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Off-balance contracting to foster privately financed public capital projects

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1. INTRODUCTION

1.1. History

The origins of a collaboration between a Public Authority (PA) and a private company to develop privately financed asset initiatives can be traced back to the 13th century, a contract between the English Crown and the Frescobaldi family of merchant bankers was set up to develop the Devon silver mines (Finnerthy, 2007). Another example of such partnership is the Brooklyn bridge built in the 19th century using private capital, the debt was repaid by the users through a fee.

Despite this ancient root public-private partnership (PPP) developed globally from 1990 onwards with increasing complexity to meet the infrastructural needs of developed and developing countries. Such infrastructural needs had two main characteristics: a captive market and a low level of technological risk facilitating found raising through project finance (PF) (Gatti, 2008).

Governments used PPP to compensate for the lack of funds necessary to develop strategic infrastructures within their countries (World Bank, 2017). PPP has been widely applied in various fields such as public health, transportation, energy, public services, water and sewage and others (Wang, Xiong, Wu, & Zhu, 2018). Crouch (2000) states that the PPP rise is due to the crisis of the Keynesian welfare state policies all over the world caused by a growth of multinational companies and globalization. Moreover, the increasingly stringent fiscal policies forced various countries to use PPP to avoid the expansion of state debt. This trend arose between 1980 and 1990 when industrialized countries started using project finance to realize off-balance infrastructures with lower market risk coverage (toll-roads and parking lots) and projects partially subsidized due to their inability to repay all costs at market prices. The UK was the leader of the European nations developing a program called Private Finance Initiative (PFI) (Gatti, 2008).

PPP has been widely adopted across different sectors and nations because it is able to create a situation in which the strengths of each party can emerge. The private sector can leverage its technical knowledge, managerial capabilities and entrepreneurship to achieve an objective; while the PA can guide these capabilities towards social justice, responsibility and accountability to deliver high quality services and infrastructure to the public (Roehrich, Lewis, & George, 2014). Furthermore, between 1990 and 2009 in the European Union more than 1400 PPPs were established for a total value of more than €260 billion (Kappeler & Nemoz, 2010).

1.2. Definition

There are various definitions of a public-private partnership (PPP) in the academic literature. The World Bank (2017) defines the public-private partnership (PPP) as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance".

PPPs usually do not include service and turnkey construction contracts as they are defined as public procurement projects. More countries are progressively defining PPPs within their own legislation to adapt this process to their own legislative environment (World Bank, 2017).

The Italian Authority against Corruption (ANAC) defines PPPs as a form of cooperation between the PA and the private sector finalized at the realization of infrastructures or the management of services. In Such cooperation the risks connected with the activities are shared based on the management capabilities of each party.

PPP constitutes a multidisciplinary process that has to be managed by the PA through careful planning, close monitoring and verifying activities using various managerial tools. The fields that constitutes a PPP are (Dalla Longa, 2017):

- European, National and business law
- Administrative procedures
- Accounting (both business and national)
- Financial and financing techniques
- Project and risk management
- Engineering, architecture, design, construction
- Facility management.

The PA must organize its demand defining what is needed and how these needs must be fulfilled. The demand for some services of infrastructure possess market like characteristics, meaning that the demand is subject to market variability.

Wang et al (2018), examined the academic literature on PPPs from a PA standpoint. They suggest that usually three theoretical perspective are used to analyse PPPs. Firstly, the economics framework is adopted, PPPs are examined using transaction cost theory, property rights theory and principal-agent theory to understand problems that arise from information asymmetry between the PA and the private subject as well as other problems. Secondly, PPPs are studied from a public management and policy perspective using New Public Management to assess competition mechanisms for infrastructures and public services. Finally, PPPs are analysed using a management framework. Stakeholder and risk theory are used to assess risk and reward mechanisms across the different parties of the contracts.

1.3. Types of PPP

Dalla Longa (2017) defines various typologies of PPP contracts depending on the contract and object characteristics.

1.3.1. PPP/outs

This category refers to PPP contracts that are linked to outsourcing but still include the life cycle approach; moreover, the procurement is connected to the

whole process. PPP/outs are identified by a long-term contract (LTC) and the loss of autonomy by the PA that controls and verifies the private activities. There is a labile difference between a PPP/out and a normal outsourcing contract, this edge is the reduction of the autonomy of the private that is reduced by the control and verification systems of the PA.

1.3.2. PPP/gen

PPP/gen refers to general types of PPP and can be related to project and services of urban development (Bult-Spiering & Dewulf, 2006), social services and welfare management (Bazzoli, et al., 1997) and other high labour services where the key reference are the users such as various healthcare activities. There are various conditions required to transform a public-private mix (PPM) into a partnership such as collaboration, cooperation and co-management (Wettenhall, 2010).

1.3.2.1. PPP/soc

This type of PPPs is connected to social, welfare and no-profit types of intervention, usually it can be considered as a sub-category of PPP/gen.

1.3.3. PPP/ooppinf

This type of PPP refers to infrastructures and the complete process, from the ideation to the end of the life cycle. Within this category relies the distinction between social infrastructures (SI) and economic infrastructures (EI). The PPP represents the breakdown and subsequent re-assembly of the parts that constitute the life cycle of an infrastructure or a public asset. The PA has to manage the whole process creating tools to monitor and verify each phase and how it interacts with the other ones. Moreover, there are various multi-disciplinary aspects that must be considered such as the financial component, the profitability as well as the social value of the investment, the technical feasibility and the risk management.

1.3.4. PPP/immob

The PPP/immob refers to real estate interventions, mainly for urban renewal projects. The intervention can include both the construction of new buildings as well as renovation and refurbishment of others. This type of PPP impacts city layouts and usually contains some aspects of the PPP/soc (Dalla Longa R. , 2010).

1.4. Types of private partner organization

The private partner can organize his intervention in the project through different organizational schemes depending on the nature and type of intervention.

1.4.1. Corporate financing

The project is financed on the balance sheet of the private firm that acts as a partner. The private will use all assets and cash flows of the existing company to guarantee for the additional debt required to finance the project. If the project fails all the assets of the company can be used as a source of repayment for the creditors (Finnerthy, 2007).

1.4.2. Special Purpose Vehicle

A special purpose vehicle (SPV) or special purpose entity (SPE) is defined as a "fenced organization having limited predefined purposes and legal personality" (Sainati, Brookes, & Locatelli, 2016). Using this option, the new project and the existing firms are separate entities. If the project fails, the creditors have basically no claim over the asset and cash flow of the sponsoring firm. Using an SPV the project itself is incorporated as into a new economic entity with limited liability (Finnerthy, 2007). It is through the SPV debt that the state can consider the project as off balance, if the risks are transferred to the SPV for the entire duration of the project. The sponsoring firm reduces its exposure risk with respect to corporate financing, contributing through equity capital to the investment (Dalla Longa, 2017). The SPV is also useful to creditors since they

can better manage and secure cash flows deriving directly from the project. Indeed, the SPV allows sponsors, creditors and the PA to isolate the project. The SPV has a tight relationship with stakeholders and stockholders that represent different weights and relationship relevance within the project (Dalla Longa, 2017). Using this perspective, the SPV becomes an agreement among different subjects such as project sponsors, the PA, financing institutions, suppliers and users. Moreover, the capital structure of the SPV can vary over time: for example, the construction firm, once the construction phase is terminated can leave the society and the residual debt; this change in the capital structure is subordinated to the agreement of the PA (Dalla Longa, 2017).

1.4.3. Temporary association of companies

The Italian law ruled the temporary association of enterprises (Associazione Temporanea di Imprese. ATI) through the Law n 406/1991 transposing the EEC Directive n 89/444. This organizational scheme allows companies to realize operations not achievable by the single firms if considered on their own, achieving higher returns and increasing efficiency (Gentilini, 2005). Companies can participate to a tender without the cost of constituting an SVP or a consortium.

The bid is presented to the PA by only one of the companies that takes on the role of group leader and will manage relations among the ATI firms and the other contracting party. Presenting the bid, the companies assume joint liability towards the PA. Moreover, the ATI composition cannot be altered after the presentation of the bid for the tender (Fawkes, 2007).

1.4.4. Energy Service Companies

The EU Directive 2006/32/EC defines an energy service company (ESCO) as an organization that provides its clients with energy services relating to the physical benefit, utility or good that people derive from energy. These services are provided through 5 to 25 years long-term contracts divided in two main

categories: energy performance contracts (EPCs) and energy supply contracts (ESCs) (Fawkes, 2007).

Figure 1.1 illustrates the different level of supply of these contracts. An ESC provides useful energy through steam or hot water, a coolant or electricity, these energy streams have already undergone the first energy conversion phase; the customer is usually charged per unit of energy (Sorrell, 2007).

An ESC provides final energy services that have already undergone the second energy conversion phase so that they can be enjoyed directly by customers that are charged a fixed price for an agreed level of service (Marino, Bertoldi, & Rezessy, 2010).

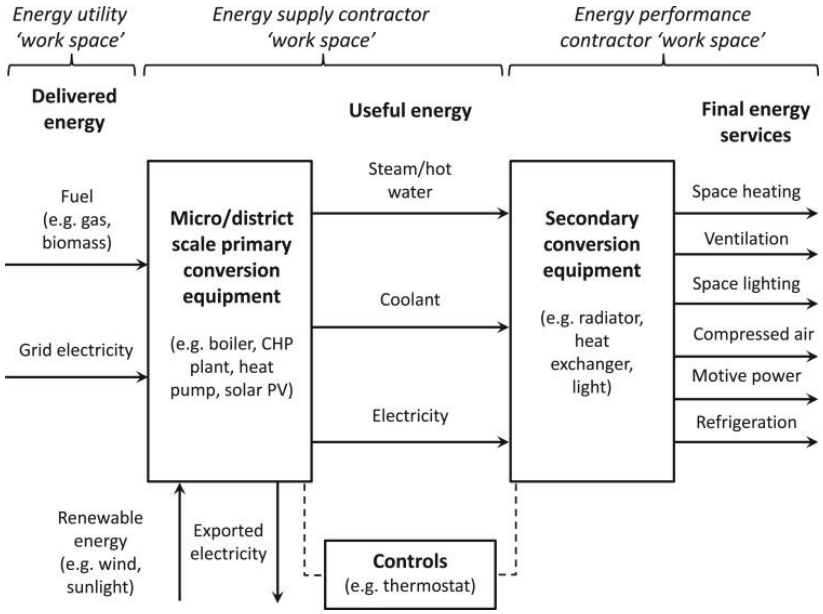


Fig. 1.1 Supply chain collocation of ESCs and EPCs (Sorrell, 2007)

The ESCO analyses the current situation and defines the intervention actions to improve the energy efficiency of the system.; moreover, it sustains the investment costs bearing the risk of the missed energy savings. The ESCO remuneration is directly connected to the energy savings of the user; the ESCO also finances the investment for the PA through third-party financing (TPF) (Federazione Italiana per l'uso Razionale dell'Energia, 2018).

2. KEY ELEMENTS OF A PPP

2.1. Risk

Risk is defined as an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective (Project Management Institute, 2000).

Risks in a PPP varies depending on the country where the project is carried out, the nature of the infrastructure and the services provided. Nevertheless, some risks are common across the spectrum of PPPs. Such risks are grouped in macro-categories associated with a process phases (World Bank, 2017).

Risks should be transferred to the stakeholder who has the best management capability over that risk. To identify the right stakeholder, the PA should verify the capability of each partner in the project to adopt the best measures to mitigate and prevent the negative effects of a risk (ANAC, 2018). The allocation and sharing of risk are key elements of a PPP. Osei-Kyei and Chan (2015) argued that an appropriate risk allocation has been identified as a critical success factor to PPP success in various cross-country studies.

The high level of uncertainty regarding PPPs is an obstacle to risk transfer due to higher risk premiums required to address volatility. This risk premiums increase project cost, and to reduce them the PA is forced to “overwrite” the agreements to include detailed and complete provisions if contractual terms for changing variables (Cruz & Marques, 2013).

2.1.1. Operating Risk

The operating risk includes the other 3 risks: construction, demand and availability. This risk derives form factors outside the control of the parties, differentiating itself from other risks that are caused by bad management or contract breaches of the private; these risks are already regulated in the discipline

regarding public procurement contracts therefore, they are not relevant for defining a contract as a concession (ANAC, 2018).

The following paragraphs contain the list of risks identified by ANAC to guide the PA in the definition of various contracts to ensure that the risks are correctly transferred to the private, so that the project debt can be considered off-balance.

2.1.2. Construction Risk

The construction risk, besides the risk directly connected with the construction itself comprehends:

a) **Design risk**: the risk connected to the persistence of required design changes due to original design errors or oversights, that can significantly impact project time and cost;
b) **Construction non-conformities risk:** the risk that the built infrastructure is different from the design standards;
c) **Production factors risk:** the risk that there is a cost increase or unavailability of the design production factors;
d) **Time/Cost estimate risk:** the risk of errors in the construction cost budget or time schedule;
e) **Subcontractors breaches risk:** the risk of breaches of contract by sub-contractors;
f) **Technological risk:** the risk of unreliable or inadequate technologies.

In contracts that embrace the whole life cycle of the infrastructure problems regarding this type of risk might be overrun by the private. The consequences of the risk will be delayed by the private to the operation and maintenance (O&M) phase in which inefficiencies and increased maintenance costs might be used by the private to ask for a renegotiation of the contract (Dalla Longa, 2017). To avoid these critical situations the PA must have a high level of awareness during the whole life cycle of the project and use managerial tools to ensure the transfer of risk to the private, especially in the case of SI (Dalla Longa, 2017).

2.1.3. Demand Risk

Demand risk (or market risk) refers to fluctuations in the demand level it includes two specific risks:

a) **Market demand risk:** the risk of a contraction in the global demand for that service or infrastructure;
b) **Specific demand risk**: the risk of a contraction in the demand for the specific service or infrastructure caused by new entrants in the market and subsequent rise in competition.

Demand risk is usually not present in SI such as schools, hospitals and prisons, therefore, in such cases to consider the contract as a PPP availability risk must be transferred to the private to consider the contract off-balance.

2.1.4. Availability Risk

The availability risk is defined as the risk related to the ability of the private to fulfil its contractual obligations regarding both quantity and quality. Some risks included in this category are:

a) **Un-planned maintenance risk**: the risk of extraordinary maintenance intervention caused by lacking design or construction activities with a subsequent cost increase;
b) **Performance risk**: the risk that the infrastructure or the services do not comply with the key performance indicators (KPI) defined in the contract with a subsequent reduction in revenues;
c) **Un-availability risk**: the risk of complete or partial unavailability of the infrastructure or interruption of the services.

2.1.5. Other Risks

Besides the 3 main risk categories ANAC provides a list of risk that span over the entire life cycle of the contract:

a) **Non-approval risk:** the risk of non-approval of the project by key stakeholders or other public authorities with subsequent delays in the realization of the infrastructure and, in some cases with the complete stop of the project itself;
b) **Administrative risk:** the risk of delays in administrative procedures by public and private subjects with subsequent project delays.
c) **Expropriation risk:** the risk of delays caused by expropriations or higher expropriation costs cause by errors in the estimates or design;
d) **Environmental or Archaeological risk:** the risk connected to soil conditions and subsequent decontamination, or the risk connected to archaeological findings and subsequent necessary protection measures causing delays and cost increases;
e) **Regulatory-political risk:** the risk deriving from changes in relevant regulations and changes in political decisions not regulated within the contract, with subsequent cost increases or, in extreme cases, complete stop of the project;
f) **Funding risk:** the risk of a lack of financial closure after the bidding procedure, it can lead to several delays and in some cases to the stop of the whole project. This risk might be mitigated during the selection phase using a competitive dialogue and through careful and realistic estimates of the financial side of the project (Dalla Longa, 2017);
g) **Financial risk:** this risk category includes various risks connected to financial variables in the project:
    a. **Interest rate risk**: the risk of an increase in interest rates and a cost rise that is higher for higher levels of debt-leverage. The project is particularly vulnerable to this risk during the construction phase due to the lack of revenues and the increasing debt exposure as construction progresses (Gatti, 2008). A mitigation strategy to address this risk is a comprehensive coverage of variable rate loans during the construction phase;

b. **Exchange rate risk:** this risk exists if some project cash flows are stated in a different currency than the SPV one. This risk is stronger in international project where cost and revenues are computed in different currencies. Risk coverage strategies include currency matching were possible, otherwise various financial instruments such as currency swaps or options on exchange rates can be used to transfer the risk to a financial intermediary (Gatti, 2008).
c. **Instalment risk:** the risk of missed payment of one or more financing instalments with subsequent cost increase, or complete stop of the project;

h) **Insolvency risk:** the risk of insolvency of the subjects that must pay the services provided;
i) **Industrial Relationships risk:** the risk connected with relationships with other subjects that might have a negative influence on time and cost of the project;
j) **Residual Value risk**: the risk that at the end of the contract, during the transfer phase, the infrastructure or systems have a lower value than what is expected;
k) **Technical Obsolescence risk**: the risk of an earlier technical obsolescence of the systems that might have an impact on the maintenance costs, and on the established technical and operational standards;
l) **Interference risk**: the risk of interferences of other services connected to the presence of various other services (e.g. water, gas, electricity, cables, optic fibre, etc…) in the construction site.

Moreover, besides the list of risks defined by ANAC (2018), there are various other possible risks:

m) **Ecological risk:** the risk that the project might have any potential negative impact on the environment;

n) **Innovation risk:** the risk connected with innovative solutions that have not been yet properly tested;
o) **Activity planning risk:** the risk connected with the timing and resource estimates for each project work package. The logical links among the work packages define the project graph, therefore they must be carefully analysed. The use of grid analysis techniques such as the critical path method (CPM) and project evaluation and reviewing techniques (PERT) can be beneficial to mitigate this risk.

2.1.6. Risk Matrix

A critical part of the PPP contract is the risk matrix; this document is necessary to regulate ex-ante the allocation of risks and, therefore, the procedures and limits of revision of the financial and economic conditions of the contract (ANAC, 2018). Moreover, this document must refer to each specific contract article that regulates each risk.

The PA should define the risk matrix during the initial phase of the project to assess the benefit of a PPP with respect other alternatives and to gain stronger contractual power (ANAC, 2018).

2.2. Contractual Form

PPPs are long-term, risky and complex contracts therefore they are usually incomplete and cannot comprehend and predict every possible future condition. Therefore, they must have some form of flexibility built in to deal with uncertainty and variable conditions within the contract boundaries, avoiding renegotiation and termination (World Bank, 2017).

PPPs can assume several contractual forms including: build, operate and transfer (BOT); design, build finance and operate (DBFO); design build finance and maintain (DBFM) (Dewulf & Wright, 2009). These PPPs have three major differences with respect to traditional procurement contracts: the private is

responsible for the entire life-cycle of the provision; the PA defines the quantity and quality of services required rather than the precise assets, the contract specifies the output and the required performances; there is a relevant risk transfer to the private (Bult-Spiering & Dewulf, 2006); (Ball, Heafy, & King, 2000).

Moreover, such contractual forms differ also depending on the type of infrastructure: the concession type agreement is used for EI; while, the performance PPP is used for SI.

2.2.1. Construction Leasing

The PA can finance an investment through construction leasing, this contract fulfils two needs of the administration: the need for the infrastructure or public works and the need of financing due to the lack of funds to directly pay for the investment (Bosetti & Gatti, 2018). Construction leasing is defined and regulated by the Italian legal system in the article 187 of the legislative decree 50/2016. The leasing operation can be recorder in the state accounts using two methods, the financial criterion and the property criterion.

The property criterion assumes that the contractual risks are transferred to the private party; the instalments will be written as a rent for usage of a third-party in the income statement and the State debt stock will not increase. Once the leasing agreement is over the asset is transferred to the PA.

The financial criterion is defined by the IAS 17 accounting standard. The asset is written in the balance sheet at the construction cost after the completion test. Depreciation results from the economic life cycle of the asset or from the duration of the contract. The debt stock is reduced with the leasing instalments considering both the principal and the interest.

2.2.2. Long-term

The long-term relationship between the contractual parties is needed due to the investment of the private. The private should be able to adopt a life-cycle cost

approach to the project. Furthermore, the duration of the contract is a critical parameter of the partnership and must be carefully evaluated to address incentive problems (Danau & Vinella, 2015). Usually, a longer time-horizon is better for the private since it is easier to recover investment costs and gain better returns. Otherwise, if the contract period is too the bid might receive no proposals; or the private investor might increase service fees, in the case of an EI or, for a SI, be forced to ask for contract renegotiations. Therefore, the risk of a short contract duration is shifted either to the users of the facility either to the PA (Ng, Xie, Cheung, & Jefferies, 2007).

The duration of the contract depends on various risks. A variable duration might be implemented: the period might be extended if some risk factors happen, while it might be shortened if the same risk factors are better than expected (Carbonara, Costantino, & Pellegrino, 2014). Moreover, two different modelling approaches have been used to compute the optimal contract duration: a deterministic approach and a stochastic one. The deterministic approach is used in models that do not take consider uncertainty that affect long term input variables as well as risk factors. In the stochastic approach uncertain variables are modelled through a statistical distribution and the contract duration is computed using simulation techniques such as the Monte Carlo simulation (Carbonara, Costantino, & Pellegrino, 2014).

The stochastic modelling of the variables is also useful in the negotiation phase of the contract since results from the simulation, such as the sensitivity analysis for interest rate, can be used to achieve win-win compromises on key contract variables.

PPPs generally involve large infrastructure investment over a time horizon above 20 years. This long duration requires forecasts and assumption on macro-economic variables to forecast demand and estimate costs. Despite the improvements in in forecasting models there will always be high unpredictability in estimates for periods over 10 years (Cruz & Marques, 2013). The creation of long PPP projects is permeated with risks derived from uncertainty regarding the

macroeconomic scenario, technological innovation and competition from substitute services (Shen, Platten, & Deng, 2006).

Cruz & Marques (2013) argue that if uncertainty is considered as an assumption rather than as a threat managerial flexibility for the PA can lead to an increase in project value. The examined PPP contract is divided into two sections: a 30-year agreement for B and O&M and a flexible contract with shorter duration for other services that is re-bid every 10 years. Re-bidding allows to capture the benefit of competition to adapt to the evolving conditions as well as avoiding the "quite life" by the private.

2.3. Project Management

The PPP process has a multidisciplinary nature; various fields interact during the process, influencing each other. The fundamental discipline to integrate and manage this complex process is project management (Dalla Longa, 2017). Project management tools are required to monitor the construction process as well as the administrative procedures that are required during the pre-tender phase. Risk management practices must be adopted to define and categorize risks within the process. The PA has also to design tools that will be a critical part of the contract and will be vital over the whole life-cycle of the project to monitor the transfer of risk and will provide an objective performance measure tightly related to payment variations.

2.4. Performance requirements

The PA has a key role in the PPP contract: it defines and organizes the demand for assets and services. Therefore, the demand should be expressed in terms of quality and quantity of the assets and services provided by the private clearly stating expected standards of performance (World Bank, 2017).

Moreover, the performance requirements should be specified in required outputs (i.e. road surface quality), instead of inputs (i.e. road surfacing material and design) when possible. This practice fosters the ability of the private to innovate in fulfilling the requirements set out by the PA (Farquharson, Torres de Mästle, Yescombe, & Encinas, 2011). Furthermore, outputs specification keeps the competition open, reducing the opportunities for corrupt practices.

2.5. Payment Mechanism

The payment mechanism defines the remuneration scheme of the private within the PPP contract. The World Bank (2017) outlines three main elements that can constitute a PPP payment mechanism:

- User Charges
- Government payment
- Bonuses and penalties

A PPP contract might include some or all these remuneration schemes, nevertheless it must be defined in the contract.

2.5.1. User Charges

User charges are payments directly collected by the private from the users. They are usually linked with concession contracts that have as the object an EI. Due to the monopoly nature of said infrastructure tariff adjustments and structure become critical tools to allocate risks (World Bank, 2017). Moreover, it is necessary to examine the capacity and willingness to pay of the users and estimate the price elasticity of the demand (Zlatkovic, Vajdic, Tica, Mladenovic, & Queiroz, 2017). Roumboutsos and Saussier (2014) argue that the private will try to set higher tariffs to reduce the number of users while maintaining the same level of revenues and, at the same time, reducing O&M costs and increasing profitability. The PA instead will try to set lower tariffs to allow more users to access the service or the infrastructure increasing social benefit.

2.5.2. Government Payments

The PA can directly pay the private for services or assets, this payment scheme usually refers to PPPs that have as the object a SI. The payments could be usage-based (shadow tolls); availability payments linked to performance measures or upfront subsidies based on the achievement of agreed milestones. The definition of this payment scheme has strong implication on the risk allocation: a usage-based mechanism implies that the demand risk is allocated to the private or shared with the PA (World Bank, 2017). Moreover, to ensure the risk transfer over the whole life cycle of the contract payments should be linked to defined performance measures and output indicators.

2.5.3. Bonuses and penalties

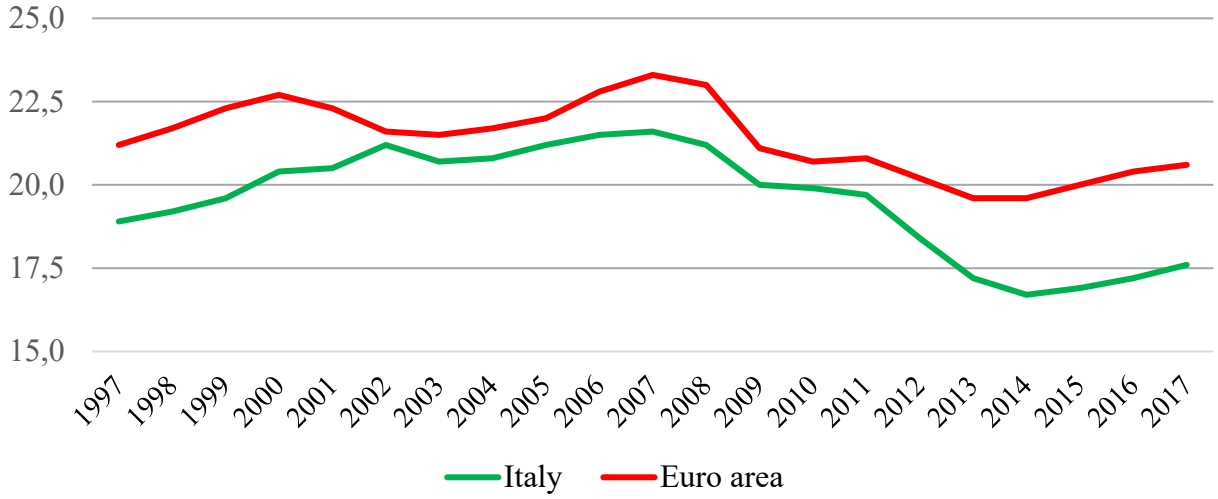
Both previous payment mechanisms can establish bonuses or penalties related to outcomes or events. Penalties are usually due if the key performance indicators (KPI) do not comply with the agreed standards or if the quality levels are not reached (World Bank, 2017).

3. PROBLEM STATEMENT

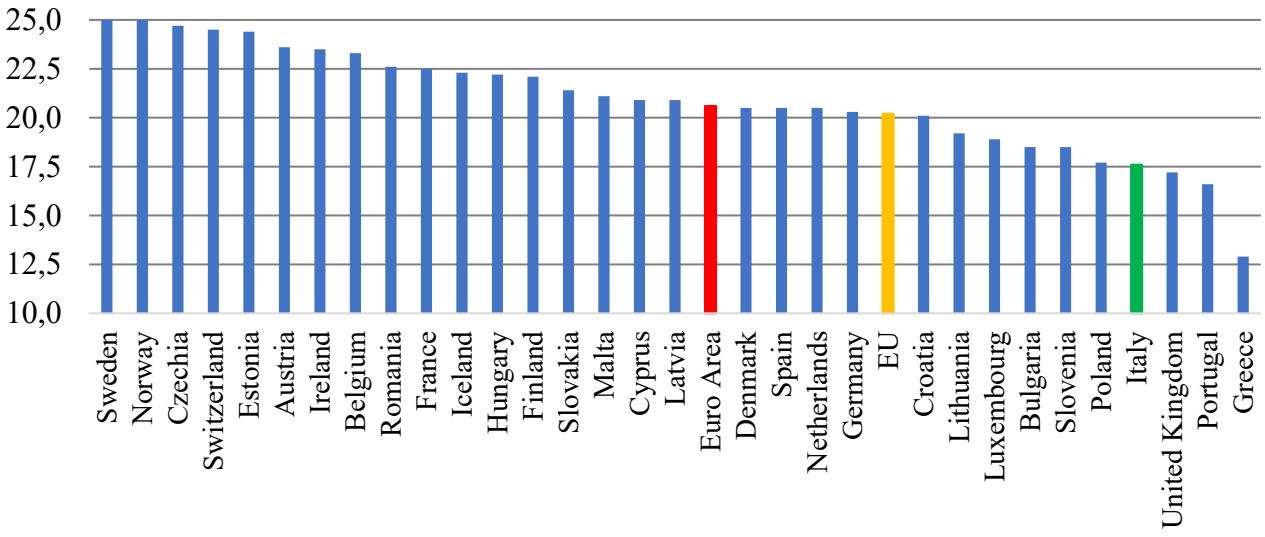
3.1. Investment

European investments started to recover after the fall caused by the financial crisis of 2008 but Italy remains behind due to its public debt and the consequent difficoulties in financing the required infrastructures and services to foster growth (Graph 3.1). Italian investment in the recent years have been lower than the European average (Graph 3.2), with the gap widening in the last 5 years.

Graph 3.1 Investment as a percentage of GDP (Eurostat, 2018 a)



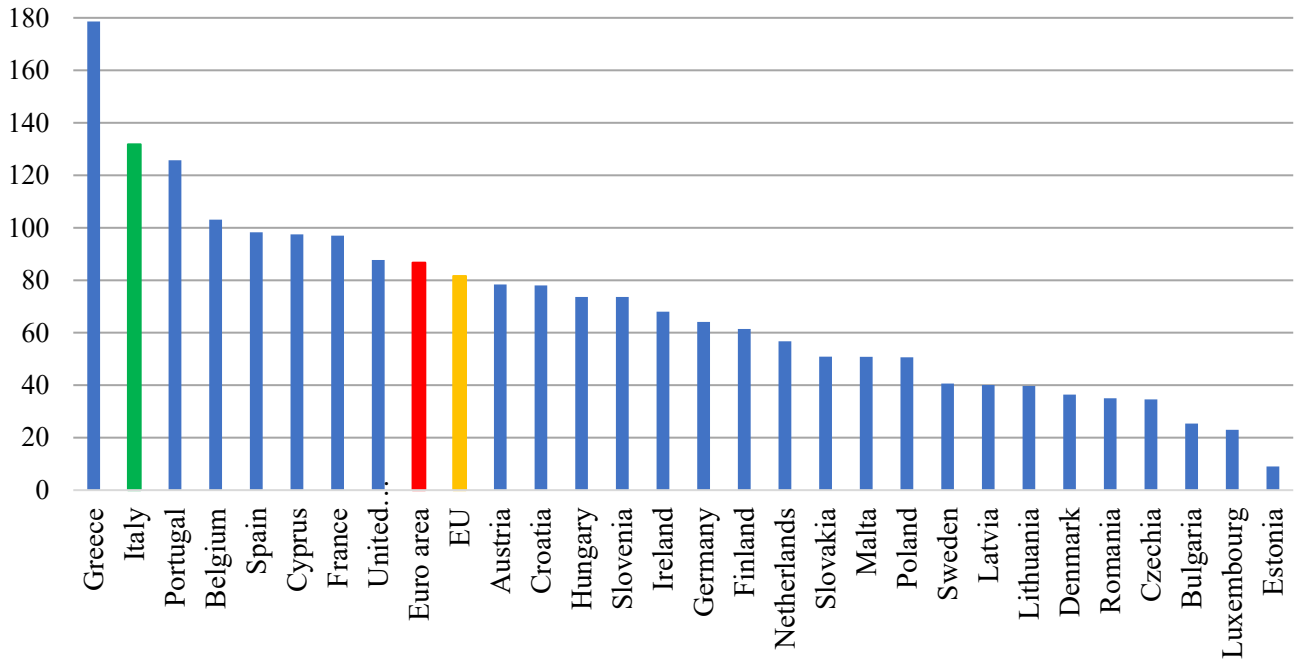
Graph 3.2 Investment Levels by EU member states (GDP %), 2017 (Eurostat, 2018 b)



3.2. Public Debt

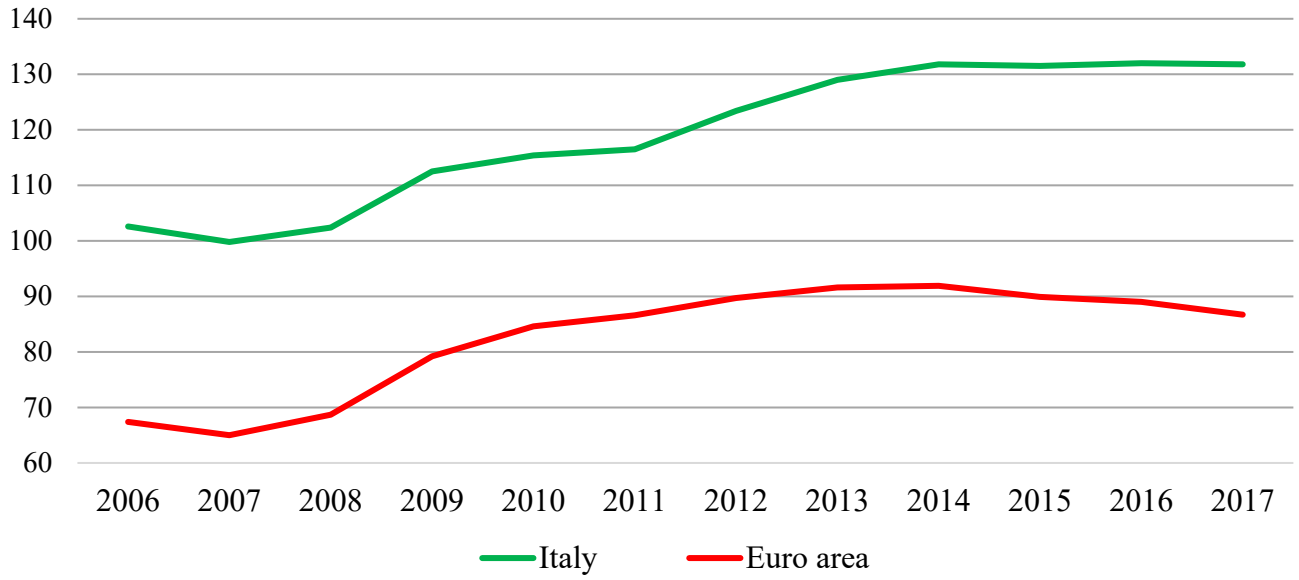
The EU members committed to reduce their public debt with the Treaty on Stability and Coordination in the Economic and Monetary Union (TSCG) limiting the possibility to finance projects and infrastructures *on-balance*. The provisions regarding the excessive deficit procedure (EDP) are regulated in the 2012 treaty on the functioning of the European Union (TFEU). The TFEU states that EU members must respect two criteria: a deficit to gross domestic product (GDP) ratio and a debt to GDP ratio that do not exceed the values of 3% and 60% respectively (Eurostat, 2016 b).

Graph 3.3 Public debt as a percentage of GDP, 2017 (Eurostat, 2018 c)



Therefore, various countries within the EU started to implement off-balance investment policies to comply with such parameters while maintaining a healthy level of investment.

Graph 3.4 Public debt as a percentage of GDP (Eurostat, 2018 c)



Graph 3.4 shows the rise of the public debt after the financial crisi of 2008, in recent years the Euro area started reducing the public debt while Italy lags behind with the gap widening.

Therefore, to foster new investment and growth, it is necessary to develop the managerial capabilities required to monitor and control compex off-balance projects. Moreover, it is necessary to create tools that allow the PA to acquire a multi-disciplinary perspective while overcoming the traditional functional structure that characterizes the institutions. Such tools should facilitate the creation of various links across the process phases and functions proving managerial guidelines to the stakeholders.

Furthermore, the tools should focus on risk management and risk transfer monitoring since they are critical factors for the PA during project development. The tools must include the criteria for off-balance contracting set out by Eurostat transfering both the knowledge and the mindset of project management to the institutional stakeholders.

4. ASSEMBLY

Assembly refers to the design, creation and management of the entire contractual process, from the ideation to the end of the life cycle (Dalla Longa, 2017). The term can refer to the value and power allocation within the global finance (McKeen-Edwards & Porter, 2013). Traditionally it refers to the production of final products through the assembling of sub-components that were built in different times and places (Warnecke & Hueser, 1994). With respect to the construction industry Pratt (2011) refers to the assembly process as the whole project sequence. Therefore, assembling in the PPP context refers to the whole life cycle approach, and how each single part and discipline should fit together and be considered as integrated to avoid creating asymmetries and unbalances.

The assembly concept within the PPP landscape changed over time reflecting the dynamic relationship between the market and the State, and consequently within a single contract, between the PA and the private.

Two critical layers overlap in a PPP assembling process: one refers to project management and long-term contract and the other one to the public finances. PPPs became attractive to the PA due to the possibility of financing various infrastructures through private capital, without expanding current state debt.

4.1. Assembly evolution

The phases of the evolution of the assembly concept corresponded to the evolution of the legislation on public procurement.

4.1.1. Design-assembly

During the second half of the 20th century the focus was on design-assembly: the PA was responsible for the integration of the various service components through single tender procedures. Works, services and supplies were the main components and each tender was regulated by a specific law. Moreover, the PA

was in charge of meeting the demand for public services through individual interactions with each supplier of the fundamental components, designing the assembly of each service or infrastructure (Dalla Longa, 2017). This phase was focused on technical and engineering professions as well as the administrative one, such professionals belonged to the PA.

4.1.2. Introduction of PPP

PPP introduced a new option in the public procurement process. The process has to face not just the public demand organized by the PA (SI) but also directly to users through concession (EI). However, both the European and the Italian legislation confused operational payment and user pays without considering risk transfer and public investment in the project. This phase saw the introduction of finance, private capital, risk management, and both state and firm accounting discipline. Furthermore, the focus shifts towards management rather than technical capabilities.

4.1.3. Evolution of PPP

Currently there is a well-defined distinction between user pays (EI) and operational payments (SI). The PA organizes the demand for availability and the private meets such demand bearing the risk. With the D.Lgs. 50/2016 there is a clear cut between the EI that is regulated by a concession and the SI that is regulated as a component of a PPP. This evolution towards more complex contracting schemes requires new types of professional figures within the PA with a strong management capability and a multi-disciplinary background.

4.2. Project team

The complexity of the PPP process, as well as the other contractual arrangements, and the managerial capabilities necessary to assemble it require a team of people with multi-disciplinary capabilities coordinated by a project manager. The Italian legislation identifies the figure responsible for the whole

enterprise as the Sole Responsible Project Manager[1] (RUP). This figure has to coordinate the project team within the PA and manage the whole contractual process defining the tools and control mechanisms to govern the contract (Dalla Longa R. , 2010). The RUP has to facilitate integration of the project defining its scope (PMI, 2013) and overcoming the fragmentation inherent in the assembly processes within the PA.

4.3. Organizational Structure

The progress of PPP and other advanced contractual forms required to develop infrastructures requires new and different assembly practices. This development cannot fit with the endemic fragmentation of the functional organization structure inherent in the PA scheme. A project-based structure is required to cope with the challenges posed by these new contractual forms. This structure allows the creation of multi-disciplinary teams to carry out all the phases of the project providing new members with different backgrounds when needed.

Dalla Longa (2017) states that projects, with their public and private component, and interconnections among them will substitute functional organizations. This is already happening in PPP projects where the project teams, both the PA one and the private one, manage the life-cycle of the infrastructure. This drastic change in the environment requires the adaptation of the PA that has to acquire strong PM capabilities. The project manager of public infrastructures will be a strategic role in the transformation since it will bring capabilities and knowledge within the PA.

[1] This figure is defined by the Italian Legislation D.lgs 50/2016 as the Responsabile Unico del Procedimento (RUP)

5.STATISTICAL TREATMENT

The statistical treatment of PPPs refers to the recording of the debt required to develop a PPP project on or off governments' balance sheets, that is either with or without an impact on government debt (Eurostat, 2016 a).

This is a critical issue for all stakeholders, especially in the European Union since the PA lacks the funds to finance the high demand for public infrastructures through regular tenders. Therefore, authorities try to engage private capital and knowledge to meet this demand.

Eurostat differentiates between PPPs and concessions. In a concession contract the final users pay directly for the project. In a PPP contract the main source of revenue for the private are government payments. Eurostat (2016) states that in order to consider the debt of a contract *off-balance* at least 2 types of risk must be transferred to the private for the entire duration of the long-term contract.

5.1. Concession

In a concession contract the construction risk and the demand risk must be transferred to the private. In this case the public infrastructure can be defined as an economic infrastructure (EI) (Dalla Longa, 2017). Examples of said infrastructure are toll roads and parking spaces: the users decide whether to use the infrastructure and pay the toll directly to the private or the fee if they judge that such cost is fair; doing so they let the private recover the investment and turn a profit. In this case the contract can be defined as a concession.

5.2. PPP

In a PPP contract the PA has to organize the collective demand and pay the private party operation payments, the infrastructure is defined as a social infrastructure (SI) (Dalla Longa, 2017). In this case both the construction risk

and the availability risks must be transferred to the private. Due to the nature of such investments the PA has to make higher efforts in analysing and organizing the demand; moreover, the PA must make higher efforts in monitoring the transferring of risks through specific managerial tools (Dalla Longa, 2017).

5.2.1. Availability based payment

PPPs use two main configurations of the availability payment mechanism. The first one is to define the operational payment that correspond to 100% availability of the asset and 100% service performance, adjusting the amounts based on quality of the service and unavailability. The second one is basing the operational payments on the number of components of the asset that are made available, and to adjust the amounts with respect to service performance. Moreover, at the extreme zero availability of the asset must correspond to no payment received by the private (Eurostat, 2016 a).

The PPP contract defines the asset availability that sets the standard for the unavailability deductions. The contract can also contain provision stating that a component's unavailability corresponds to the whole asset unavailability due to the nature of the component (e.g. the hospital is deemed unavailable if the operating theatres are unavailable) (Eurostat, 2016 a). Besides availability standards the contract also defines service performance standards.

5.2.2. Demand based payments

Some PPPs implement demand-based payment schemes that compute the operational payments through the level of asset use; in the extreme case of no demand the PA should correspond no payment to the private otherwise the debt will be considered *on-balance* (Eurostat, 2016 a). Moreover, the operational payments should be proportional to the level of asset use and provisions that contain different unit-prices for different levels of demand should be implemented carefully since they can undermine the risk transferring principle, de-facto guaranteeing revenues to the private.

5.3. EPC

EPCs could fall within the scope of the Eurostat definition of PPPs when the improvements in energy efficiency are achieved through refurbishment, renovation and upgrade of an infrastructure. The PPP rules state that the contract is considered a PPP if the amount of capital expenditures for the refurbishment represents more than 50% of the value of the asset after the completion of the works (Eurostat, 2018 d). For the contract to be considered as a PPP the 50% threshold must be met and the private must be remunerated on the basis of the availability or demand for the infrastructure. On the other hand, in EPC the private has to be remunerated on the basis of energy consumption and cost savings generated through the refurbishment and the other works performed.

Eurostat (2017) states that if the EPC contractor bears most of the risk and rewards related to the performance and the maintenance risks, then the economic ownership of the underlying assets is of the private. Therefore, the debt required to finance the EPC investments can be considered *off- balance*. However, if there are provision within the EPC for the sharing of extra savings with the PA or if there are minimum revenues provisions the debt must be considered *on-balance*.

6. RISK TRANSFER GUIDE

Eurostat published two guidelines to define the influence of the most common provision contained in PPPs and EPCs with respect to their statistical treatment. A useful step towards the implementation of these guides is to create a table containing the provisions that do affect the statistical treatment of the contract defining which risks are transferred. This tool can be used successively in the creation of a dynamic risk matrix and during the definition of the contract itself.

Moreover, the table can be also used during the assessment of the statistical treatment of the contract by auditors of the PA balance sheets.

The table is structured following the framework set out by Eurostat in the Guides for the Statistical Treatment of PPPs and EPCs. This tool can be very useful because it directly links each contract provision to the risks that are regulated within the provision itself. Furthermore, Eurostat defines the level of importance of each provision for the statistical treatment of the contract using a 4-level scale (Automatically on balance, Very High Importance, High Importance, Moderate Importance). The criterion for assigning the level of importance to each provision is the relevance of the provision itself for the statistical treatment of the contract. This relevance is defined by Eurostat according to the magnitude of risk transfer (or non-transfer) that each provision implies.

Using various levels of importance for the statistical treatment has two main functions. The first one is to provide to the controlling functions of the PA an objective assessment tool to evaluate the statistical treatment of each contract as a whole and examining each single provision. The second one is to help the PA during the definition of the contract and the negotiation phase to evaluate each provision and possible modifications with respect to the effects on the statistical treatment.

6.1. PPP

6.1.1. Design and construction of the Asset

Provision	Guide Code	Risk Code	Criteria	Automatically On Balance	Very High Importance	High Importance	Moderate Importance
Theme 2: Design and construction of the Asset							
Responsibility for Design	2.1	2.1.2.a	Approval of Design by the PA should not influence risk transfer			x	
Construction Completion	2.3	2.1.2; 2.1.2.a; 2.1.2.b	Construction Completion Criteria must be i) objective and clearly set out in the PPP contract ii) Robust			x	
Construction Completion	2.3	2.1.2; 2.1.2.b	Operational Payments for a completed phase must be i) linked to a component of the asset that can be used independently ii) proportion of the Operational Payments must be proportional to capex for that phase			x	
Snagging Works	2.4	2.1.2; 2.1.2.b	Snagging works can be excluded from the completion criteria tests if such works do not affect the availability of the asset			x	
Partner Reimbursement of Authority costs	2.5	2.1.2; 2.1.2.a; 2.1.5.b	Reimbursement payments must cover clearly identifiable costs incurred by the PA in direct connection with the project			x	

6.1.2. Operation and Maintenance of the Asset

Theme 3: O&M of the Asset							
Responsibility for O&M	3.1	2.1.4; 2.1.4.a; 2.1.4.b; 2.1.5.k	The PA must not take any responsibility for maintaining and/or replacing any component of the asset			x	

O&M standards	3.2	2.1.4; 2.1.4.b; 2.1.4.c	The standards to which the private must operate and maintain the asset must establish conditions in which the asset is genuinely capable of being used and the regime for monitoring and reporting the private's performance against those standards must allow the PA to sanction the partner for non-performance	x			
Maintenance plan	3.3	2.1.2.a; 2.1.2.b;	The PA approval must not remove or reduce the private's liability for deficiencies in the asset or service delivery			x	
Maintenance plan	3.3	2.1.4; 2.1.5.j; 2.1.5.k	The private must demonstrate that deferring maintenance will not have a negative impact on the condition of the asset, the services or the use of the asset				x
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not take risk in relation to the fund (i.e. contributing to the fund to meet actual maintenance cost incurred)			x	
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not take rewards in relation to the fund (i.e. taking a share of surplus in the fund if the partner spends less than anticipated)	x			
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not be entitled to any share in financial savings generated through the private's management of maintenance risk	x			

6.1.3. The Payment Mechanism – Availability-Based Payments

Theme 4.A: The Payment Mechanism - Availability-Based Payments							
Adjustments for unavailability and poor service performance	4.2	2.1.4; 2.1.4.c	The amount to be deducted for an instance of unavailability or poor service performance must be determined objectively applying the terms of the PPP; and if a deduction has been determined as due it must be applied without further negotiation	x			
Defining availability / unavailability	4.3	2.1.4.b; 2.1.4.c	The contractual standards used to define and measure the availability of the asset must establish conditions in which the asset is genuinely capable of being used	x			
Measuring availability and performance	4.5	2.1.4; 2.1.4.b;	The payment mechanism must not rely on self-reporting by the private, without the possibility for the PA of monitor or audit the reports			x	

Unavailability deductions	4.6.1	2.1.4	The proportionality principle in the payment deductions must be realised over a meaningful period	x			
Unavailability deductions	4.6.1	2.1.4; 2.1.4.c	The applications of weightings to individual components of the asset and different period of time must: i) reflect the use or functionality of the asset; ii) 0% weightings are used exceptionally; iii) be such that 0 availability will result in 0 payment			x	
Unavailable but used	4.6.6	2.1.4.c	"Unavailable but used" provisions must not reduce the availability deductions by more than 50%				x
Excusing causes	4.7.1	2.1.5.g	Provisions must not excuse the private for unavailability or poor service performance for events that are within the control of the private or events that capture changes in macro-economic conditions			x	
Grace periods	4.7.2	2.1.4	Grace Periods that apply no availability deductions (or a reduced amount of availability deductions), for any project with an Operational Phase of 20 years or longer, must be max. 6 months				x
Tolerances / de minimis exceptions for deductions	4.7.3	2.1.4, 2.1.4.c	Provisions that create a tolerance or de minimis threshold for unavailability deductions must have a negligible effect (i.e. the amount of the deductions that is not applied must not exceed the 1% of the Operational Payments			x	
Caps on deductions	4.7.4	2.1.4	Cap deductions must not undermine the principle of proportionality	x			
Adjustments for use	4.8	2.1.4	Provisions that reduce Operational Payments (that are 100% availability-based) must not reflect a lower level of use of the asset than anticipated			x	

6.1.4. The Payment Mechanism – Demand-Based Payments

Theme 4.B: The Payment Mechanism - Demand-Based Payments							
Banding	4.10.2	2.1.3.a; 2.1.3.b	The unit price for the highest-use band must not be set at zero or close	x			
Banding	4.10.2	2.1.3.a; 2.1.3.b	The unit price for the highest-use band must not be set at a nominal value which significantly limits the private's upside			x	

Banding	4.10.2	2.1.3.a; 2.1.3.b	The unit price for the lowest-use bands must not be such that the private will recover significant proportion of its cost at a level of demand that is significantly below reasonable forecasts			x	
Banding	4.10.2	2.1.3.a; 2.1.3.b	The unit price for the lowest-use bands must not be akin to a minimum use/revenue guarantee	x			
Minimum use/revenue guarantees	4.10.3	2.1.3.a; 2.1.3.b	The PPP contract must not contain any form of minimum revenue guarantee	x			

6.1.5. Other payment arrangements

Theme 5: Other payment arrangements							
Commencement of Operational Payments	5.1	2.1.2; 2.1.4	The contract must not force the PA to start making Operational Payments before the date on which the asset is complete	x			
Benchmarking and market testing of services	5.2	2.1.4; 2.1.2.f	Provisions for the adjustment of the Operational Payments following benchmarking and market testing of services must apply only to services that are secondary to the maintenance services required to make the asset available	x			
Benchmarking and market testing of services	5.2	2.1.4; 2.1.2.f	Provisions for the adjustment of the Operational Payments following benchmarking and market testing of services must apply no more frequently than every 5 years			x	
Benchmarking and market testing of services	5.2	2.1.2.f; 2.1.4.b; 2.1.5.k	The risk and benefit of cost increases and savings between each benchmarking of market testing process must be taken by the private			x	
Utilities Cost	5.3	2.1.4	The PA must not retain the volume risk on projects where the private controls the volume of utilities consumed in the use or operation of the asset				x
Utilities Cost	5.3	2.1.4	The PA must not retain the price risk on projects whose core objective is to deliver energy efficiency				x
Indexation	5.4	2.1.4; 2.1.5.g	Provisions for the indexation of Operational Payments must be based on an index or indices generally recognised in the relevant jurisdiction or sector				x

Third party revenues from the asset	5.5	2.1.3; 2.1.4	The third-party revenues that the PA is forecast to receive over the life of the contract exceed 50% of the payments that the PA is forecast to make to the private over the life of the contract	x			
Third party revenues from the asset	5.5	2.1.3; 2.1.4	The third-party revenues that the PA is forecast to receive over the life of the contract are below 50% and above 20% of the payments that the PA is forecast to make to the private over the life of the contract			x	
Third party revenues from the asset	5.5	2.1.3; 2.1.4	The third-party revenues that the PA is forecast to receive over the life of the contract are below 20% and above 5% of the payments that the PA is forecast to make to the private over the life of the contract				x

6.1.6. Compensation, relief and force majeure events

Theme 6: Compensation, relief and force majeure events							
Compensation, relief and force majeure events	6.1.1; 6.1.2; 6.1.3	2.1.2; 2.1.3.a; 2.1.3.b; 2.1.4; 2.1.5	Provisions by which the PA takes or shares the risk of events that affect the delivery of the project must: i) Include a finite number of well-defined events; ii) not capture changes in macro-economic conditions; iii) not be attributable to acts or omissions of the private; iv) not be reasonably foreseeable or estimable (this is to be assessed by reference at the level of due diligence carried out before financial close that is reasonably appropriate given the specific circumstances of the project); v) on project with demand-based operational payments, must not include a variation on the demand of the asset unless the variation directly results from identifiable government action.			x	
Quantifying compensation and/or relief	6.1.4	2.1.2; 2.1.3.a; 2.1.3.b; 2.1.4; 2.1.5	Provision for calculating compensation and/or relief must: i) not compensate or provide relief for anything other than the effects of the event in question; ii) calculate lost revenues on demand-based projects on current data; iii) exclude from any compensation due by the PA any amount that the private should be able to recover under the required insurances or under the normal terms of insurance that is available on commercially viable terms			x	

Public law doctrines on compensation relief and force majeure events	6.2	2.1.2; 2.1.3.a; 2.1.3.b; 2.1.4; 2.1.5	Analysis of the public law and jurisprudence might be required to ascertain whether it could result in the PA taking or sharing the risk of events which would influence the statistical treatment.			x	

6.1.7. Changes to the PPP contract

Theme 7: Changes to the PPP contract							
Change proposed by the PA	7.1	2.1.2; 2.1.3a; 2.1.3b; 2.1.4; 2.1.5	Provisions that give the private a right to claim compensation and/or relief for the consequences of complying with a PA change, and the method for calculating and paying compensation must be limited to addressing the effects of the PA change (i.e. thy must not indirectly compensate or relieve the private for its own poor performance or other risks)			x	
Change proposed by the private	7.2	2.1.5.g	The contract must not force the PA to bear the financial consequences of a private change proposal			x	

6.1.8. Changes in law

Theme 8: Changes in law							
Changes in law	8	2.1.5.e	Provisions that allocate change-in-law risk to the PA must not include the PA taking the risk of: i) changes in law that are foreseeable at the date of signature of the contract; ii) changes in law that are general in nature (i.e. they do not relate solely to the project or to the private or to similar project or business) and affect the general operating cost of business in the relevant jurisdiction				x

6.1.9. Insurance

Theme 9: Insurance							
Reinstatement of the asset	9.2	2.1.5	The PPP contract must not include an "economic reinstatement test" provision			x	

Insurance cost	9.3	2.1.5	Provisions that allow the PA to take or share the risk/benefit of changes in insurance cost in situations other than un-insurability must respect all the following conditions i) the PA takes or shares the risk that the insurance cost increase above a specified ceiling and/or the insurance cos fall below a specific floor; ii) the ceiling is set no lower than twice the amount of the insurance cost forecast at financial close; iii) the floor is set no higher than half the amount of the insurance cost at financial close; iv) if insurance costs increase above the ceiling, the PA is only liable for the difference between the actual cost and the ceiling; v) if insurance cost fall below the floor, the PA only takes or shares the benefit of the difference between the actual cost and the floor; vi) the provisions do not allow the PA to take risk and/or benefit of changes in insurance cost that are attributable to the actions of the private			x	
Un-insurability	9.4	2.1.5	Provisions that treat the unavailability of insurance must apply only in situations of disruption in the insurance market and not in situations where the insurance is unavailable because of the private's acts or omissions. The insurance market is assumed to be disrupted if: i) the insurance is not provided by reputable insurers in the market; or ii) the terms on which the insurance is available are commercially unviable such that entities similar to the private are generally not taking out the insurance			x	

6.1.10. Warranties and indemnities

Theme 10: Warranties and indemnities							
Indemnities given by the private	10.2	2.1.5	The limits or exclusions of the indemnities granted by the private must apply only to the private's liabilities for events: i) that are unforeseeable and are not covered under the normal terms of insurance that is available for the asset and services delivery on commercially viable terms; ii) that arise from matters that are within the scope of the PA's management or control; iii) for which the PA has another remedy against the private either under the PPP contract or law			x	

Indemnities given by the PA	10.3	2.1.5	Provision of an indemnity from the PA to the private can include only these risks: i) the PA's own acts or omissions; ii) acts or omissions of any third party that the PA manages or controls; risks that the Guide states can be taken by the PA without influencing the statistical treatment			x	

6.1.11. Early termination of the PPP contract

Theme 11: Early termination of the PPP contract							
PA default termination	11.2	2.1.5	Triggers for early termination for PA default must not result in the PA taking risks that, as stated elsewhere in the guide influence the statistical treatment			x	

6.1.12. Compensation on early termination of the PPP contract

Theme 12: Compensation on early termination of the PPP contract							
Approach 3 - Market value of the contract	12.1.3	2.1.4; 2.1.5	The market value of the contract approach must follow all these conditions:[2]	x			
Approach 4 - Book value of the asset	12.1.4	2.1.5	Provisions that calculate the compensation payable on private default on the basis of the book value of the asset must take into account the PA's remediation costs	x			
Approach 4 - Book value of the asset	12.1.4	2.1.5	If only some remediation costs are deducted from the book value of the asset calculation, the provisions do influence the statistical treatment			x	
Force majeure termination compensation	12.4	2.1.5	An approach that calculates compensation on termination for force majeure on the same basis as compensation on termination for Authority default or Authority voluntary termination influences the statistical treatment				x

[2] The conditions for this provision are reported at the end of the chapter.

6.1.13. Expiry of the PPP contract

Theme 13: Expiry of the PPP contract							
Allocation of the asset on expiry	13.2	2.1.4	Provisions (expressed or implied) that allocate the asset to the PA on expiry must meet these conditions: i) there is evidence that the private's forecast investment and lifecycle costs will be recovered through the revenues it will receive throughout the period of the PPP contract; ii) the Operational Phase is 10 years or longer				x
Conditions of the asset on expiry	13.3	2.1.4	Where responsibility for the asset will revert to the PA on expiry of the PPP contract, the private must take the risk that the physical condition of the asset on expiry of the PPP contract meets a standard that is consistent with it having been maintained in accordance with the contract			x	

6.1.14. Financing arrangements

Theme 14: Financing arrangements							
Interest rate adjustments	14.2	2.1.5.g.a	Provisions for adjusting the Operational Payments to reflect the interest rate must be set through the initial hedging process (whether at financial close or at a later key milestone during the Construction Phase)			x	
PA/government participation in financing	14.4	2.1.5.f	Government commitment of financing or any other support amounts to 50% or more of the capital expenditure to be incurred for the construction of the asset	x			
PA/government participation in financing	14.4	2.1.5.f	Government commitment of financing or any other support amounts to less than 50% but more than one third of the capital expenditure to be incurred for the construction of the asset		x		
PA/government participation in financing	14.4	2.1.5.f	Government commitment of financing or any other support amounts to less than one third but more than 10% of the capital expenditure to be incurred for the construction of the asset			x	
PA/government participation in financing	14.4	2.1.5.f	Government commitment of financing or any other support amounts to less than 10% of the capital expenditure to be incurred for the construction of the asset				x

Other forms of PA/government support	14.5	2.1.3.a; 2.1.3.b	Government support in the form of minimum revenue guarantees or minimum demand guarantees does influence the statistical treatment	x			
PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The right for the PA to withhold its approval to a proposed refinancing must not be withheld or delayed unreasonably if the grounds on which it can withhold its approval are limited to circumstances where the refinancing would have an adverse impact on the PA or on the performance of the project			x	
PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The right for the private to proceed with any refinancing without the PA's approval must not have the effect that the PA's liabilities under the PPP contract could increase without its prior consent			x	
PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The PA must not have the right to require the private to proceed with a refinancing	x			
Refinancing gains	14.6.2	2.1.5.g	The PA must not be entitled to more than one third of the refinancing gains if no assessment is made of whether the refinancing gain results from actions of the PA or the private or other factors	x			
Lenders' step-in rights	14.8	2.1.5	Provisions for lenders' step-in rights must not change the PA's rights or liabilities under the PPP contract before, during or after step-in				x

6.1.15. Government influence

Theme 15: Government influence							
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share of 50% or more of the private’s profit	x			
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than 50% but more than one third of the private’s profit		x		
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than one third but more than 20% of the private’s profit			x	
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than 20% but more than 10% of the private’s profit				x

PA step-in rights	15.3	2.1.4	If the PA has an obligation to pay the Operational Payments in full during the period of step-in these conditions must apply: i) deductions for unavailability and/or poor service performance up to the date that the PA steps in and after the date that the PA steps out are applied to the Operational Payments as envisaged for the normal operation of the contract; ii) the PA is entitled to recover its step-in costs from the private if the PA has stepped in because of the private's poor performance				x
Caps on private profit or revenues	15.4	2.1.3	The contract must not contain any provision that imposes a cap on the private's profit	x			
Caps on private profit or revenues	15.4	2.1.4	The contract must not contain any provision that imposes a cap on the private's revenue with a demand-based Operational Payments	x			
Caps on private profit or revenues	15.4	2.1.3; 2.1.4	The contract must not contain any provision that link the PPP contract expiry to the private having generated a specific amount of revenue or profit to be akin to a cap on private revenue or profit	x			

6.2. EPC

6.2.1. Specification, design, construction and installation of the EPC Assets

Provision	Guide Code	Risk Code	Criteria	Automatically On Balance	Very High Importance	High Importance	Moderate Importance
Theme 2: Specification, design, construction and installation of the EPC assets							
Responsibility for specification and design	2.1	2.1.2.a; 2.1.2.b; 2.1.4.a; 2.1.4.b	The PA must not take any risk under the EPC for: i) construction and/or installation delays or deficiencies; ii) increased construction, installation or maintenance/operating costs; iii) performance failures, that may arise as a consequence of developing reviewing and/or approving the specification and/or design			x	
Responsibility for construction and/or installation	2.2	2.1.2; 2.1.2.a	The contract provisions must not contain any mechanism through which the PA is entitled to share in cost savings generated by the private through its management of design construction and/or installation risk	x			
Construction Completion	2.3	2.1.2; 2.1.2.a; 2.1.2.b	Construction Completion Criteria must be i) objective and clearly set out in the PPP contract ii) Robust			x	
Construction Completion	2.3	2.1.2; 2.1.2.b	Operational Payments for a completed phase must be i) linked to a component of the asset that can be used independently ii) proportion of the Operational Payments must be proportional to capex for that phase			x	
Snagging Works	2.4	2.1.2; 2.1.2.b	Snagging works can be excluded from the completion criteria tests if such works do not affect the availability of the asset			x	
Partner Reimbursement of Authority costs	2.6	2.1.2; 2.1.2.a; 2.1.5.b	Reimbursement payments must cover clearly identifiable costs incurred by the PA in direct connection with the project			x	

6.2.2. Operation and Maintenance of the EPC Assets

Theme 3: O&M of the EPC assets							
Responsibility for O&M	3.1	2.1.4; 2.1.4.a; 2.1.4.b; 2.1.5.k	The PA must not take any responsibility for maintaining and/or replacing any component of the asset			x	
O&M standards	3.2	2.1.4; 2.1.4.b; 2.1.4.c	The standards to which the private must operate and maintain the asset must establish conditions in which the asset is genuinely capable of delivering the energy consumption and/or cost savings required under the EPC contract and the regime for monitoring and reporting the private's performance against those standards must allow the PA to sanction the partner for non-performance	x			
Maintenance plan	3.3	2.1.2.a; 2.1.2.b;	The PA approval must not remove or reduce the private's liability for deficiencies in the EPC assets and/or delivery of related services			x	
Maintenance plan	3.3	2.1.4; 2.1.5.j; 2.1.5.k	The private must demonstrate that deferring maintenance will not have a negative impact on the condition and performance of the EPC asset and the services, the PA or end-users				x
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not take risk in relation to the fund (i.e. contributing to the fund to meet actual maintenance cost incurred)			x	
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not take rewards in relation to the fund (i.e. taking a share of surplus in the fund if the partner spends less than anticipated)	x			
Maintenance funds	3.4	2.1.4; 2.1.4.a; 2.1.4.b	The PA must not be entitled to any share in financial savings generated through the private's management of maintenance risk	x			

6.2.3. The Guaranteed Savings

Theme 4: The Guaranteed Savings							
The Guaranteed Savings	4	2.1.4.b	If an EPC has no guaranteed level of savings it must not impose payment obligation on the PA and/or involve government financing	x			

Defining the guaranteed savings	4.1	2.1.4.b	The EPC must guarantee an amount of savings which at financial close are calculated so as to satisfy the following conditions: i) on a NPV basis, the level of savings guaranteed over the duration of the EPC is equal to or greater than the sum of (a) the Operational Payments forecast to be made over the duration of the EPC and (b) any amount of government financing that is not repayable by the private; ii) the level of savings guaranteed for each period over which performance against the guaranteed for each period over which performance against the guarantee is tested is equal to or greater than the Operational Payments that the PA is forecast to make the private in that period.	x			
Defining the guaranteed savings	4.1	2.1.4.b	The conditions on 4.1 can be satisfied by aggregating energy consumption savings with: i) energy-related cost savings; ii) revenues generated from the export of surplus on-site energy generation if such revenues are forecast to count towards less than 50% of guaranteed savings	x			
Monitoring and measuring performance of the EPC assets	4.2	2.1.4.b	The EPC must contain a regime that allows for objective and robust measurement of the EPC assets performance in delivering the guaranteed savings.	x			
Monitoring and measuring performance of the EPC assets	4.2	2.1.4.b	The PA's approval of the monitoring and measurement plans or programmes must not remove or reduce the private's liability for failing to achieve the guaranteed savings			x	
Testing performance of the EPC assets in delivering the guaranteed savings	4.3	2.1.4.b	The EPC must contain a mechanism for routine testing of performance against the guarantee, or that provides for testing less frequently than annually	x			
Testing performance of the EPC assets in delivering the guaranteed savings	4.3	2.1.4; 2.1.4.b;	The grace period that delays the testing of the performance of the EPC asset against the guarantee must be of reasonable length (i.e. 3 months grace period for and EPC with a length of the Operational phase of 8 years)				x

Testing performance of the EPC assets in delivering the guaranteed savings	4.3	2.1.4; 2.1.4.b;	The EPC contract must not contain provisions to aggregate actual energy consumption savings with other cost savings that are unrelated to energy (e.g. reduced O&M costs)	x			
Routine adjustments	4.5	2.1.4; 2.1.4.b;	Provisions for routine adjustments must meet all the following conditions: i) there is a finite number of well-defined events; ii) the events do not capture changes in macro-economic conditions; iii) the events are not attributable to the acts or omissions of the private; the events, or the consequences of the events are not reasonably foreseeable or estimable. This is to be assessed by reference to a level of due diligence carried out before financial close that is reasonably appropriate given the specific circumstances; v) the adjustments do not compensate for anything other than the effects of the event in question			x	
Non-routine adjustments	4.6	2.1.4; 2.1.4.b;	Provisions for non-routine adjustments must meet all the following conditions: i) there is a finite number of well-defined events; ii) the events do not capture changes in macro-economic conditions; iii) the events are not attributable to the acts or omissions of the private; the events, or the consequences of the events are not reasonably foreseeable or estimable. This is to be assessed by reference to a level of due diligence carried out before financial close that is reasonably appropriate given the specific circumstances; v) the adjustments do not compensate for anything other than the effects of the event in question				

6.2.4. The Payment mechanism

Theme 5: The payments mechanism							
Commencement of Operational Payments	5.2	2.1.2; 2.1.4	The contract must not force the PA to start making Operational Payments before the date on which the assets are complete	x			

Indexation	5.3	2.1.4; 2.1.5.g	The provisions for indexation of the Operational Payments must be based on an index or indices generally recognised by the relevant jurisdiction or sector				x
Pass-through costs	5.4	2.1.4; 2.1.5	The EPC contract must not contain provisions to treat any cost, other than energy supply costs, on a pass-through basis			x	
Savings Shortfalls	5.6.2	2.1.4	The private's liability for a savings shortfall must be proportional (or over proportional) to the proportion of guaranteed savings that have been achieved	x			
Savings Shortfalls	5.6.2	2.1.4	the EPC must allow the PA to set-off the Partner’s liability for a savings shortfall against future Operational Payments.	x			
Savings Shortfalls	5.6.2	2.1.4.b; 2.1.5	the EPC must impose a time limit on the carry-forward and set-off of savings shortfalls, meaning that the PA must have appropriate recourse against the private if any amount of a savings shortfall has not been set-off within a maximum period of one year from when he savings shortfall is determined. That recourse might be through a demand for immediate payment form the private and/or a right for the PA to terminate the EPC. The same principle of a time limit applies to provisions that allow savings shortfall to be carried forward and set-off against future savings excesses	x			
Caps on savings shortfalls	5.6.3	2.1.4.b; 2.1.5	The EPC must not contain any provision that caps the private's liability for the full amount of any savings shortfalls	x			
Savings Excesses	5.6.4	2.1.4.b	The private's share of the excess savings must be no less than two thirds if no assessment is made on whether a savings excess results from the actions of the PA or the private or other factors	x			
Savings Excesses	5.6.4	2.1.4.b	If a sharing mechanism varies the proportions in which the saving excesses are shared depending on the level of savings excesses achieved must set the private's share equal to or greater than two thirds	x			
Savings Excesses	5.6.4	2.1.4.b	The PA must not be entitled to receive a share any greater than one third of any residual amount in any notional or actual reserve account	x			

Caps on savings excesses	5.6.5	2.1.4	The EPC must not impose a cap on the private's share of excess savings	x			
Caps on savings excesses	5.6.5	2.1.4.b	The EPC must not link the expiry date of the EPC to a level of savings having been achieved since is akin to a cap on the private's share of savings	x			
Payment mechanism reviews	5.9	2.1.4	The EPC must not contain any provision for an increase in the level of guaranteed savings in order to reflect the occurrence of savings excesses in one or consecutive periods if the adjustment reflects more than a one third share of the savings excesses	x			

6.2.5. Compensation, relief and force majeure events

Theme 6: Compensation, relief and force majeure events							
Compensation, relief and force majeure events	6.1.1; 6.1.2; 6.1.3	2.1.2; 2.1.3a; 2.1.3b; 2.1.4; 2.1.5	Provisions by which the PA takes or shares the risk of events that affect the delivery of the project must: i) Include a finite number of well-defined events; ii) not capture changes in macro-economic conditions; iii) not be attributable to acts or omissions of the private; iv) not be reasonably foreseeable or estimable (this is to be assessed by reference at the level of due diligence carried out before financial close that is reasonably appropriate given the specific circumstances of the project)			x	
Quantifying compensation and/or relief	6.1.4	2.1.2; 2.1.3a; 2.1.3b; 2.1.4; 2.1.5	Provision for calculating compensation and/or relief must: i) not compensate or provide relief for anything other than the effects of the event in question; ii) calculate lost revenue on demand-based projects on current data; iii) exclude from any compensation due by the PA any amount that the private should be able to recover under the required insurances or under the normal terms of insurance that is available on commercially viable terms			x	
Public law doctrines on compensation relief and force majeure events	6.2	2.1.2; 2.1.3a; 2.1.3b; 2.1.4; 2.1.5	Analysis of the public law and jurisprudence might be required to ascertain whether it could result in the PA taking or sharing the risk of events which would influence the statistical treatment.			x	

6.2.6. Changes to the EPC

Theme 7: Changes to the EPC							
Change proposed by the PA	7.1	2.1.2; 2.1.3a; 2.1.3b; 2.1.4; 2.1.5	Provisions that give the private a right to claim compensation and/or relief for the consequences of complying with a PA change, and the method for calculating and paying compensation must be limited to addressing the effects of the PA change (i.e. they must not indirectly compensate or relieve the private for its own poor performance or other risks)			x	
Change proposed by the private	7.2	2.1.5.g	The contract must not force the PA to bear the financial consequences of a private change proposal			x	

6.2.7. Changes in law

Theme 8: Changes in law							
Changes in law	8	2.1.5.e	Provisions that allocate change-in-law risk to the PA must not include the PA taking the risk of i) changes in law that are foreseeable at the date of signature of the EPC; ii) changes in law that are general in nature (i.e. they do not relate solely to the project or to the private or to similar project or business) and affect the general operating cost of business in the relevant jurisdiction				x

6.2.8. Insurance

Theme 9: Insurance							
Insurance Requirements	9.1	2.1.5	The PA must not have any obligation to take out any insurance (apart from property damage and/or public liability insurances) for the benefit of the private			x	

Insurance cost	9.3	2.1.5	Provisions that allow the PA to take or share the risk/benefit of changes in insurance cost in situations other than un-insurability must respect all the following conditions: i) the PA takes or shares the risk that the insurance cost increase above a specified ceiling and/or the insurance cos fall below a specific floor; ii) the ceiling is set no lower than twice the amount of the insurance cost forecast at financial close; iii) the floor is set no higher than half the amount of the insurance cost at financial close; iv) if insurance costs increase above the ceiling, the PA is only liable for the difference between the actual cost and the ceiling; v) if insurance cost fall below the floor, the PA only takes or shares the benefit of the difference between the actual cost and the floor; vi) the provisions do not allow the PA to take risk and/or benefit of changes in insurance cost that are attributable to the actions of the private			x	
Un-insurability	9.4	2.1.5	Provisions that treat the unavailability of insurance must apply only in situations of disruption in the insurance market and not in situations where the insurance is unavailable because of the private's acts or omissions. The insurance market is assumed to be disrupted if: i) the insurance is not provided by reputable insurers in the market; or ii) the terms on which the insurance is available are commercially unviable such that entities similar to the private are generally not taking out the insurance			x	

6.2.9. Warranties and indemnities

Theme 10: Warranties and indemnities							
Indemnities given by the private	10.2	2.1.5	The limits or exclusions of the indemnities granted by the private must apply only to the private's liabilities for events: i) that are unforeseeable and are not covered under the normal terms of insurance that is available for the asset and services delivery on commercially viable terms; ii) that arise from matters that are within the scope of the PA's management or control; iii) for which the PA has another remedy against the private either under the EPC or at law			x	
Indemnities given by the PA	10.3	2.1.5	Provision of an indemnity from the PA to the private can include only these risks: i) the PA's own acts or omissions; ii) acts or omissions of any third party that the PA manages or controls; risks that the Guide states can be taken by the PA without influencing the statistical treatment			x	

6.2.10. Early termination of the EPC

Theme 11: Early termination of the EPC							
PA default termination	11.2	2.1.5	Triggers for early termination for PA default must not result in the PA taking risks that, as stated elsewhere in the guide influence the statistical treatment			x	

6.2.11. Compensation on early termination of EPC

Theme 12: Compensation on early termination of the EPC							
Approach 1 - Market value of the contract	12.1.1	2.1.4; 2.1.5	The market value of the contract approach must follow all these conditions [3]	x			

[3] The conditions for this provision are reported at the end of the chapter.

Approach 2 - Investment based calculation	12.1.2	2.1.5	Provisions that calculate the compensation payable on private default on the basis of the book value of the asset must take into account the PA's remediation costs	x			
Approach 2 - Investment based calculation	12.1.2	2.1.5	Calculation of compensation for the private must not include any element of its expected profit on the investment	x			
Approach 2 - Investment based calculation	12.1.2	2.1.5	If a provision that calculates the compensation payable on private default on the basis of the book value of the asset takes into account only some remediation costs the provision does influence the statistical treatment			x	
Approach 3 - Senior debt compensation	12.1.3	2.1.5.g	EPC provisions must not base the compensation payable on private default on senior debt outstanding since they are akin to a financing guarantee	To be assessed (Theme 14.1)			
Force majeure termination compensation	12.4	2.1.5	An approach that calculates compensation on termination for force majeure on the same basis as compensation on termination for Authority default or Authority voluntary termination influences the statistical treatment				x
Schedule of termination payments	12.6	2.1.5.h	The EPC must not contain any provision of a pre-agreed payment due by the PA to the private on termination for private default	x			
Schedule of termination payments	12.6	2.1.5	The EPC must not contain any provision of a pre-agreed payment due by the PA to the private on termination for force majeure that is the same as or higher than the pre-agreed amount due by the PA to the private on termination for PA default				x

6.2.12. Expiry of the EPC

Theme 13: Expiry of the EPC							
Expiry date	13.1	2.1.5	The EPC contract must not contain any provision that link the expiry of the EPC to a milestone such as the level of savings, profits or revenues achieved	x			

Conditions of the asset on expiry	13.3	2.1.4	Where responsibility for the asset will revert to the PA on expiry of the PPP contract, the private must take the risk that the physical condition of the asset on expiry of the PPP contract meets a standard that is consistent with it having been maintained in accordance with the contract			x	

6.2.13. Financing Arrangements

Theme 14: Financing arrangements							
PA/government participation in financing	14.1	2.1.5.f	The government commitment of financing or any other support amounts to 50% or more of the capital expenditures to be incurred in the construction and/or installation of the EPC assets	x			
PA/government participation in financing	14.1	2.1.5.f	The government commitment of financing or any other support amounts to less than 50% but more than one third of the capital expenditures to be incurred in the construction and/or installation of the EPC assets		x		
PA/government participation in financing	14.1	2.1.5.f	The government commitment of financing or any other support amounts to less than one third but more than 10% of the capital expenditures to be incurred in the construction and/or installation of the EPC assets			x	
PA/government participation in financing	14.1	2.1.5.f	The government commitment of financing or any other support amounts to less than 10% of the capital expenditures to be incurred in the construction and/or installation of the EPC assets				x
Other forms of PA/government support	14.2	2.1.3.a; 2.1.3.b	Government support in the form of which limit the private's liability for savings shortfalls does influence the statistical treatment	x			
Interest rate adjustments	14.4	2.1.5.g.a	Provisions for adjusting the Operational Payments to reflect the interest rate must be set through the initial hedging process (whether at financial close or at a later key milestone during the Construction Phase)			x	

PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The right for the PA to withhold its approval to a proposed refinancing must not be withheld or delayed unreasonably if the grounds on which it can withhold its approval are limited to circumstances where the refinancing would have an adverse impact on the PA or on the performance of the EPC			x	
PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The right for the private to proceed with any refinancing without the PA's approval must not have the effect that the PA's liabilities under the EPC contract could increase without its prior consent			x	
PA approval to refinance	14.6.1	2.1.4; 2.1.5.g	The PA must not have the right to require the private to proceed with a refinancing	x			
Refinancing gains	14.6.2	2.1.5.g	The PA must not be entitled to more than one third of the refinancing gains if no assessment is made of whether the refinancing gain results from actions of the PA or the private or other factors	x			
Lenders' step-in rights	14.8	2.1.5	Provisions for lenders' step-in rights must not change the PA's rights or liabilities under the EPC contract before, during or after step-in				x
Factoring/forfeiting arrangements	14.9	2.1.4; 2.1.5	A factoring (or forfeiting) arrangement that involves an obligation on the PA to pay a third party a percentage of the Operational Payment must meet all the following conditions: i) under the provisions of the EPC the private is liable to the PA for the full amount of any savings shortfalls; ii) the EPC allows the PA to set-off the private's liability for any savings shortfalls against the percentage of future Operational Payments that are payable by the PA to the private; iii) the EPC imposes a time limit on the carry-forward and set-off of savings shortfalls, meaning that the PA must have appropriate recourse against the private if any amount of a savings shortfall has not been set-off within a maximum period of one year from when the savings shortfall is determined	x			

6.2.14. Government influence

Theme 15: Government influence							
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share of 50% or more of the private's profit	x			
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than 50% but more than one third of the private's profit		x		
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than one third but more than 20% of the private's profit			x	
PA share in the ownership of the Partner	15.1	2.1.5	The PA has an entitlement to a share less than 20% but more than 10% of the private's profit				x
PA step-in rights	15.3	2.1.4	If the PA has an obligation to pay the Operational Payments in full during the period of step-in these conditions must apply: i) deductions for unavailability and/or poor service performance up to the date that the PA steps in and after the date that the PA steps out are applied to the Operational Payments as envisaged for the normal operation of the EPC; ii) the PA is entitled to recover its step-in costs from the private if the PA has stepped in because of the private's poor performance				x
Caps on private profit or revenues	15.4	2.1.3	The contract must not contain any provision that imposes a cap on the private's profit	x			
Caps on private profit or revenues	15.4	2.1.3; 2.1.4	The contract must not contain any provision that link the EPC expiry to the private having generated a specific amount of revenue or profit to be akin to a cap on private revenue or profit	x			

6.3. Compensation on early termination of the contract

6.3.1. PPP

Eurostat's view is that the Approach 3 (Market Value of the contract) does not influence the statistical treatment if all the following conditions are met:

i) Under the conditions of the re-tendering process set out in the PPP contract, the bidders for the PPP contract are required to take into account any remediation costs resulting from the private's under-performance (i.e. costs to complete/rectify the asset as well as additional operation, maintenance and financing costs);

ii) The methodology for estimating the market value of the contract (where the re-tendering process is not followed) is designed to reflect the approach that the market would take in valuing the PPP contract and not to ensure the recovery of the private's incurred costs or outstanding debt. The methodology needs to take into account any remediation costs resulting from the private's under-performance (i.e. the forecast cashflows should take into account costs to complete/rectify the asset as well as additional operation, maintenance and financing costs);

iii) Where the PPP contract provides for a choice between re-tendering and an estimated market value, that choice lies with the PA and not the private;

iv) The PA is only obliged to opt for an estimated market value in situations in which there is no liquid market;

v) The definition of liquid market ensures that (as at the time the choice is made) there are a sufficient number of capable and willing parties in the market for the relevant type of PPP or similar contracts to allow for a market price to be determined;

vi) Any decision to switch to an estimated market value of the PPP contract instead of a re-tendered market value after the decision to follow a re-tendering process has been taken, but before bids are received, is solely at the discretion of the Authority and cannot be initiated or influenced by the private;

vii) Under the conditions of the re-tendering process set out in the PPP contract, the validity of the re-tendering process is not conditional on a minimum number of bids being received or a minimum contract value being offered (i.e. the results of the re-tendering process are held to be valid even if no bids are received or if bids have a lower value than expected);

viii) Under the conditions of the re-tendering process set out in the PPP contract, if the re-tendering process is followed and the number of bids received is below a certain number (or lower than expected) or the prices offered are below a certain value (or lower than expected), the price offered is deemed to be the market value and the contract does not provide for some other amount (e.g. an estimated market value) to be used to determine the market value;

ix) Under the conditions of the re-tendering process set out in the PPP contract, if the re-tendering process is followed and no bids are received then the market value of the contract is deemed to be zero (i.e. the contract does not provide for some other amount, such as an estimated market value, to be used as an alternative basis for the compensation payment);

x) Under the conditions of the re-tendering process set out in the PPP contract, if the re-tendering process establishes a market value that is less than zero, the contract provides for the possibility of a negative compensation payment (i.e. a payment that would be due by the private to the PA);

xi) Any interim payments made by the PA to the private between the termination date and the date that compensation is paid are deducted from the compensation payment;

xii) If the conditions of the re-tendering process impose a time limit on the Authority to complete the re-tendering process and pay the market value of the

contract to the private, that time limit is no less than six months from the termination date;

xiii) If the re-tendering process is not followed, the estimated market value of the PPP contract is calculated (using the methodology provided in the contract) either by an expert or jointly by the parties. Where the contract provides for an expert to be used, the expert should be independent of both the PA and the private (and the PA and the private can agree the precise tests for independence and expertise);

xiv) Where the contract provides for the calculation to be agreed by the parties, both parties must have the right to refer any disagreement to an independent expert or to a dispute resolution procedure set out in the PPP contract; and

xv) If the methodology for calculating the estimated fair value of the contract establishes a value that is less than zero, the contract provides for the possibility of a negative compensation payment (i.e. a payment that would be due by the private to the PA).

Where either of the first two conditions listed above is not met, the PPP is automatically ON BALANCE SHEET for government. Each of the remaining conditions listed above is of HIGH importance to the statistical treatment (Eurostat, 2016 a).

6.3.2. EPC

Eurostat's view is that the Approach 1 (Market Value of the contract) does not influence the statistical treatment if all of the following conditions are met:

i) Under the conditions of the re-tendering process set out in the EPC, the bidders for the EPC are required to take into account any remediation costs resulting from the Partner's under-performance (i.e. costs to complete/rectify the EPC assets as well as additional operation, maintenance and financing costs);

ii) The methodology for estimating the market value of the contract (where the re-tendering process is not followed) is designed to reflect the approach that the market would take in valuing the EPC and not to ensure the recovery of the private's incurred costs or outstanding debt. The methodology needs to take into account any remediation costs resulting from the Partner's underperformance (i.e. the forecast cash-flows should take into account costs to complete/rectify the EPC assets as well as additional operation, maintenance and financing costs);

iii) Where the EPC provides for a choice between re-tendering and an estimated market value, that choice lies with the PA and not the private;

iv) The PA is only obliged to opt for an estimated market value in situations in which there is no liquid market;

v) The definition of liquid market ensures that (as at the time the choice is made) there are a sufficient number of capable and willing parties in the market for the relevant type of EPCs or similar contracts to allow for a market price to be determined;

vi) Any decision to switch to an estimated market value of the EPC instead of a re-tendered market value after the decision to follow a re-tendering process has been taken, but before bids are received, is solely at the discretion of the PA and cannot be initiated or influenced by the private;

vii) Under the conditions of the re-tendering process set out in the EPC, the validity of the re-tendering process is not conditional on a minimum number of bids being received or a minimum contract value being offered (i.e. the results of the re-tendering process are held to be valid even if no bids are received or if bids have a lower value than expected);

viii) Under the conditions of the re-tendering process set out in the EPC, if the retendering process is followed and the number of bids received is below a certain number (or lower than expected) or the prices offered are below a certain value (or lower than expected), the price offered is deemed to be the market

value and the contract does not provide for some other amount (e.g. an estimated market value) to be used to determine the market value;

ix) Under the conditions of the re-tendering process set out in the EPC, if the retendering process is followed and no bids are received then the market value of the contract is deemed to be zero (i.e. the contract does not provide for some other amount, such as an estimated market value, to be used as an alternative basis for the compensation payment);

x) Under the conditions of the re-tendering process set out in the EPC, if the retendering process establishes a market value that is less than zero, the contract provides for the possibility of a negative compensation payment (i.e. a payment that would be due by the private to the PA);

xi) Any interim payments made by the Authority to the Partner between the termination date and the date that compensation is paid are deducted from the compensation payment;

xii) If the conditions of the re-tendering process impose a time limit on the PA to complete the re-tendering process and pay the market value of the contract to the Partner, that time limit is no less than six months from the termination date;

xiii) If the re-tendering process is not followed, the estimated market value of the EPC is calculated (using the methodology provided in the contract) either by an expert or jointly by the parties. Where the contract provides for an expert to be used, the expert should be independent of both the PA and the private (and the PA and the private can agree the precise tests for independence and expertise). Where the contract provides for the calculation to be agreed by the parties, both parties must have the right to refer any disagreement to an independent expert or to a dispute resolution procedure set out in the EPC; and

xiv) If the methodology for calculating the estimated fair value of the contract establishes a value that is less than zero, the contract provides for the possibility of a negative compensation payment (i.e. a payment that would be due by the private to the PA).

Where either of the first two conditions listed above is not met, the EPC is automatically ON BALANCE SHEET for government. Each of the remaining conditions listed above is of HIGH importance to the statistical treatment (Eurostat, 2018 d).

7. CONCLUSIONS

Off-balance contracting will be a critical tool to foster public investment due to its flexibility, adaptability to different types of projects and the ability to overcome the tight budget constrains applied to every level of government expenditure.

Off-balance PPPs and EPCs require both careful planning activities from the PA to ensure a timely and within budget completion of the project, and close monitoring and controlling to guarantee good quality of the services over the whole life cycle of the project. To develop and monitor such contracts the PA must embrace a project management mindset that guarantees the integration of the different disciplines characterizing these activities. This mindset shift is necessary to overcome the traditional functional organizational structure that characterizes the PA's structure. Furthermore, managerial skills must be developed also through high level training and education to retain the theoretical knowledge required to monitor the contracts. Another key element of the PPP/EPC process is the project team that should represent the various disciplines within the scope of the project.

To facilitate this mindset transition it is necessary to create project management tools to link the various functions within the process. The tool presented in this thesis is focused on two critical subjects: risk and contractual provisions. The tool directly links various contractual provisions to the risks that each provision regulates facilitating various PA activities such as the definition of the contract and the creation of the risk matrix and risk assessment. Moreover, the table can be also used as a reviewing tool to check and assess possible consequences of various risk transferring provisions on the statistical treatment of the contract. Furthermore, during the contract definition phase it is possible to include another column containing the article code that refers to the specific provision within the contract.

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