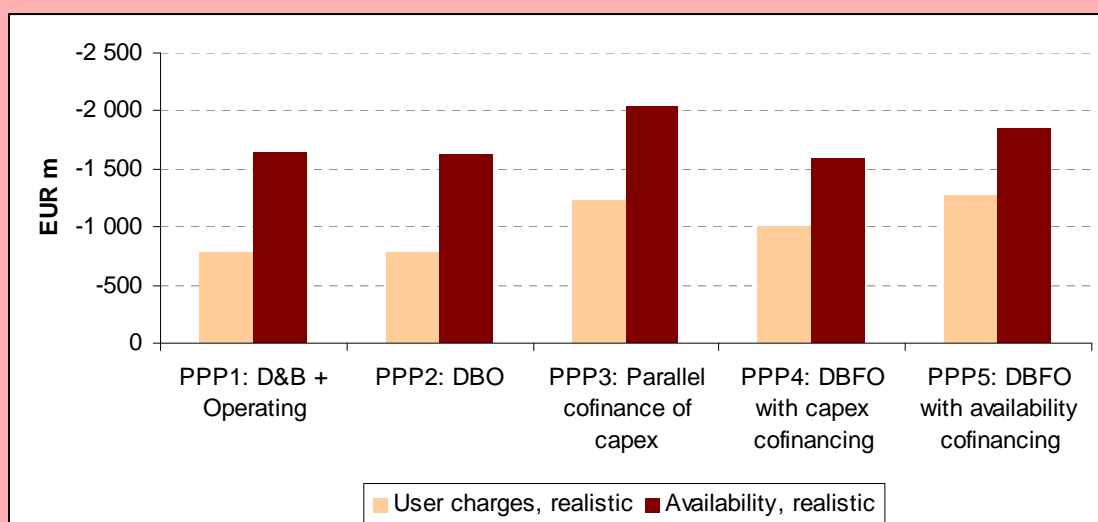
In the initial assumptions for our example project, the presence or not of user charges revenues was not predetermined. Indeed, revenues from user charges greatly depend on specific context of a given project. As indicated in section 3.2.2, they are based on pricing and tariff policy of a given Member state in a given sector and on the results of demand forecasts. This is an alternative assumption and aims at providing a comparison between two possible scenarios.

The absence of revenues in the project allows for the maximum co-financing rate, but also expands the expected public entity contribution.

The NPVs for the public entity for the example project, depending on the presence of revenues, are as follows (under a realistic risks scenario):

	PPP1: D&B + Operating	PPP2: DBO	PPP3: Parallel cofinance of capex	PPP4: DBFO with capex cofinancing	PPP5: DBFO with availability cofinancing
User charges	-780 348	-772 824	-1 230 579	-1 010 535	-1 281 260
No user charges	-1 644 346	-1 628 059	-2 040 783	-1 586 529	-1 851 061

Figure 22: NPV for the public entity (realistic risks scenario): impact of the presence or not of user charges



It is worth noting that an infrastructure without user charges means a higher public entity commitment (since there are no user revenues to offset it), but it also makes the

PPP4 and PPP5 option much more efficient, due to the removal of traffic/demand risk and the fact that in this case, the private entity requires a smaller return on equity (IRR). In the case of the example project, it makes the PPP4 option more advantageous for the public entity than PPP1 and PPP2 in terms of risk-adjusted NPV (as well as allowing for a lower annual commitment due to capex costs being spread out over the operating period, rather than requiring large outlays during the construction period)

3.4.3 Sensitivity Analysis

The Public Sector Comparator analysis helps the public entity in its selection of the optimal project structure. However, results obtained are based on a number of assumptions.

Relaxing one of those assumptions may marginally influence the results in a way that the optimal project structure does not remain the same. What is relevant in this exercise is to evaluate the impact of the assumption on the result in order to provide explicit and complete information to the decision maker.

The sensitivity analysis involves consideration of the effect on the project structures' VfM if assumptions made turn out to be incorrect. By doing this, the point at which changes in assumptions are sufficiently significant as to change the conclusions drawn can be determined on the one hand, and on the other hand it allows evaluating the degree of reliability that can be attached to results. If, by modifying lightly a non-important assumption, the conclusion change, this simply means that our results are weak.

Variables that are typically studied in the sensitivity analysis are:

- length of the project;
- inflation rate;
- discount rate;
- probabilities assigned to risks scenarios;
- construction, operating or maintenance costs;
- third-party revenue;
- expected service demand (particularly when user charges);
- residual value;
- payment mechanism.

3.5 PSC Conclusions

As stated in the introduction, the objective of this section was to provide practical tools for handling the PPP-EU grant blending issues, without advocating for against or for the use of PPP and the use of any specific model. The choice of the project structure is in the hands of the practitioners and decision makers in each Member State. This choice will always greatly depend on the project specificities and on the local conditions.

The Public Sector Comparator is equally meant as a tool and has to be adapted. For each project, the relevant stakeholders will have to determine the cost of the public investment. This cost has to be taken into account on a case by case basis and will depend on the market conditions, on the opportunity of having or not public debt, the cost of that debt, etc.

As a tool, the PSC highlights several criteria to be taken into account when selecting the optimal model. The criteria do not all point towards the same model as a preferred choice. They also depend very much on the characteristics of the project under analysis. It is also noted that in practice such a PSC analysis is most likely to be used to compare only 2 or 3 options relevant to the project rather than all 5, which would simplify the analysis.

The conclusions below are drawn only for the simulation project analysed and under the assumptions presented in this section. In other cases with different risk profiles may of course be different.

Those conclusions point out the fact that the main impact of co-financing a PPP project with EU grants is the reduction of costs for the public entity. As we point out here below in points 5 and 6, this cost reduction however might have off-sets that should be taken into account from the start as possible risks to mitigate.

Taking into account only the realistic scenario, the advantages and drawbacks of the analysed models for our example project of a motorway can be summarised as follows:

1. The risk-adjusted NPV for the public entity is lower in the case of a DBO, which makes this model more advantageous than the DBFO (both DBFO possibilities – co financing capex or availability payments) because in absolute, less public funding will be needed overall.

2. The payment profiles are however in favour of a DBFO if the public entity funds are constrained. In the case of a DBO, large outlays from the public entity are necessary during the construction period. In a DBFO, the public entity can leverage on the private capital during the construction period and thus is not forced to disburse a huge amount during the construction period and does not bear the financing costs which are transferred to the private sector. However, it is probable that the effects of a high EU grant would mitigate this effect.
3. The opening dates are the most favourable in a DBO and risk of extended delays is lower than in a DBFO, due to the shorter tenders and lack of delay in submitting the grant application.
4. The EU co-financing efficiency criteria shows that the DBO requires higher contributions from the EU funds than a DBFO. This may not be an obstacle in using a DBO for two reasons:
 - the European Commission is not opposed to high co-financing rates in projects provided they are justified.
 - the amount of EU funds available is pre-determined at operational programme level: the breakdown between projects may be flexible provided the project is viable and provided the co-financing need is proved in accordance with EU Regulations. On the other hand, the amount of EU funds is usually pre-determined at operational programme level and it must be remembered that the fact that one DBFO project is co-financed with a smaller amount of EU funds means that more EU funds will be available for other projects under the same programme.
5. Regarding the DBFO model with an up-front capex injection of EU grant, as mentioned in section 2, there is a reduction of financing costs but there is also a risk of reducing the benefits of a PPP by partially off-setting the “no payment, no service” principle. This has to be taken into account when looking at the level of the EU grant.
6. Regarding the DBFO model with use of an escrow account the decrease in financing costs for the public entity is off-set by the obligation for the beneficiary to put up the co-financing up front and thus lose the benefit of spreading the payment over a long period of time. If in the future, this could be deferred, it would make PPP 5 significantly more attractive.

Additionally, the project initiator should take into account the following factors:

- Feasibility of the pessimistic and downside scenarios (whether the public entity will be able to maintain financial stability and liquidity if the retained project risks are realised to a high extent),
- Risk transfer structure (whether the various options under analysis can be improved to optimise risk transfer while retaining the bankability of the project for the private entity).

Therefore, the choice of the optimum model is always a trade-off between various criteria and will depend on each project's specific characteristics and potential risks. The level of the EU contribution may not be an obstacle in choosing one model or another; the more important factors may be total public entity contribution, payment profile, feasibility and bankability, and level of retained risks.

Overall, both the examination of the relevant key features (section 2) and the PSC analysis (section 3) lead to the conclusion that co-financing infrastructure projects with EU Structural Funds is not at all an obstacle for choosing a PPP as a procurement tool. Handling the key EU grant-PPP blending issues should not be considered as a major constraint but integrated in the PPP project assumptions, planned as tasks and carried out. Provided the different project phases are soundly and carefully managed, the use of EU grants in PPP projects should be viewed as an advantage enabling the public sector to reduce its costs and enhance the attractiveness for private contractors.



Annex 1: Typical Contractual Clauses for making Availability Payments under international practice

1. *permit, concession and license risk*: if they are not obtained and maintained during the whole life-cycle of the project, this will be equivalent to a breach of contract - partial or total - as the public sector may not be fully capable of obtaining the services or not even the infrastructure. Escrow payments will be withheld according to the damage suffered by the Beneficiary;
2. *change of law*: within the European Community this may chiefly imply regulatory issues which may render the whole project financially unsustainable. In this case, it must be agreed who will bear the risk of additional costs in order to make the project viable, and how this would impact the release of Escrowed funds. -
3. *environmental control*: this matter may have a significant impact in terms of additional running costs over the life-cycle of the project and the standard of services to be performed. Inadequate environmental management or failure to implement agreed environmental mitigation measures could constitute grounds for withholding the Escrow payment.;
4. *technology*: if this issue is of particular relevance to the project at stake, it would be important for the Beneficiary to check whether the level and quality of the technology transferred corresponds to the licence agreement initially agreed upon. Only in this case, escrow payments would be made available;
5. *operation and maintenance documents*: these may include, for example, an operating agreement and a spare parts supply agreement. Here again, the Beneficiary will be in a better position to check whether the agreements have been fully abode by. The level of compliance may be measured against “*standard industry practices*” or “*in a manner that will achieve maximum revenues consistent with prudent operating practice*”. If those standards are not complied with, escrow payment may be withheld partially or totally, depending on the seriousness of the breach. The same solution will be adopted if the private party will not abide by the performance guarantees agreed upon in the awarded contract;
6. *subcontracting*: the contractor must agree to be responsible for all the activities carried out by sub-contractors and stand behind their performance obligations. This means that the contractor cannot ask for payments in case of the subcontractor’s default, unless he has remedied it himself. This event must be communicated to the Managing Authority as it is equivalent to a breach of contract on behalf of the contractor;
7. *damages*: should any damage, in whatsoever form or for whatsoever reason, arise from the contract to the Beneficiary, and/or any third party, the escrow payments are to be withheld, in proportion to the damages suffered;

8. *litigation*: it is not uncommon to ask for litigation representation in PPP project as it can seriously affect the timing and efficiency of the execution of the project. Should this event occur, the escrow payments may be withheld, totally or partially, depending on the Beneficiary's assessment of the consequences of the litigation on the whole project;
9. *force majeure*: it is the term generally used to refer to an event beyond the control of a party claiming it. Which party will bear the risk is always subject to negotiation. After the awarding phase, the Beneficiary will have to inform the Managing Authority on how these events – like fire, earthquake, flood, strike, etc. – will be allocated between the parties and what repercussions they will have on the escrow payments.