

# Managing PPP Contracts After Financial Close

Practical guidance for governments managing  
PPP contracts, informed by real-life project data



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# Foreword

**Globally, there is a significant deficit of required infrastructure to meet the needs of countries' populations, and delivering infrastructure that meets these needs is a high priority of governments in many countries.**

Governments around the world are looking to draw on the private sector through public private partnerships (PPPs) to help deliver major infrastructure projects, because they recognize that private sector involvement can drive innovation and efficiency and provide additional financing solutions.

A PPP typically involves a long-term contract that may last for more than 20 years after the procurement phase has ended. While attention on PPPs often focuses on the ability to attract financing and achieve the critical milestone of financial close, less attention is usually given to the subsequent management of projects throughout construction and operation.

The PPP Contract Management Tool (referred to herein as the 'reference tool') provides public sector officials with practical guidance and case studies, so that those responsible for managing contracts after financial close are better able to ensure project objectives and value for money. The reference tool has been developed based on analysis of contract management experience from more than 250 PPP projects globally and lessons learned from specific project case studies.

The reference tool is designed to be used by a variety of public sector authorities with different levels of expertise and experience in managing PPP projects. While it is aimed at those responsible for managing PPP projects after financial close, it also highlights lessons arising over the lifetime of these projects, which are instructive for those responsible for the procurement of PPPs, as well as policy makers.

The reference tool explores critical issues of contract management, highlighting leading practice and real-life experience, using case studies to provide practical learnings across a range of project types from a variety of jurisdictions. It is not designed to provide a single solution, but a framework for governments around the world to build capability in their public sector officials who are responsible for managing infrastructure projects after financial close.

By using the reference tool, governments will be better able to manage project construction and operation, work more successfully with private sector partners, and continue to secure greater social and economic benefits from quality infrastructure projects.

**"Structuring, procurement and negotiation of quality PPPs are important to the success of those projects, but without effective management of a contract after financial close, there is significant risk that even the best projects can end badly."**



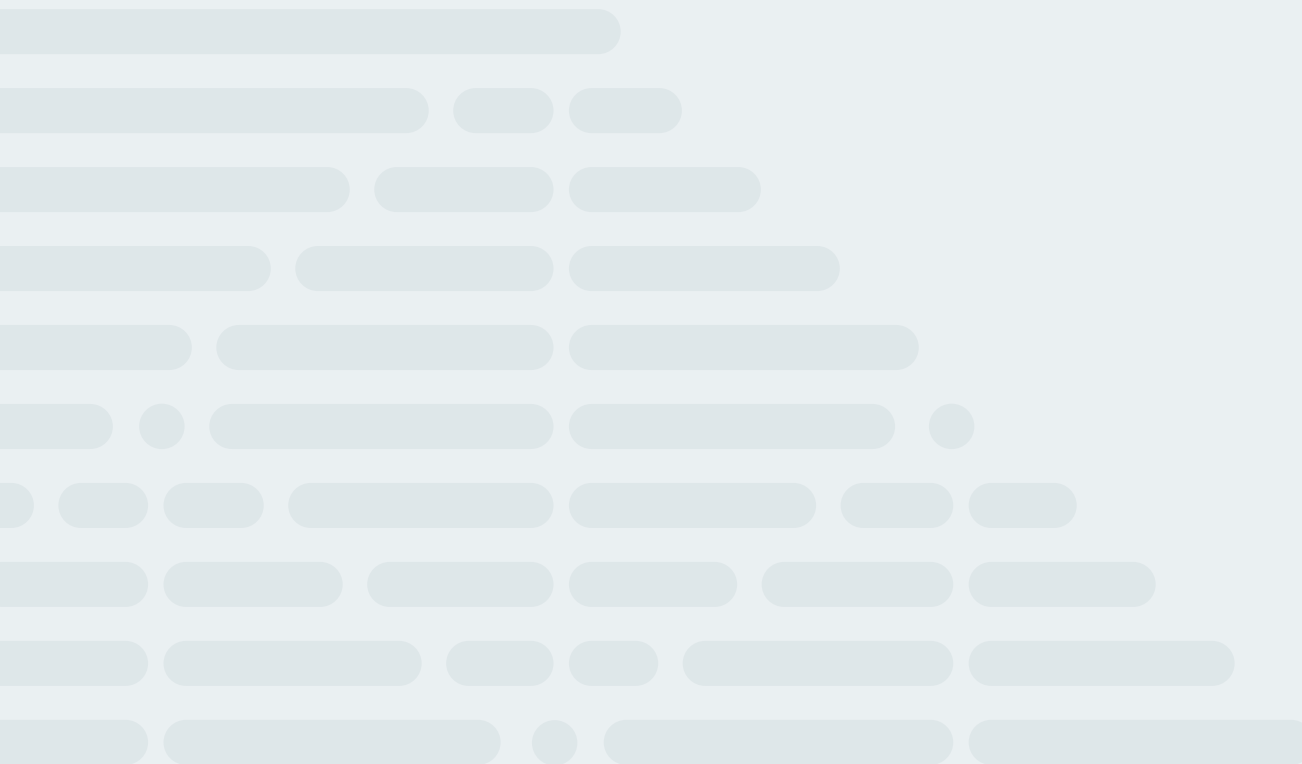
**Chris Heathcote**  
Chief Executive Officer, Global Infrastructure Hub

**"This reference tool is designed to help the public sector to realize the value and opportunities created in PPP contracts from financial close and throughout the contract life."**



**Murray Rowden**  
Managing Director, Americas & Global Infrastructure,  
Turner & Townsend

# Introduction



# Introduction

**PPP contract management is one of the most important aspects of PPP delivery. If done effectively, it will support the long-term success of the project in line with the agreed contract terms. But, if managed poorly, it can seriously undermine years of project preparation and procurement and can ultimately lead to major cost implications for taxpayers and service disruptions for end users.**

In the face of growing investment needs and constrained budgets, many governments are increasingly looking to the private sector to bring expertise and financing to infrastructure delivery; often through the use of PPPs. However, despite the growing trend among governments to consider PPPs as a procurement and financing model for infrastructure projects, the contract management of these projects through their construction and operations phases is one of the more overlooked areas of infrastructure delivery.

Given the long-term nature of these contracts, combined with their size and complexity, there is clear potential for significant impact on the delivery of public services if they are not appropriately managed. Variations, scope changes and other changes after a contract has been negotiated, even if agreed by all parties, will not necessarily maintain the initial value and competition inherent in a project's procurement.

Contract management is important not just in the context of an individual project, but because no project is undertaken in isolation from other PPP initiatives. The learnings from one project should inform improvements in subsequent projects.

The public sector must therefore recognize the value and opportunities created by effective PPP contract management, and must develop a strategic approach to capitalising on this model throughout the project life cycle, to continuously inform and improve the way we utilize private sector involvement in the delivery of public infrastructure.

## OVERVIEW OF THE REFERENCE TOOL

The reference tool is a guide that builds on global research into projects and the lessons that can be learned from their performance throughout construction and operations. It provides practical advice for public officials responsible for the management of PPPs after financial close.

The Global Infrastructure Hub (GI Hub), a G20 initiative, and its consultants, Turner & Townsend, have created the reference tool by collecting and analysing data from 250 PPP projects, supported by in-depth analysis of the contract

management practices from a select number of case study projects and a detailed literature review.

The reference tool is intended to be user-friendly and interactive, providing guidance to public sector teams around the world responsible for contract management of PPPs from financial close to handback. It is designed to supplement other resources currently available to help with oversight and governance of PPP projects. It is also designed to help drive enhancements to structural arrangements in the pre-financial close stages of a project, by highlighting some of the most common challenges and issues faced by projects.

The reference tool covers critical issues of contract management, including the establishment of the contract management team; routine contract management issues; as well as non-routine issues that can have major implications for a project – for example, instances of dispute, contract renegotiation, insolvency or termination. The case studies demonstrate leading practices from successful projects and highlight the lessons learned.

The reference tool also gives insights into the circumstances that may result in disagreements between the Procuring Authority and the Project Company, and provides leading practice guidance on managing such issues. Importantly, the reference tool also addresses matters that are not typically addressed in a PPP contract, but are important for the Procuring Authority in managing the delivery of a project, for example public stakeholder engagement.

While the reference tool is not a prescriptive PPP management manual, it is a guide that provides insight into the potential issues inherent in PPPs, and provides leading practice recommendations on how to resolve them during the implementation phase (including design, construction and delivery of the project assets) and operations phase (including operation and maintenance during service delivery). It is not a route to a single solution. The reference tool should enable the user to gain an overview of typical pitfalls and an insight into critical issues in terms of underlying causes, potential impacts on the PPP contract and possible approaches to proactively manage risk.

It is not a replacement for any existing guidance document, but rather a supplemental resource focused on leading practice contract management post-financial close which is informed by systematic research and analysis, and real case study examples. Finally, it is not a model to provide a rating of the maturity of a Procuring Authority's capabilities or to identify where gaps exist. However, the reference tool may highlight organisational issues that require improvement to ensure more effective contract management.

## DEFINITIONS AND SECTOR COVERAGE

The reference tool can be used by public officials in any country in either common or civil law jurisdictions. It provides guidance on projects delivered not only under a jurisdiction's specific PPP laws, but also projects that are delivered under concession laws or other laws that fall within the broad definition of a public private partnership.

For the purposes of the reference tool, a PPP contract is taken to mean a long-term contract between a Procuring Authority (government or other public agency), and a Project Company (private partner or commercial partner) for the development and/or management of a public asset or service, where the Project Company bears significant risk and management responsibility throughout the life of the contract, and where remuneration is significantly linked to performance and/or the demand or use of the asset or service. It covers both greenfield and brownfield projects.

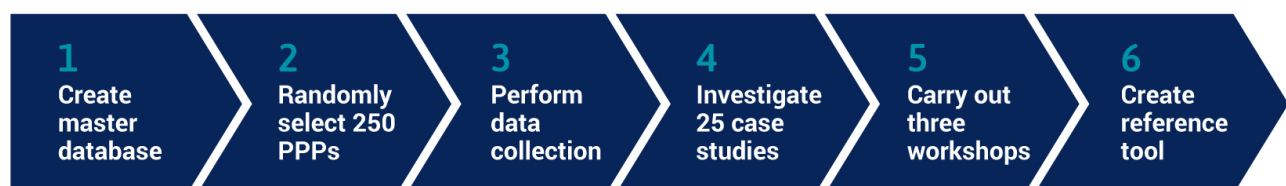
This definition is deliberately broad. It includes projects where demand risk is passed entirely on to the private partner (also known as 'user-pay' projects or concessions), and projects that are based on availability payments by government irrespective of demand (availability-based projects). It also includes, for example, power purchase agreements where a government entity is the purchaser of the power.

Although the data collection and case study elements of the research are focused solely on economic infrastructure projects across transport, energy, water and waste, many of the broader principles of contract management are applicable to other projects, including social infrastructure projects, such as school and hospital projects.

## SUMMARY OF METHODOLOGY FOR DEVELOPING THE REFERENCE TOOL

The reference tool has been created using systematic research into the data and actual examples of the practices used during the construction and operations phases of PPPs. The steps in the data collection that helped to inform the reference tool are set out below. In addition, the detailed methodology is described in the Methodology section of the reference tool.

1. A master global database was first developed to include all economic infrastructure PPPs that reached financial close between 2005 and 2015 (inclusive). The master database was built up using multiple online sources and was categorized by region and sector. The master database comprised 3,736 projects across 137 countries.
2. A random group of 250 projects was then selected from the master database, in such a way that the regional and sectoral breakdown of the sample was similar to that of the master database. This was done by selecting a random sample from the master database and comparing the breakdown to that of the master database, repeating this process many times, and finally selecting the sample where the breakdowns best matched.
3. Data was then collected on these projects using a combination of desktop research and interviews with key stakeholders. The information collected covered details of major events (termination, force majeure etc.), renegotiations (number, outcome, etc.), disputes (number, outcome, etc.), as well as basic project information such as contract term, capital value, financing and contractors. The prevalence of issues informed the development of the relevant topics of the reference tool. The limitations to this data collection are detailed in the Methodology and the results are reflected in Appendix A (Data analysis).
4. The existing literature on contract management of PPPs was examined to develop an understanding of what guidance was currently available, including where there were gaps.
5. Once the data collection had progressed significantly, 25 projects were identified as case studies to further investigate particular challenges faced by Procuring Authorities on PPPs after financial close and examples of leading practices and lessons to be learned. The majority of the 25 PPPs were selected from the 250 randomly selected projects, with some others added to ensure a wide range of projects across various regions and covering all relevant issues. Interviews were carried out with the Procuring Authority and



Project Company for each case study, as well as with lenders and lawyers where appropriate, to form a comprehensive view of the successes and challenges affecting the PPPs studied, as well as the practices adopted. Further non-project specific interviews were also conducted with experts in the field who have experience in the contract management of PPPs in their relevant capacities as lawyers, lenders, advisors and consultants. Norton Rose Fulbright, a global law firm with staff in 33 countries, also led a substantial legal review of a draft version of the reference tool; inputs from that review have been incorporated into this version.

6. Once a substantial number of case studies had been completed and a draft version of the reference tool had been developed, three regional workshops were held, to share the preliminary findings and to gain further insight from PPP practitioners into their challenges during PPP contract management. The first workshop was in Bogota, Colombia; the second in Singapore; and the third in Rome, Italy, with attendees from regional Procuring Authorities, private sector organisations as well as multilateral development banks. Feedback and additional lessons learned from the workshops were then incorporated into the final reference tool.

The reference tool is therefore based on real experiences on live projects around the world, with support and feedback from the Procuring Authorities as well as other stakeholders including Project Companies, equity investors, lenders and contractors. The reference tool has been structured such that it addresses the prevailing challenges and issues in the contract management of PPPs.

The majority of the 25 Case Studies are shared in Appendix B (Case Studies). Because of the sensitivities of ongoing projects (e.g. some may be experiencing disputes), not all Case Studies are currently available for publishing in full detail. For this reason, a selection of the Case Studies has been anonymised or omitted entirely. However, the fundamental lessons learned from all 25 Case Studies have been incorporated into the reference tool.

Because of the timeline selected for projects to be studied – that being projects which reached financial close between 2005 and 2015 inclusive – the implication was that very few of the projects investigated had reached handback. Guidance is still provided for this process, as it is an important aspect of the management of a PPP; however, the sections covering final handback are not informed by specific case studies.

## ACKNOWLEDGEMENTS

The GI Hub has developed the reference tool under one of its key mandate areas which is to develop and promote leading practices for delivering quality infrastructure.

The GI Hub engaged Turner & Townsend, an independent professional services firm which plays a leading role in the global PPP market, to lead the preparation of the reference tool, with close engagement with the GI Hub team led by Morag Baird and Jack Handford.

The reference tool also incorporates contributions from various governments and private sector organisations, including sponsors, equity investors, lenders (e.g. Aviva Investors), contractors and advisors (e.g. Clyde & Co, Foster & Partners), who took the time to assist the project team in collecting data, preparing case studies and providing commentary on the general issues in the management of PPP contracts. Law firms Norton Rose Fulbright and Felsberg Advogados provided support through a substantial legal review of the reference tool.

The primary data gathering was supported by a full literature review of existing leading practice on the topic of contract management of PPPs, notably including the EPEC document *Managing PPPs during their Contract life*<sup>1</sup>, and the Government of India's toolkit on *Post Award Contract Management Toolkit for PPP Concessions*<sup>2</sup> as well unpublished guidance provided to the GI Hub by PPP Canada.

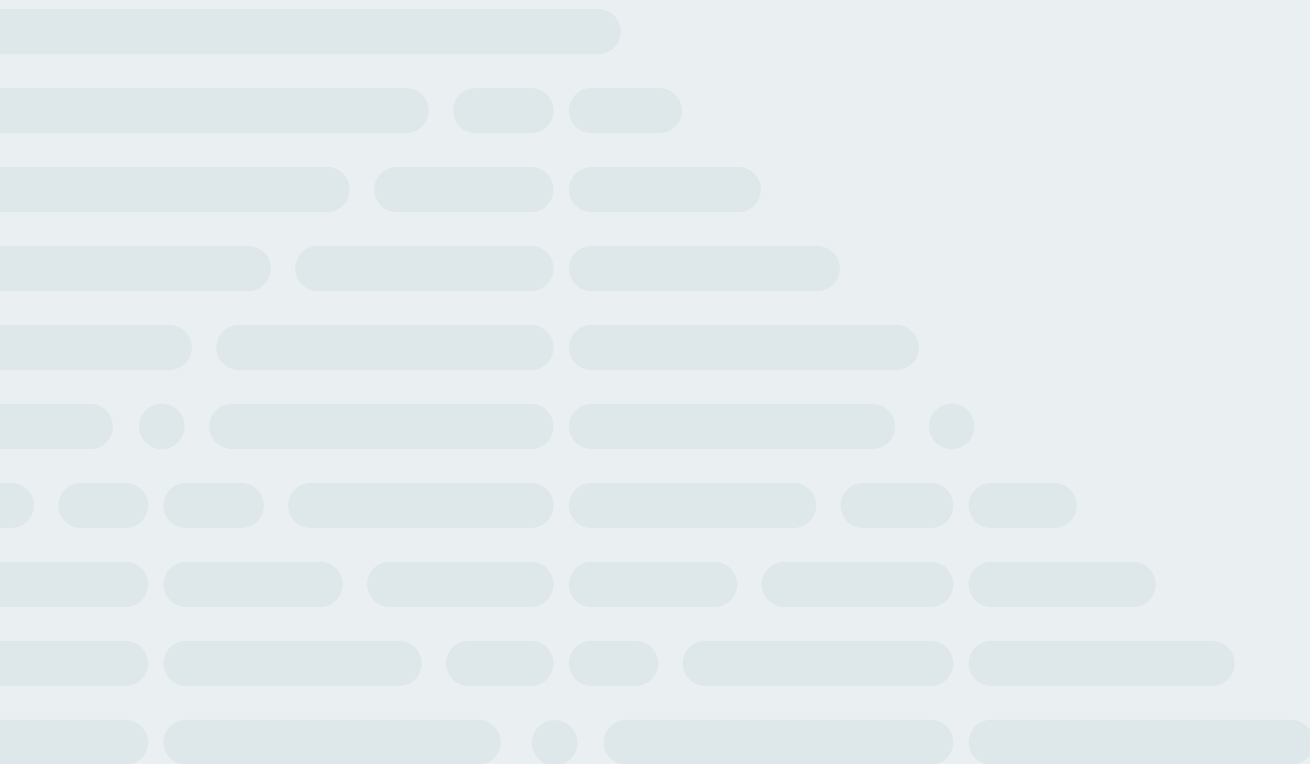
Support and contributions from other international and bilateral organisations have also informed the development of the reference tool, most notably from the European Investment Bank's European PPP Expertise Centre (including Edward Farquharson), the Inter-American Development Bank and the World Bank.

A series of consultation workshops were held on the reference tool while it was in draft format, and the contributions from government officials from the almost 30 countries who attended have helped to inform the final development of the reference tool.

<sup>1</sup> Available at <http://www.eib.org/infocentre/publications/all/epec-managing-ppps-during-their-contract-life.htm>.

<sup>2</sup> Available at <https://www.pppinindia.gov.in/post-award-contract-management-toolkit>.

# Contract management team set-up and training





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## 2 Contract management team set-up and training

The existence of an effective contract management team is vital to ensure a project's objectives are met in the long term. Chapter 2 provides guidance on how to set up a Procuring Authority's contract management team to carry out this role in the most effective manner, considering the challenges any project is likely to face. Training of project staff also needs to be planned and delivered by the Procuring Authority, covering both general training as well as PPP-specific training, and this chapter provides guidance on the specific topic of staff training.

For the purposes of this chapter, the 'contract management team' refers to the Procuring Authority's contract management team. The Project Company will also have a team responsible for managing its contractual obligations and liabilities and interfacing with the Procuring Authority's team; however, that is not the focus of this chapter.

The topics covered by this chapter are:

- Contract management team set-up (Section 2.1)
- Contract Management team training (Section 2.2)

### 2.1 Contract management team set-up

The size and structure of a contract management team will be dictated by several factors, including the level of obligations and risks taken on by the Procuring Authority and the overall complexity of the project. Where the Procuring Authority has taken on a high level of risk and has a significant number of obligations as part of the PPP contract, it must assume an active role in contract management. Where the risks and obligations retained by the Procuring Authority are fewer, the Procuring Authority may be able to take a more passive role, although its responsibilities should not be underestimated. With these considerations in mind, the Procuring Authority will need to determine what skills are required within the team, and what expertise can be brought in using external advisors or other government departments.

#### SECTION STRUCTURE

This section provides a background to contract management team set-up in Subsection 2.1.1 (Background), and provides guidance on setting up the contract management team. The key elements of successful contract management team set-up are summarised below and discussed in detail in Subsection 2.1.2 (Guidance):

- A. Consider the scope of the Procuring Authority's role in the management of the specific PPP contract
- B. Base the size of the contract management team on the nature of the project and the availability of external resources
- C. Ensure the Procuring Authority's contract management team has an appropriate governance structure, and skillset and competencies required for the project
- D. Plan the set-up of the contract management team before financial close
- E. Centralise resources where there is a program of PPPs and benefits could be generated through synergies between different projects
- F. Use external consultants where appropriate and ensure transitions between consultants are managed effectively
- G. Evaluate the structure and resourcing of the contract management team on an ongoing basis and make adjustments as necessary
- H. Plan for staff turnover and ensure adequate procedures are in place to manage continuity of knowledge
- I. Consider setting up the contract management team in a way that mitigates the risk of a change in government or policy

### 2.1.1 Background

Regardless of the characteristics of a PPP project (such as the size, project type, complexity or contract structure), the Procuring Authority must have a team that is responsible for its management. The complexity, size and duration of PPP contracts means that success is dependent on having staff within the Procuring Authority who have defined responsibilities for managing the different phases of the PPP project, including relationships with key stakeholders and effective lines of communication with other relevant government departments and regulators.

Setting up a contract management team should be carefully planned and reviewed, as the skillset required following financial close is different from the transactional expertise needed to successfully reach agreement on the terms of the PPP contract.

The requirements for managing the risks taken by the Procuring Authority and the associated liabilities on a PPP project should not be underestimated. PPPs are different from traditional government procurement (e.g. under a construction contract), as they involve significant risk transfer and have a long contract duration. This must be taken into account when developing the Procuring Authority's contract management team when procuring long-term PPP contracts.

The existence of a dedicated team is key to ensuring value for money is retained through the life of a project and that the project's objectives are met. Understanding project-specific challenges and PPP contract terms from an operational perspective is essential for determining the optimum size of the contract management team, and the nature and timing of the expertise needed for effective contract management.

Some of the common challenges identified during the data collection process regarding the set-up of a contract management team were:

- Vision, values and strategic objectives of the Procuring Authority not being communicated to and shared with the Project Company, leading to underperformance by the Project Company
- Lack of clarity on roles and responsibilities within the Procuring Authority's contract management team
- Lack of clear and sufficient delegation of authority to the contract management team to make timely and informed decisions without continuously seeking approvals from other relevant government agencies
- Lack of capability within the contract management team
- Inadequate stakeholder engagement
- Lack of an effective performance management framework
- Ineffective systems and processes

**2.1.2 Guidance**

**A. Consider the scope of the Procuring Authority's role in the management of the specific PPP contract**

The first step for the Procuring Authority is to understand the nature of the role that it is required to play in managing the relevant PPP contract. The structure and size of the contract management team should depend on the level of involvement the Procuring Authority is required to have in the contract management activities.

The structure and size of the team will depend on several factors that should be considered on a case-by-case basis:

- The size, geographic distribution and complexity of the project
- The scope and complexity of the service(s) being delivered, including its sector
- The complexity of the contractual arrangements
- The risks that have been retained by the Procuring Authority under the PPP contract, or are inherent to the Procuring Authority irrespective of what is agreed in the PPP contract, such as social risks and counterparty risks
- The Procuring Authority's positive obligations under the PPP contract

There are two broad approaches to contract management which play a role in determining the size and structure of the Procuring Authority's contract management team: active contract management and passive contract management. The appropriate approach will depend on the factors outlined above.

**Active contract management**

Active contract management broadly refers to the circumstance where a Procuring Authority has taken on substantial obligations and risks, and needs to be closely and actively involved in contract management activities to manage those risks.

On large or complex projects, the Procuring Authority may still need to be closely and actively involved in the contract management, even where there has been substantial risk transfer to the Project Company.

There are several aspects of PPPs that are likely to require more active contract management:

Performance monitoring. PPPs are typically based on the principle that the Project Company will be self-monitoring, and will consequently submit a large volume of regular reports to the Procuring Authority for verification and approval. The Procuring Authority must therefore have personnel with the capability and experience to understand and analyse the Project Company's monitoring reports, and data interpretation may be resource intensive.

Stakeholder management. By their nature, PPP projects involve a vast array of inter-connecting relationships. These exist not only between the Procuring Authority and the Project Company, but also with and between other stakeholders including end users, the public, equity investors, lenders and other government departments. Adequate resourcing needs to be allocated to these relationships. On high-profile projects there is also the element of reputational risk that needs to be managed across these various relationships.

Land acquisition, enabling works and other obligations. The Procuring Authority may be responsible for enabling works, such as utility diversion, regulatory approvals or connection to interface infrastructure. The link between these activities and the Project Company's activities may present a significant risk. The Procuring Authority may also need to manage the performance of third parties whose projects and/or activities may have a material impact on the PPP contract. For many project types, it is common for the Procuring Authority to be responsible for land acquisition and right-of-way access.

PPP contracts also often require active involvement of the Procuring Authority during the construction period (e.g. sign-off on designs, construction programs, certification of completed milestones). The Procuring Authority needs to respond quickly to avoid being responsible for Project Company delays.

Scope changes and Project Company claims. Any kind of scope change, variation or Project Company claim can have significant financial implications for the Procuring Authority, and robust systems are required to effectively manage them.

Other aspects of PPP projects that require active management by the Procuring Authority team are disputes (the data indicates that 17% of PPPs encounter a dispute in the first four years after financial close), managing renegotiations

(the data indicates that 45% of PPPs are renegotiated by their tenth year after financial close) and information management, which is relevant to many other activities.

The other chapters and sections of this reference tool detail the management of the aspects described above: Section 3.1 (Transitions), Section 3.2 (Performance monitoring), Section 3.3 (Stakeholder management), Section 3.4 (Information management), Section 3.5 (Claims), Chapter 5 (Disputes), etc.

### **Passive contract management**

Most PPP contracts will require a degree of active contract management.

For some PPP contracts, the Procuring Authority may be able to take a more limited role in contract management, if it is exposed to a lower level of risk with less onerous contractual obligations, or if the project is smaller and less complex. For example, in some power purchase agreements (PPAs), a Procuring Authority agrees to purchase energy generated by a Project Company over a certain period of time and provides limited oversight, such as administering performance reports, tariff changes, and performing periodic audits on asset condition and financial performance.

However, even in such cases, the Procuring Authority may also be responsible for the interface with related projects, such as a transmission line for an energy asset. The Procuring Authority would then be exposed to a higher level of risk and more onerous obligations with respect to delivery of the adjoining project. This must be carefully managed and a more active approach is often required.

### **EXAMPLE**

#### **Passive contract management in Brazil**

The energy regulator in Brazil, the National Electric Energy Agency (ANEEL) has recently signed 10 new hydroelectric plants, which have added 2,607 MW of generating capacity. Design, construction and operational requirements are the responsibility of the Project Company, which takes the energy demand risk, and hence the Procuring Authority focusses on a small number of performance indicators associated with the frequency and duration of failures in supply.

### **B. Base the size of the contract management team on the nature of the project and the availability of external resources**

The guidance above describes the need to consider the nature of the role that the Procuring Authority is required to play in managing the relevant PPP contract. These considerations, and the subsequent decision whether to take an active or passive approach to contract management, play a key role in determining the appropriate size of a contract management team.

There is no set formula for the size and structure of a Procuring Authority contract management team. It can vary from a couple of individuals to more than 50, depending on the complexity of the contract and the project and the level of involvement of the Procuring Authority.

Most commonly, the contract management team will comprise a small number of permanent staff (fewer than 10, and often fewer than five). A well-managed PPP may deploy a small core team, which relies on the professional expertise and support provided by other departments within the Procuring Authority, central PPP unit and/or external advisors.

Projects will rarely exist in isolation, and some broader consideration is required by the Procuring Authority when determining the size of the contract management team. Other relevant considerations are detailed below, including whether there is external support that can assist.

**EXAMPLE****Procuring Authority team structures around the world**

In Sao Paulo, Brazil, individual PPP contracts generally require the creation of a dedicated Procuring Authority contract management team. A central PPP taskforce includes PPP professionals, such as lawyers, engineers and economists, as well as administrators with PPP experience who help address key contract management challenges such as renegotiations or rebalancing.

In the Philippines, the PPP Center provides legal, technical, and financial expertise to the Procuring Authority. The PPP Center also helps the Procuring Authority in setting-up and implementing its monitoring regime. This spares the Procuring Authority from having to hire the additional skills needed for setting-up and managing PPP contracts. The Procuring Authority team remains mainly technical.

For highway projects in Colombia, the Procuring Authority, the Colombian National Infrastructure Agency (ANI) creates a team to manage a road project which may consist of around nine people, including specialist legal and financial expertise, as well as having access to a more specialized legal team which sits across around 40 projects.

In Scotland, the Scottish Futures Trust, a public company, provides legal and financial expertise in setting-up a project. It remains involved at a higher level during the construction and operations phases to provide any assistance when necessary. The Procuring Authority team is mainly technical with operations phase monitoring performed at a regional level rather than having a team dedicated to each project.

**C. Ensure the Procuring Authority's contract management team has an appropriate governance structure, and skillset and competencies required for the project**

The governance approach adopted by the Procuring Authority should allow its contract management team to reach effective resolutions on day-to-day issues and make timely decisions on strategic matters.

The core expertise required by the team encompasses contract management, project management, risk management and general commercial negotiation expertise. Additional specialised skills that are required include legal, communications, financial, insurance, technical and administrative expertise. A thorough list of competencies required in a contract management team with respect to continuous training is detailed in Section 2.2 (Contract management team training).

The team should be headed by a contract manager, project manager or project director, whose role is to act as the Procuring Authority's primary representative when dealing with the Project Company. Depending on the nature of the project and resources available to the contract manager (such as external consultants and other government teams), other dedicated performance managers, contract administrators, legal managers, financial managers, communication managers, insurance managers and other technical specialists may also be needed. The team at the contract management level should meet regularly to discuss day-to-day operational management issues.

As this chapter is focused on the contract management team that sits within a Procuring Authority, it does not focus on other governance arrangements, such as the existence of steering or other strategic committees with broader government officials, nor does it focus on any governance arrangement with the Project Company, such as nomination of Project Company board members. Those topics are detailed in Section 3.3 (Stakeholder management).

#### **D. Plan the set-up of the contract management team before financial close**

The contract management team needs to be at least partly in place before financial close to ensure that the transition into the construction phase is smooth and effective. It is also important that both the Project Company and the contractor (and possibly key subcontractors) are required to maintain overlapping staff.

It is advantageous to involve the contract manager in the tender process before financial close.

The contract manager should thoroughly understand the contract from an operational point of view, which can be facilitated by understanding the development of the contract structure following negotiations with the Project Company. Involvement of the contract manager before financial close has an ancillary benefit: to have contract management responsibilities and objectives fully considered in the drafting of the PPP contract before it is signed.

The research indicates that Procuring Authorities often change their contract management team completely following financial close. Where this is the case, a carefully managed and comprehensive handover is vital. Handover at this stage, and staff changes during transitions are detailed in Section 3.1 (Transitions).

#### **E. Centralise resources where there is a program of PPPs and benefits could be generated through synergies between different projects**

The driver for centralising resources is to share specialised professional expertise and functions so they are available as needed across several projects (e.g. legal expertise). It also facilitates the sharing of knowledge between projects within a single jurisdiction and provides PPP training and capacity building. The type of support available will have an impact on the size and expertise needed within a contract management team.

In many jurisdictions, one or more central government bodies support the contract management team. This can take the form of a central PPP unit or a specific support team that sits within the Procuring Authority, which is involved in many PPP contracts. There may also be a sector-specific network established to promote PPPs, such as the Waste Infrastructure Delivery Programme in the UK. Centralised resources can play an important role in staff training, which is detailed in Section 3.2 (Contract management team training).

The extent of involvement of centralised professional expertise in PPP contract management responsibilities on individual projects can vary. For example, Colombia's Agencia Nacional de Infraestructura (ANI) provides extensive support. In many other jurisdictions, PPP units are not as big as ANI and provide only ad hoc or intermittent ongoing support to the Procuring Authority's day-to-day contract management team in terms of specialised expert advice (e.g. legal), PPP training and development, and other contract management support.

#### **EXAMPLE**

##### **The Waste Infrastructure Delivery Programme in the UK**

The Waste Infrastructure Delivery Programme (WIDP) in the UK helps promote best practice and knowledge sharing. The members are encouraged within a closed network to talk openly with peers and share lessons learned. The WIDP has issued a contract manual that is widely used and considered helpful. This network can provide transactional support and any other contract management advice on specific issues, and helps members stay abreast of topical issues and challenges faced by fellow members.

#### **EXAMPLE**

##### **Agencia Nacional de Infraestructura in Colombia**

The Colombian National Infrastructure Agency (ANI), a government agency responsible for PPPs, was set up in 2011 as part of the Ministry for Transport. It has about 700 people leading infrastructure development of around 40 highway PPP projects worth approximately US\$25 billion. As well as the structuring and implementation of PPP contracts, ANI is also responsible for contract management.

**F. Use external consultants where appropriate and ensure transitions between consultants are managed effectively**

Some areas of expertise are best suited to the use of external advisors, such as specialised legal, financial, insurance and technical expertise. However, external advisors can be expensive and it will sometimes be more cost effective to hire permanent staff for those roles. The key to deciding between permanent staff or consultants is how regularly the relevant expertise will be used.

If legal advice is likely to be needed only for a renegotiation or a one-off dispute, then appointing external advisors to fulfil that function may be the appropriate approach. Where a payment mechanism is complicated, involving financial models that need to be understood by the Procuring Authority frequently, it will likely be more cost effective to hire permanent financial resources. Engagement of an independent certifier is common practice to assist the Procuring Authority to monitor the performance of the Project Company. The role of independent certifiers is detailed in Section 3.2 (Performance monitoring).

Continuity of external advisors avoids loss of knowledge and also minimises the administrative effort involved in any change. However, retaining external advisors on a long-term basis can also become an issue for ensuring competitiveness and demonstrating value for money in the procurement of such services. External advisors can provide some continuity of knowledge over the long term, particularly where government policies require public officers to move to different positions after a few years.

Value for money is more achievable when there is adequate competition among potential advisors. Government policies in several countries specify that advisory contracts must be re-tendered on a regular basis. Where this is not the case, the potential costs saving in competitively tendering external services should be balanced against the efficiency losses caused in the transferring of services from one external advisor to another.

Where the Procuring Authority is required to transition between advisors, continuity of knowledge is vital, and the contract management team should manage the advisors involved in a transition to ensure this process is efficient and that knowledge is effectively transferred from an outgoing advisor to the incoming advisor. This is best achieved when there is good understanding within the contract

management team of the service being delivered by the advisors, so the appointments and transitions can be effectively managed.

**EXAMPLE**

**A disadvantage of changing advisors**

The Intercity Express Programme project in the UK highlights the importance of retaining key staff and advisors for a long period of time whenever possible. In this project, the Procuring Authority was required by central government policies to re-tender its advisory contracts, which resulted in a change of some of its advisors, creating inefficiencies as documents and knowledge had to be transferred.

*For more information, see the Intercity Express Programme Case Study.*

**G. Evaluate the structure and resourcing of the contract management team on an ongoing basis and make adjustments as necessary**

It is important to recognise the changing nature of the contract management workload throughout the life of a project. The changing responsibilities of the Procuring Authority are detailed in Section 3.1 (Transitions). The effect of this is that a contract management team needs to periodically re-assess the scope of the work required and whether it has adequate staff to fulfil the required tasks. Two key factors that change over time are risk and the frequency of issues arising.

For example, where a Procuring Authority is responsible for land acquisition for a highway project, which is completed over the course of the construction period. The risk and responsibility associated with this activity decrease over time, while others continue throughout the life of a project.

The frequency of issues is also relevant. Some activities are performed on a day-to-day basis, some on a periodic basis and others, while performed rarely and on an ad hoc basis, may have major implications on the PPP contract and require extensive resources from the contract management team (e.g. dealing with a large dispute or claim or a renegotiation).

The Procuring Authority should also scrutinise how well the Project Company's self-monitoring



is working and alter its internal procedures accordingly. Where the Procuring Authority is not satisfied with the quality of the service being provided by the Project Company, it may be appropriate to increase its own level of monitoring. Some PPP contracts also give the Procuring Authority the right to increase its monitoring at the cost of the Project Company. Performance monitoring is detailed in Section 3.2 (Performance monitoring).

#### EXAMPLE

### Increased responsibilities during design and construction

The I-495 Express Lanes project in the USA highlights the need to commit additional resources during peak production periods to meet contract management obligations. In that project, the Procuring Authority needed to commit appropriate resources throughout various phases of project delivery and increased resources during peak production periods (both design and construction). This helped to expedite progress and assisted in schedule recovery, resulting in opening the project 45 days ahead of schedule.

*For more information, see the I-495 Express Lanes Case Study.*

#### H. Plan for staff turnover and ensure adequate procedures are in place to manage continuity of knowledge

The composition of the contract management team is likely to change over the life of a project, which can be more than 30 years. Continuity of knowledge is a challenge for all major projects, especially those with long life spans such as PPPs. The team therefore needs to be managed in such a way that performance does not suffer over time. It is important to have procedures in place to ensure knowledge is retained and passed on when staff leave.

Teams generally change between stages of a project, with distinct skills required during procurement, construction and operations, detailed in Section 3.1 (Transitions). This carries the risk of loss of knowledge with departing team members.

The research highlighted the important role a Procuring Authority's leaders can play in the overall success of a project. In some instances the Procuring Authority recruits these leaders on a long-term contract basis, as recognised leaders within the industry, who are capable of taking charge of the overall success of the project.

#### EXAMPLE

### Continuity of key staff

A range of projects highlighted the benefits of the continuity of key staff through the different stages of a project.

On a waste project in the UK, the majority of Procuring Authority staff were involved in the procurement process, and hence had a good knowledge of the contract.

The Segarra Garrigues Irrigation System project in Spain highlighted the benefit of having continuation of staff between the construction and operations phases.

*For more information, see the Segarra Garrigues Irrigation System Case Study.*

The Procuring Authority should, however, avoid the situation where it is too reliant on any single individual. One way of doing this is by having adequate succession plans in place. In some jurisdictions there are restrictions around public sector employees staying in a particular post for more than a few years, which presents an added challenge for contract management of long-term projects such as PPPs.

Training new employees is important to the continuity of knowledge; they must be brought up to speed on the project through the handover process. Information management is also important in this respect, and the Procuring Authority needs to ensure that information is recorded effectively and comprehensively, so new employees can access the full details of the project in a systematic manner. Training requirements are detailed in Section 2.2 (Contract management team training) and information management is detailed in Section 3.4 (Information management).

### **I. Consider setting up the contract management team in a way that mitigates the risk of a change in government or policy**

Challenges may arise with a new central or regional government due to newly elected politicians that may not be familiar with the project, having a different approach to the project or having a mandate to change the approach to PPPs.

One way of managing this is to set up a dedicated team to manage the PPP projects project, and in such a way to mitigate, to the extent possible, the risk of external political changes having an adverse impact on the project, to the extent possible.

Changes can also be managed by deploying specialised legal or other expertise. For example, where a change requires a renegotiation, or a change in law or material adverse government action claim, which are detailed in Section 3.5 (Claims) and Chapter 4 (Renegotiation). Guidance on managing a transition between governments is detailed in Section 3.1 (Transitions).

#### **EXAMPLE**

### **Setting up a dedicated management agency**

The Procuring Authority for the Gautrain Rapid Rail Link project in South Africa began as the Department for Roads and Transport in the Gauteng Province. Given the size and complexity of the project, a specialised agency, the Gautrain Management Agency, was set up to monitor and manage the project. This allowed the team to focus entirely on the project and its challenges, although it still relied on external consultants.

*For more information, see the Gautrain Rapid Rail Link Case Study.*

#### **EXAMPLE**

### **Setting up a dedicated Project Management Unit**

The Project Management Unit (PMU), established by the Jordanian Ministry of Transport on the Queen Alia International Airport Expansion project in Jordan, played a key role in managing the risk of political and institutional changes that were not related to the project itself. The airport expansion was a high-profile, high-value project, which meant setting up a dedicated unit was the most effective solution. The PMU team had sufficient authority and remained the same throughout a variety of political changes, ensuring continuity of knowledge and contract management.

*For more information, see the Queen Alia International Airport Expansion Case Study.*

## 2.2 Contract management team training

Infrastructure projects span a long period through both the construction and operational phases, and employee skills need to be kept up-to-date. It is reasonable to expect changes in staff, regulation, law and technology over the life of a PPP project.

The goal of contract management team training is to ensure the continuity of knowledge across new staff, strengthen the understanding of the processes already in place for current staff, and develop the skills to be up-to-date with the current industry standards. These goals in return will contribute to the continuity of contract management functions, which is key to successfully managing PPP projects after financial close.

The challenges faced in staff training range from cultural to technical and managerial. In some cases, the project requires a complete transformation of the work culture. For example, this can be the case if an asset, such as an airport, is being run with private involvement for the first time. A change in the work culture will need to occur if the members of the Procuring Authority team are accustomed to more confrontational, fixed-fee type contracts, such as fixed-fee construction contracts, rather than the collaborative environment required for PPPs.

There are two key areas of training that need to be put in place by the Procuring Authority contract management team:

- Project specific training, which covers the PPP contract and processes in place, as defined contractually
- General training on managing PPP projects

### SECTION STRUCTURE

This section provides guidance on contract management team training. The key elements of successful contract management team training are summarised below and discussed in detail in Subsection 2.2.1 (Guidance):

- A. Prepare a training program to cover all relevant topics, including PPP-specific topics and general training in contract management
- B. Consider arranging joint training between Project Company staff and Procuring Authority staff
- C. Use appropriate external resources to deliver training programs
- D. Consider developing a PPP contract management manual

**2.2.1 Guidance**

**A. Prepare a training program to cover all relevant topics, including PPP-specific topics and general training in contract management**

The Procuring Authority must plan for both initial and ongoing training of its contract management team. Training required during specific periods is detailed in Section 3.1 (Transitions).

Staff skill levels can vary significantly across a newly formed team, and tailored training is necessary to address the different capabilities and align all personnel to a common level of capacity.

Members of the Procuring Authority’s contract management team will typically need to be trained in the following areas, which are PPP specific:

- mobilisation, transitions and handback
- performance monitoring
- payment mechanisms and their application
- financial models and project financing
- stakeholder management and helpdesk
- claims management
- contractual scope change or variation management
- dispute resolution mechanisms and management
- the PPP contract and all relevant time periods
- PPP risk allocation and implications of the selected procurement model for the project
- other aspects related to the application of the contract (such as relevant notice periods)

Contract management staff will also require general training in contract management:

- project management
- risk management
- commercial skills
- issue resolution and negotiation skills
- health and safety, and environmental management
- data and information management
- effective communications planning
- promoting successful partnerships

**B. Consider arranging joint training between Project Company staff and Procuring Authority staff**

Training is not exclusive to the Procuring Authority’s contract management team. In some circumstances it may be in the best interest of the Procuring Authority to ensure that the Project Company’s personnel have access to joint training.

For instance, on some projects, a Project Company (or its subcontractors) may not be fully familiar with local working practices. Joint training may therefore be an option to address gaps in the Project Company’s (or its subcontractors’) knowledge of local or national laws and regulations.

Having private sector staff involved in the training may also help to develop the knowledge and skillset of the Procuring Authority’s contract management team and their understanding of the drivers of the Project Company.

In addition to the benefit of training Procuring Authority staff, joint training fosters the relationship between parties, building mutual respect and trust.

**EXAMPLE**

**Joint training program**

The Qiaoxi District Central Heating project in China highlights how experience of the private sector can assist Procuring Authorities with their training programs. On this project, the training for the Procuring Authority staff is primarily ‘on the job’, with employees learning from the technical staff of one of the equity investors in the Project Company, Beijing Yuantong Heat Company Ltd, a private company specialising in heat supply and management.

*For more information, see the Qiaoxi District Central Heating Case Study.*

**C. Use appropriate external resources to deliver training programs**

A national PPP unit, central PPP task force or other sector-specific network can assist a Procuring Authority, or take the lead in training and development. Centralised resources are detailed in Section 2.1 (Contract management team set-up). The Procuring Authority can also conduct training internally, with support from another government agency, or with the involvement of external consultants (or a combination of the above).

Available support may include:

- **Implementing training programs.** A central authority may be able to run programs to improve the skills of employees across multiple projects or sectors where this may not be cost effective for a single PPP. If the central authority has the technical, legal or financial expertise to run this type of program this may be the optimum approach.
- **Developing common tools.** In a similar way to training programs, a central authority may be able to develop tools and standard contract documentation for use across several projects. For example, a standardised contract management manual that can be modified to suit individual projects, saving the project team the effort of developing this resource from scratch.
- **Sharing knowledge, lessons learned and good practice.** Procuring Authority interviewees in the UK waste sector spoke highly of the Waste Infrastructure Delivery Programme, which gathers together contract managers to coordinate and share lessons learned. A similar initiative could be undertaken in jurisdictions where there is a pipeline of PPP projects, and a government commitment or policy to consider PPP procurement.

#### EXAMPLE

### Training during the transition from financial close to construction

To assist with knowledge transfer on the Barranquilla Airport project in Colombia, workshops were carried out with new staff joining after contract award by representatives from ANI's (Colombia's National Infrastructure Agency) central knowledge teams, and the ANI team and consultants that structured the contract. The external consultants involved in the structuring, also worked hand-in-hand with the Procuring Authority for six months after contract signing and provided continued support, as and when necessary.

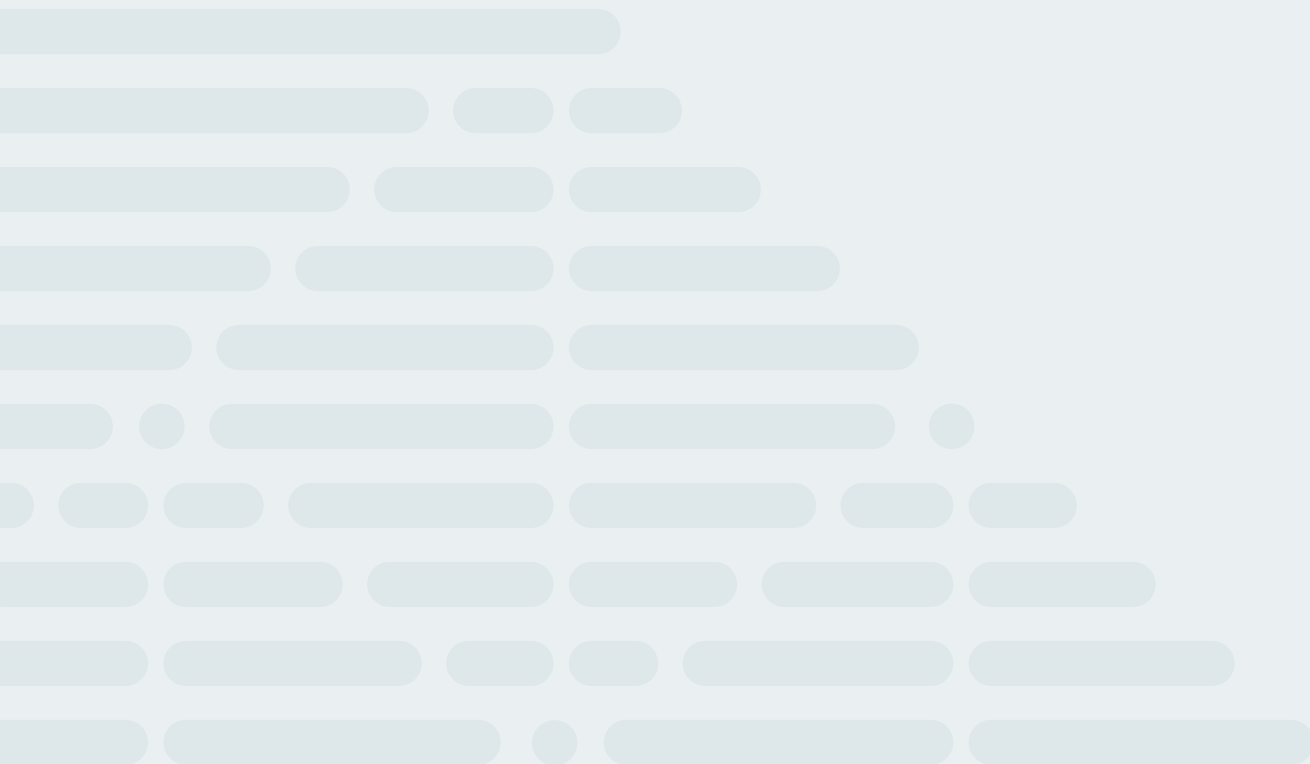
*For more information, see the Barranquilla Airport Case Study.*

#### D. Consider developing a PPP contract management manual

The research recognised the benefits of a contract management manual, which is a working document that facilitates the initial transition period between the procurement phase and the operational phase, and the subsequent transition between contract managers over the life of the contract. Any contract management manual requires ongoing development and customisation to suit the needs of a specific project.

Approximately 30% of projects investigated globally were found to use a form of contract management manual; however, there was significant variation between regions. Most projects in Australia and North America reported using a contract management manual, while use was much lower in Latin America and the Middle East. A number of existing contract management manuals have been identified as part of the existing literature review.

# Routine Contract Management



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### 3 Construction and operations routine contract management

Routine contract management involves tasks that either occur on a regular basis or are expected to occur at least once over the life of a contract. It includes ongoing tasks, such as performance monitoring and the management of relationships with the Project Company or stakeholders, as well as discrete events such as managing the transitions between different phases of project development.

The topics covered in this chapter are:

- Transitions (Section 3.1)
- Performance monitoring (Section 3.2)
- Stakeholder management (Section 3.3)
- Information management (Section 3.4)
- Claims (Section 3.5)
- Change of ownership (Section 3.6)
- Refinancing (Section 3.7)

#### 3.1 Managing transitions

All PPP projects experience transitions between different phases of the project (i.e. from financial close to construction, from construction to operations, and from operations to handback). This is displayed in Figure 1. Each of these transitions represents a period of substantial change, typically involving turnover of staff within both the Procuring Authority and the Project Company, as well as new responsibilities and challenges.

Each transition typically includes a period of mobilisation which requires extra cooperation between the Project Company and Procuring Authority. For example, some joint training and inductions may be required at the start of operations and service commencement. In addition, there are often specific requirements that must be met during transition, and before a new phase can officially start. For example, conditions related to construction commencement or handback requirements, which are required to be met before the project is handed back to the government.

If handled inadequately, issues that arise during a transition period can continue to cause problems throughout the life of the project, leading to additional costs for the Procuring Authority or negatively affecting the level of service provided. This section 3.1 provides guidance on how to successfully manage transition periods and minimise any negative impacts on the project.

The guidance is split into three distinct transition periods related to the development of the project itself, and a fourth related to external factors:

- Financial close to construction (Subsection 3.1.1)
- Construction to operations (Subsection 3.1.2)
- Operations to handback (Subsection 3.1.3)
- Change in government administration or government policy (Subsection 3.1.4)

*Figure 1: PPP project life cycle for a typical greenfield project, showing transitions between phases*





### 3.1.1 Financial close to construction

Financial close refers to the point at the end of the procurement phase where the PPP contract has been signed, any conditions precedent for financing are met and financing is in place so that the Project Company can commence construction. This subsection 3.1.1 provides guidance on the transition to construction for both greenfield and brownfield projects, acknowledging that on some brownfield projects, the construction and operations periods may start concurrently.

Because the transition to construction occurs at the beginning of the project, it has potential to substantially influence the long-term success of the project, either positively or negatively. The Procuring Authority should plan for the transition thoroughly to ensure that the construction phase has a strong and uninterrupted start. A well managed transition can also highlight any weaknesses in the contract drafting, enabling them to be rectified at the operational level before they escalate into disagreements, which can lead to, delays and disputes.

#### EXAMPLE

#### Transition planning

The Project Company on the Qiaoxi District Central Heating project in China was required under the PPP contract to provide heating services no later than the date of commencement (allowing one third of the usual days needed). By arranging for the storage of additional fuel, and by a number of the Project Company's equity investor's experienced maintenance employees providing assistance in advance, the Project Company was able to carry out the transition without interruption to the services.

*For more information, see the Qiaoxi District Central Heating Case Study.*

#### SUBSECTION STRUCTURE

This subsection provides guidance on managing the transition from financial close to construction. The key elements of successfully managing the transition are summarised below and detailed in this subsection under the heading 'Guidance':

- A. Focus on setting up an effective contract management team
- B. Ensure adequate resourcing is employed for sign off on design and other documentation
- C. Work closely with the Project Company with respect to any delays in land acquisition
- D. Ensure good resettlement practices are adopted where land acquisition affects local communities
- E. Collaborate with the Project Company where appropriate to ensure permitting issues are resolved efficiently
- F. Engage with other relevant government agencies early to ensure potential delays are mitigated

In addition, the Attachment (Financial close to construction checklist) to this subsection sets out a template checklist that can be followed by a Procuring Authority when managing a transition from financial close to construction.

## GUIDANCE

### A. Focus on setting up an effective contract management team

The transition from financial close to the start of construction marks the stage by which the Procuring Authority's project specific contract management team needs to be set up and trained. As detailed in Chapter 2 (Contract management team set-up and training), this is a key task which should be carefully planned and reviewed, as the skillset required post financial close is fundamentally different from the transactional expertise needed to reach financial close.

It is recommended that procurement and contract management staff overlap to some extent before and after financial close, to allow sufficient time for training and knowledge sharing. It is also important that both the Project Company and the contractor (and possibly key subcontractors) are required to maintain overlapping staff from procurement to construction.

The research indicates that Procuring Authorities often change their contract management team completely following financial close. Where this is the case, a carefully managed and comprehensive handover is vital.

Hiring staff can also be a lengthy process, and the process may take even longer in less developed markets where there may not be as many people available with relevant experience.

#### EXAMPLE

### Training during the transition from financial close to construction

To assist with knowledge transfer on the Barranquilla Airport project in Colombia, workshops were carried out with new staff joining after contract award by representatives from ANI's (Colombia's National Infrastructure Agency) central knowledge teams, and the ANI team and consultants that structured the contract. The external consultants involved in the structuring, also worked hand-in-hand with the Procuring Authority for six months after contract signing and provide continued support, as and when necessary.

***For more information, see the Barranquilla Airport Case Study.***

### B. Ensure adequate resourcing is employed for sign off on design and other documentation

The Procuring Authority needs to understand and prepare its team for the volume of data and documentation that it will be required to review and sign off during the transition from financial close to construction. It is common for the Procuring Authority to require oversight of detailed design and the quality of materials, and therefore it needs the team and processes in place to support this oversight and to ensure that it can respond within the timelines set in the PPP contract. PPP projects can involve greater discretion for the Project Company to design the project than what would typically be seen in a traditional design and construct contract. This will mean that the design sign-off procedures will be more complex than what they would be if the Procuring Authority had contracted directly with the construction contractor. This additional complexity should be taken into account to ensure that the Procuring Authority complies with its approval obligations in the time required in the PPP contract.

### C. Work closely with the Project Company with respect to any delays in land acquisition

Land acquisition refers to the act of acquiring title in the land required for infrastructure delivery. In addition to requirements of land acquisition, there can be a need to establish right of way without having to purchase land. Relocation and diversion of utilities may also be required before the construction can begin, which will raise similar issues.

Procuring Authorities should work closely with Project Companies with respect to any delays in land acquisition during this transition phase. Availability of land is integral to the construction schedule, so where land is not available at the time it was contemplated, it will likely cause delays.

There is often political pressure to achieve financial close on a project before all the required land acquisitions have been completed, in order for it to be seen to have started. One way of managing this is through appropriate use of early works agreements to enable some work to begin before financial close.

Where financial close is achieved before all required land acquisitions have occurred, the Procuring Authority should keep the Project Company informed of the acquisition progress so that any delays can be managed from a very early stage by both parties, including agreeing to changes in the construction schedule and compensation where appropriate. Claims are detailed in Section 3.5 (Claims).

Land acquisition is particularly challenging for linear projects with extensive land requirements, such as road and rail projects and transmission lines. Densely populated areas also make land acquisition a difficult issue in most regions. Expropriation of land may involve lengthy negotiations with existing landowners, court proceedings and the need for a detailed resettlement strategy – a process which generally takes longer than anticipated. In some jurisdictions land ownership is very fragmented, making land acquisition more challenging.

Different aspects of land acquisition may also require specific third-party agreements with stakeholders, such as shop owners and utility owners affected by the construction activities or the new infrastructure, which should be managed in a well-planned and consistent manner.

#### EXAMPLE

#### Delays caused by land acquisition delays

The Gautrain Rapid Rail Link project in South Africa highlights the complexities and consequent delays that can arise due to land acquisition. In that project, pressure to meet the FIFA World Cup deadline meant that work on land acquisition was not completed before construction. It noted that challenges are not only due to non-supportive land owners, but relevant stakeholders will often have concerns over other issues such as environmental impact.

*For more information, see the Gautrain Rapid Rail Link Case Study.*

#### D. Ensure good resettlement practices are adopted where land acquisition affects local communities

Acquiring land or right of way may involve resettlement of local populations and compensation for lost economic uses such as agriculture and other economic and social benefits. Poor resettlement practices have the potential to lead to adverse social outcomes (such as protests) and reputational damage and so need to be managed carefully by the Procuring Authority (irrespective of which party is responsible for the risk of resettlement). Court proceedings, as they relate to poor practices in resettlement, also have the potential to affect access to land.

Resettlement action plans typically require Procuring Authorities to meet both national and lender requirements (such as development bank safeguard requirements). This is a complex topic and the reference tool does not attempt to address the issue in detail.

#### E. Collaborate with the Project Company where appropriate to ensure permitting issues are resolved efficiently

The Procuring Authority can play an important role in ensuring timely agreement on environmental and other permits required. These permits are generally issued by regulatory stakeholders, with whom the Procuring Authority may have ongoing relationships.

In some urban areas, and in environmentally sensitive areas, the number of permits to be secured for construction works and the associated burden can be high. Therefore it may be appropriate that the parties work together in a coordinated fashion in order to secure approvals and permits in a timely manner.

#### EXAMPLE

#### Environmental permits

The responsibility for acquiring permits in Brazil typically rests with the Project Company, as was the case in the 500kV Tucuruí-Jurupari Transmission Line project in Brazil. Delays in obtaining construction permits in Brazil have previously led to delays in starting construction, and a reduction of the operational period. Contract drafting has evolved in Brazil such that new PPP contracts now define the environmental permitting as a shared risk and allow more time for permitting.

*For more information, see the 500kV Tucuruí-Jurupari Transmission Line Case Study.*

**EXAMPLE****Construction permits**

One issue that occurred during construction of the Brabo 1 Light Rail project in Belgium was a situation in which the Project Company's construction permit was revoked because of public objections to the proposed developments. A new permit was, however, issued a few months later. Together with the Project Company, the Procuring Authority worked as a partner to resolve the issue.

*For more information, see the **Brabo 1 Light Rail Case Study**.*

**F. Engage with other relevant government agencies early to ensure potential delays are mitigated**

Where local authorities have a degree of separation from other relevant government bodies, it is essential that they are involved as early as possible. In some jurisdictions, local authorities can impose taxes on particular projects or can delay projects procured by the national or state government by not issuing, withholding or revoking relevant permits required for construction works. It is important that these stakeholders are involved pre-financial close to make sure any additional requirements are adequately addressed.

For example, in India land management is under the jurisdiction of individual states and a dedicated authority for land acquisition, over which the relevant Procuring Authority often has no control. The National Highways Authority of India has experienced major delays on some highways PPPs as a result of delayed land acquisition. As a result, the Procuring Authority typically enters into state support agreements with the relevant states upfront to facilitate efficient land acquisition. Stakeholder engagement with respect to other government stakeholders is detailed in Section 3.3 (Stakeholder management).

### **ATTACHMENT: Financial close to construction checklist**

The template checklist below can be used by a Procuring Authority when approaching the transition phase between financial close and construction.

- Recognise that the PPP contract documentation is voluminous and complex and not to be used as the sole operational tool.
- Create a clear understanding in the contract management team of what the PPP contract caters for and incorporate key contract terms into a user-friendly contract manual.
- Clearly define all roles related to preparing/ updating and maintaining the project specific contract management manual, bearing in mind that this manual is not a substitute for the PPP contract but is a tool to be used to better navigate the PPP contract.
- Carry out engagement with key stakeholders (e.g. local authorities, regulators, utility providers and any other third parties) whose approvals, agreement or permits may be required to enable the commencement of construction works.
- Engage end users and other affected parties throughout the process.
- Address land acquisition and access issues as early as possible and be aware of both government and lender requirements (e.g. multilateral development banks) on resettlement action plans and compensation.
- Maintain clear records and data management procedures in relation to resettlement actions and compensation to ensure transparency and to address subsequent disagreements.
- Keep the contract management manual up to date with an 'operational diary' and procedural matters for the Procuring Authority.
- Share relevant parts of the contract management manual with the Project Company to foster coordination.
- Test the Project Company's performance management tools in advance of PPP contract commencement to ensure they are functional and compliant with the Procuring Authority's systems.

### 3.1.2 Construction to operations

The transition from construction to operations covers the period when the infrastructure has been built and is ready to commence operations. An additional element of this phase is sometimes referred to as the 'bedding-in' phase, where full payment deductions ordinarily available to the Procuring Authority may be discounted for several months to allow the Project Company to settle in to the operations phase without being penalised.

This phase can be a time of increased tension between the Procuring Authority and the Project Company because of the contractual milestones and payments involved, as well as a change of contractors.

#### SUBSECTION STRUCTURE

This subsection provides guidance on managing the transition from construction to operations. The key elements of successfully managing the transition are summarised below and detailed in this subsection under the heading 'Guidance':

- A. Ensure adequate resourcing is employed for testing and commissioning
- B. Plan for testing and commissioning early, and consider establishing a testing and commissioning panel
- C. Allow adequate time for the parties to become familiar with the operational Key Performance Indicators and payment mechanisms
- D. Focus on the relationship with the Project Company during the transition between construction and operations, and mitigate the risk of disputes

#### GUIDANCE

##### A. Ensure adequate resourcing is employed for testing and commissioning

Testing and commissioning is a distinct activity marking the transition from construction to service operation. As construction works come to an end, as part of its mobilisation for the operations phase, the Project Company must meet specific contract requirements in order to demonstrate the project's readiness for operations. The Procuring Authority is required, as part of the contract, to monitor whether these conditions have been satisfied and provide sign off, which can be a complex and time consuming task.

Testing and commissioning activities carried out by the Project Company have to be carefully coordinated with the equivalent verification activities required by the Procuring Authority. This process may also involve a number of third parties engaged to carry out the tests, or to independently verify testing and commissioning results.

The Procuring Authority will wish to utilise the full duration of the testing and commissioning period to ensure that the quality of the asset matches its expectations and standard. However, it may also be under political pressure to reach the service commencement date within tight time constraints (e.g. the service commencement of a stadium for a sporting event). The Project Company may also be applying pressure on the Procuring Authority to sign off the works as availability of revenue is often dependent on completion of the construction works, and so late delivery will erode potential Project Company profit. Rushing testing and commissioning may lead to the parties agreeing to move forward and commence service with an 'extended' list of defects, which is effectively incomplete work that causes issues down the track.

Because of the importance of this transition stage, the number of activities that must be carried out by multiple parties, and the prolonged duration, this stage presents a significant challenge to service commencement. The strategy for testing and commissioning has a significant impact on the success of the transition. The parties involved should agree on a seamless and effective procedure eliminating unnecessary delays in operation.

The specific testing and commissioning requirements are set out in the relevant PPP contract, but typically include signing off that:

- the construction works are complete except for minor defects

- any minor defects have been agreed with the Procuring Authority
- any testing required has been carried out and passed
- both parties have agreed on the safety audit
- the performance monitoring system is ready for operation
- a service execution plan is agreed with the Procuring Authority
- a monitoring plan is agreed with the Procuring Authority
- performance failure definitions and verification methods have been validated by both parties

### **B. Plan for testing and commissioning early, and consider establishing a testing and commissioning panel**

One issue at this transition stage is that technical experts are often not sufficiently involved in the preparation of the PPP contract in relation to testing and commissioning – leading to a potential for unrealistic requirements. In particularly complicated projects with multiple assets, there may be requirements for independent testers to respond within a matter of days against complex testing criteria, which in practice requires weeks to prove to the relevant level of sign off. This can cause unnecessary tension among stakeholders and requires the Procuring Authority to be realistic about the overall construction timeline and desired commencement dates.

#### **EXAMPLE**

### **Early planning for testing and commissioning**

The I-495 Express Lanes project in the USA highlights the need to build adequate time into the project schedule for testing and commissioning of complex tolling and traffic management systems. For that project, it was noted that detailed planning and coordination for the road opening and commencement of tolling should begin at least one year prior to the anticipated opening date.

*For more information, see the I-495 Express Lanes Case Study.*

A testing and commissioning panel can be set up to manage the challenge of a smooth transition from construction to operations. This panel may consist of representatives of the Procuring Authority, the Project Company, the construction contractor and the operations contractor. It should be set up before the commencement of testing and commissioning.

#### **EXAMPLE**

### **Operational readiness and airport transfer team in Jordan**

An example of a testing and commissioning panel is highlighted in the Queen Alia International Airport Expansion project in Jordan, where the Project Company formed an 'Operational Readiness and Airport Transfer' team two years prior to service commencement. The Procuring Authority was closely involved, and the planning paid off with a successful transition.

*For more information, see the Queen Alia International Airport Expansion Case Study.*

### **C. Allow adequate time for the parties to become familiar with the operational Key Performance Indicators and payment mechanisms**

Key Performance Indicators (KPIs) either contain detailed descriptions or leave room for interpretation. Therefore, a ramp-up period can be helpful to allow parties to understand the intent of the project's KPIs and a test performance evaluation can start before official commencement of the operations phase.

The practical implementation and verification of operational KPIs, and the associated definition of performance failures and payment deductions, is a challenge at the beginning of the operations phase. The definition of performance failure can be a source of tension, given its importance to the revenue of the Project Company. This is particularly relevant if the contract drafting is not clear in terms of recording performance levels and applying payment deductions.

During this period the Procuring Authority should make sure that the Project Company's quality management and management information system, performance monitoring procedures, overall reporting mechanism, and audit trail supporting the Project Company's assessment of performance, are robust and tie in with the Procuring Authority's

governance and payment processes.

The administrative staff of the Procuring Authority may not have experience in making large payments during the operations phase (particularly if they are more familiar with traditionally procured projects where there won't be a large debt service component to the payments during operations). The Procuring Authority should ensure that staff are knowledgeable on internal procedures and payment mechanisms well before the deadline for the first payment becomes due.

Guidance on KPIs and payment mechanisms is detailed in Section 3.2 (Performance monitoring).

#### EXAMPLE

### Operations 'bedding-in' periods

Several case studies highlight the need to allow adequate time for the parties to become familiar with operational KPIs including allowing 'bedding-in' periods for both the Project Company and the Procuring Authority to establish teams, procedures and plans in the first months of operations.

*For more information, see the **Brabo 1 Light Rail Case Study** and the **Port of Miami Tunnel Case Study***

#### D. Focus on the relationship with the Project Company during the transition between construction and operations, and mitigate the risk of disputes

Testing and commissioning issues can pose a significant risk to the relationship between parties. Stakeholder management with respect to the Project Company is detailed in Section 3.3 (Stakeholder management).

The research indicated that the Project Company and Procuring Authority sometimes retreat to an adversarial contractual position when disagreements arise during testing and commissioning. On one side, the Project Company is interested in ensuring that testing and commissioning is completed on time, as it typically triggers available payment. Agreed compensation is also typically payable to the Procuring Authority if completion of construction is delayed. On the other side, the Procuring Authority typically wishes to utilise the full duration of the period contractually available to complete testing and commissioning and to ensure that the quality of the asset matches

its expectations and standards.

The skillset required during the operational phase is different from the management and oversight expertise needed during construction. There may be a need to change staff at this stage to account for the change in tasks required, although key staff need to be retained over both phases to ensure knowledge continuity. In addition, this is the period when there is a distinct team change on the Project Company side.

The changes in staff on both sides can create an opportunity for the establishment of a new relationship and different team dynamics. The time needed to rebuild the relationship with the Project Company at this stage should not be underestimated. Joint training and inductions may be valuable at the start of operations and service commencement to help build the relationship.

Notwithstanding the opportunities to build a strong relationship during this transition, several of the projects studied experienced delays in reaching the operations phase in part due to adversarial relationships that were created during the testing and commissioning stage. This implies that this period may also carry a higher risk of disputes. For example, a dispute over commissioning on one waste PPP in the study has gone to court and is threatening the viability of the project itself. This is also a time when there is an increased likelihood of the Project Company bringing forward claims for cost overruns, as this stage gives the Project Company and/or the construction contractor a clear view of the overall cost position for the construction phase. Claims are detailed in Section 3.5 (Claims) and disputes are detailed in Chapter 5 (Disputes).

#### EXAMPLE

### Staff training

The parties on the Queen Alia International Airport Expansion project in Jordan understood the challenges of transition phases from an early stage, and careful planning started two years before the transition from construction to operations. The effective transition management, as well as early planning and training, ensured good transfer of knowledge from the construction team to the operations team and helped overall readiness for service commencement.

*For more information, see the **Queen Alia International Airport Expansion Case Study**.*



**EXAMPLE****Construction to operations**

Sections of the completed Segarra Garrigues Irrigation System project in Spain began operations while construction was ongoing in other sections, so there has been a crossover period of many years. This is a challenge for the Procuring Authority, who has to manage both the construction and operation phases simultaneously.

*For more information, see the Segarra Garrigues Irrigation System Case Study.*

**3.1.3 Operations to handback**

The operations to handback transition covers the period where the original PPP contract is coming to an end. This generally involves the asset or the operation of the asset being handed back to the Procuring Authority, or to a new Project Company or new operator. This transition is important as it will affect the ongoing provision of the public service, and the research indicates that it is sometimes not given the appropriate proactive, strategic consideration. The Project Company must comply with contractually stipulated handback requirements that should prescribe the asset condition to be demonstrated at the end of the contract term. The required asset condition may be described by technical standards, which should be measurable in order to be verified independently.

A key challenge at the handback stage is the commercial pressure for the Project Company to drive economic efficiencies in its maintenance activities in the period leading up to handback, which may lead to a deterioration in the asset condition. While there were limited examples of handback being implemented in the study, the research indicated that it is not unusual for the Project Company to 'sweat the asset' (i.e. try to extract as much value from the asset as possible while doing the least amount of maintenance, such that the asset handed back to the Procuring Authority is in need of extensive repair). If the Procuring Authority does not manage this phase adequately, it can find itself with an asset in an undesirable condition.

**SUBSECTION STRUCTURE**

This subsection provides guidance on managing handback. The key elements of successfully managing the transition are summarised below and detailed in this subsection under the heading 'Guidance':

- A. Ensure the PPP contract contains protections around asset handback and that those protections are understood and utilised
- B. Plan for handback (or the transfer to a new Project Company or operator) well in advance of the end of the PPP contract

## GUIDANCE

### A. Ensure the PPP contract contains protections around asset handback and that those protections are understood and utilised

Key contractual protections to mitigate the risk of deterioration in the asset condition prior to handback in a PPP contract are set out below. These protections are not addressed in detail in this reference tool, as they should be considered carefully when agreeing the PPP contract (which is not the focus of this reference tool). The protection mechanisms relevant to the PPP contract and project in question should be well understood and utilised to protect the interests of the Procuring Authority.

- PPP contracts should have a clear and well-defined asset handback standards to leave less room for the Project Company to hand back an asset in a substandard condition.
- Requiring the establishment of a contingency fund for any maintenance requirements after handback. Here the Procuring Authority will retain money (or security, such as a letter of credit) that can be used to complete required maintenance after handback. If there is no additional maintenance required, the money will be repaid to the Project Company, thus incentivising the Project Company not to 'sweat the asset'.
- The Project Company can be required to hand back the project to the Procuring Authority in a condition that would meet the handback standards as defined in the PPP contract for a specified period (e.g. five years after handback).

It is worth noting that very few PPP projects have reached the expiry date for some of these handback provisions to become effective. In other words, unlike other provisions of PPP contracts, the application of certain handback mechanisms is still largely uncharted territory from a global practice perspective.

#### EXAMPLE

#### Maintenance reserve account

For the Zaragoza Tramway project in Spain, the Project Company is required to pay 5% of its availability payments into a 'Reserve Account', which will be used to pay for any additional maintenance activities that are required leading up to handback.

*For more information, see the Zaragoza Tramway Case Study.*

### B. Plan for handback (or the transfer to a new Project Company or operator) well in advance of the end of the PPP contract

The main approach the Procuring Authority can take to manage handback is to plan the process proactively. Depending on the size and complexity of the relevant asset, the Procuring Authority may need to start planning for handback three years or more before the expiration of the PPP contract.

It is recommended that consultation with relevant stakeholders take place at this early stage. This can assist the Procuring Authority to identify options for procurement strategies and/or potential operations contracts for the continuation of the services after handback has occurred.

A handback plan focuses on two key areas:

- Ensuring the asset meets the contractual requirement for handback
- Ensuring continuity of the service provided by the asset

On the first point, it is important that the Procuring Authority revisits the PPP contract and understands what the contractual obligations and entitlements are when the asset is handed back. The Procuring Authority must have a clear understanding of its goals for the end of the contract term, what the contract requires and what condition the asset is actually in leading up to handback. This will ensure the Procuring Authority does not receive the asset in a condition below the standards defined in the PPP contract.

Before commencement of the handback process, the Procuring Authority should also have a plan for how the testing and inspection of the asset condition will be performed, what audits will be carried out, and how the results will be used to measure compliance with the contract. During this process, the Procuring Authority should work with the Project Company to ensure both parties are aligned in terms of what condition the asset will be handed back in. If the asset is being transferred to a new Project Company or a new operator, that new Project Company should also be involved. This will benefit all parties, particularly where payments to the exiting Project Company are being withheld as contingency.

The Procuring Authority should also have a plan for how it will ensure service continuity. There should be a decision on whether the asset will be operated by the Procuring Authority, the current contract will be extended, a new operational contract will be tendered

or a new PPP contract will be tendered. While the option of extending the existing contract may seem to be the most straightforward option, this is unlikely to provide the best value for money for the Procuring Authority, as the negotiation of the extension is typically carried out in the absence of competition.

In addition, as part of its transition to handback, the Procuring Authority should address issues such as the creation of an inventory of assets and goods, any indemnification required to a new Project Company or new operator (where the project is being retendered), and staff transfer, including budgeting issues related to new staff.

### 3.1.4 Change in government administration or government policy

The research highlighted that the transition from one government administration to another or a change in policy or law or regulation may create similar challenges to those described above in this section 3.1.

Where any major change is required on a project, particularly where it involves subsequent personnel change, it is important that the transition is 'led from the top' of the Procuring Authority, in order to demonstrate the highest level commitment to the strategy and ongoing commitment to the project.

Changes to the contract management team should be considered where there is a substantial change in government or policy that affects the project. Carefully managed knowledge handover based on robust information management systems play an important role in circumstances involving personnel change, as detailed in Section 3.4 (Information Management) and Chapter 2 (Contract management team set-up and training).

The Procuring Authority can mitigate the risk of a change in government administration affecting the project by setting up a dedicated project team that has some independence.

Where a Project Company's ability to meet its contractual requirements materially changes as a result of a change in policy, law or regulation, it will typically expect to be compensated. This can be implemented through various mechanisms in a PPP contract such as a change in law claim or an economic rebalancing, which can be managed by deploying specialised legal or other expertise. These types of claims are detailed in Section 3.5 (Claims). The changes may have broader implications and a contractual amendment may be required, which is detailed in Chapter 4 (Renegotiation).

#### EXAMPLE

#### Dedicated project team

The Procuring Authority on the Queen Alia International Airport Expansion project in Jordan set up a dedicated project team. The Project management Unit raised project concerns with regulatory and permitting agencies, helping to facilitate its resolution. It also provided stability under multiple Transport Ministers.

*For more information, see the Queen Alia International Airport Expansion case study.*

### 3.2 Performance monitoring

Performance monitoring is a key aspect of the Procuring Authority's role in managing the PPP contract. The principal objective of performance monitoring is to ensure that the Procuring Authority is receiving the service the Project Company has agreed to deliver, and to confirm the risk allocation on an ongoing basis as agreed in the PPP contract.

A key benefit of the PPP model is that significant risk is transferred to the Project Company because it is well-placed to, manage that risk more efficiently. The Project Company is typically responsible for both construction and operation of the project assets, and is best placed to engage and manage its contractors and the involvement of other stakeholders. The priority of the Procuring Authority is therefore to ensure that the performance monitoring mechanisms set out in the PPP contract are properly followed, and that risk as allocated in the contract remains with the Project Company. The resources required from the Procuring Authority should not be underestimated.

#### SECTION STRUCTURE

This section provides a background to performance monitoring in Subsection 3.2.1 (Background) and provides guidance on managing the performance of the Project Company. The key elements to successfully managing performance are summarised below and detailed in Subsection 3.2.2 (Guidance):

- A. Ensure adequate resourcing is employed for performance monitoring activities
- B. Utilise interim construction milestones to stay well-informed on the progress of works
- C. Be aware of and use the most efficient performance monitoring tools, including automated reporting
- D. Use KPIs and payment mechanisms to ensure the Project Company is performing in accordance with the PPP contract, not as punitive measures
- E. Assess the operational effectiveness of KPIs before operations commence or early in the operations phase, and on an ongoing basis
- F. Clarify the intended application of KPIs that are perceived as being unclear or ambiguous with the Project Company
- G. Closer performance monitoring will be required for risks that cannot be transferred to the private sector due to their inherent nature
- H. Keep good records of performance data for use more broadly

### 3.2.1 Background

#### Typical performance monitoring mechanisms

There is a range of performance monitoring mechanisms that can be used during both the construction and operations phases of a PPP, which are typically associated with payment (e.g. payment deductions to penalise underperformance) to incentivise the Project Company's better performance. These mechanisms typically include:

- construction milestones reliant on completion of agreed sections of work, subject to quality requirements
- construction look-forward or look-ahead tests
- review and analysis of compliance with KPIs
- review of quality control and quality assurance procedures to ensure that quality systems are in place and effective
- informal audit processes, or conducting surveys and interviews to gauge user satisfaction
- independent monitoring by the Procuring Authority to verify the accuracy of the reporting delivered to the Procuring Authority
- independent calibration of measurement equipment used in the delivery of the service to verify its accuracy

Monitoring of performance will have different characteristics during the construction and operations phases. Construction milestones are the primary performance monitoring tool available to the Procuring Authority during the construction phase, while KPIs are the primary performance monitoring tool during the operations phase. Where the operation of existing assets takes place at the same time as construction and expansion activities (e.g. on a brownfield project or one with phased commencement of operations), operational KPIs and construction milestones may be combined.

#### Self-monitoring

The Project Company typically reports on its own performance following the quality management plans. These documents are developed by the Project Company and reviewed by the Procuring Authority. They set out activities, standards, tools and processes to be followed in order to achieve quality in the delivery of the project. The onus is on the Procuring Authority to ensure compliance of the Project Company with the prescribed quality plans, undertake spot checks, testing and physical inspections, and provide any sign offs and

certifications required by the PPP contract. The ability to make enquiries against performance monitoring is an important right for the Procuring Authority. It is a right that needs to be exercised properly to ensure the Project Company is complying with the PPP contract and the Procuring Authority is receiving value for money.

The level of monitoring input from the Procuring Authority may depend on the quality of the self-monitoring procedures and systems deployed by the Project Company. It is common for these tasks to be completed in conjunction with an independent certifier during construction (as is discussed below) or with other technical consultants during operations.

#### Key Performance Indicators

KPIs are designed to allow the Procuring Authority to measure the level and quality of service that is being provided. They are a collection of measurable indicators of performance chosen to reflect how well the Project Company is providing the service that the project was designed to deliver.

Monitoring KPIs is the primary way the Procuring Authority ensures it is receiving the level of service prescribed in the PPP contract during operations. Service delivery should demonstrate soon after commencement whether the KPIs and the payment mechanism are working as intended, and if the associated contract drafting is clear in the recording of performance levels and application of the payment deductions. Where the KPIs and associated payment mechanism have been adequately designed, their application by the Procuring Authority should provide the Project Company with a real incentive to perform.

There is a conceptual difference in how performance monitoring should be implemented during operations depending on whether the PPP is based broadly on an availability payment model or on a user-fee model.

- Where the PPP uses an availability payment model, the Procuring Authority is the ultimate customer of the service being provided, and therefore has a pressing need to ensure that the quality targets are being met. For these types of projects, use of detailed KPIs is common.
- Where the Project Company earns its revenue from user fees or tariffs, it is holding some of the quality risk; a reduction in service levels and user dissatisfaction can lead directly to a reduction in revenue. As the Project Company is incentivised to provide a quality service to maximise its revenue, detailed KPIs become less crucial. However, the Procuring Authority cannot take an entirely

hands-off approach. It is likely that there will be aspects where poor performance of the Project Company (e.g. failing to perform long-term maintenance or failing to provide a safe working environment) may not adversely affect the Project Company's short-term revenue, but may have an adverse impact on the Procuring Authority. The KPIs in these projects should also consider aspects that do not lead to reduced revenue but nevertheless constitute reduced performance. For example, it can take a long time after the appearance of potholes on the shoulder of a road for road users or safety concerns appearing for road users or airport passengers to look for alternatives that may be less convenient to them.

KPIs will depend on the asset type. For example, KPIs may be punctuality indicators for rail projects, time of unavailability for power supply or transmission projects, lane availability for road projects, water leakage rates, social acceptance surveys, response times, etc.

The level at which to set KPIs when negotiating the PPP contract is an ongoing challenge. The study found examples where KPIs were considered very difficult to meet as well as examples where KPIs were too vague. The over-specification of KPIs can mean that payment deductions associated with the KPIs are so minor that monitoring does not provide value for money. The Project Company may also make a decision that the cost of compliance is higher than the relevant payment deduction, incentivising it to simply ignore the KPI. The correct level of KPIs and their flexibility is a complex topic in itself and not covered in detail in this reference tool.

#### EXAMPLE

### Different levels of KPIs

On the Segarra Garrigues Irrigation System project in Spain, there are requirements to repair all damage to certain irrigation facilities within 48 hours, regardless of the scale of damage. This has the potential to sour relationships between parties, with the Project Company and its contractors feeling that they are being held to an unobtainable standard, and the Procuring Authority being put under pressure to waive deduction rights. In another example from the study, the Project Company felt that it barely had to consider the KPIs, as they were set so low, which suggests that the KPIs were not designed to incentivise good performance or penalise failures in performance standards.

*For more information, see the Segarra Garrigues Irrigation System Case Study.*

### Payment mechanisms

Payment mechanisms come in the form of a range of financial incentives including increased unitary payments to the Project Company, lump sum payments (e.g. attached to a construction milestone), payment deductions, agreed compensation, adjustment of rights to receive revenue from the project, changes to the required level of investment by the Project Company, etc. The key is that there will be either a positive or a negative impact on the Project Company's revenue depending on the level of performance.

Failure to meet KPIs will typically result in a corresponding payment deduction or agreed compensation payable to the Procuring Authority.

Payment mechanisms during construction are typically tied to construction milestones, subject to quality requirements. Many PPP projects will involve no payment to the Project Company during construction, as payment is linked to availability of services or user fees during operations. This structure incentivises the Project Company to complete work within the agreed timeframe, as availability of revenue is dependent on completion of the construction works, and so late delivery will erode potential Project Company profit (in addition to any agreed compensation payable because of the late delivery). This structure still provides the Project

Company with the autonomy it needs to properly manage its contractors.

The payment mechanisms during construction may be one-off lump sum payments for the completion of milestones implemented through an increase in the unitary payment as milestones are reached, or as a deduction from the unitary payment until the milestones are reached.

**EXAMPLE**

**Milestone payments**

Milestone payments were used successfully in a number of case study projects. On the Zaragoza Tramway project in Spain, 10% of the subsidy from the Procuring Authority was dependent on the achievement of certain milestones, while a substantial payment was available on completion of the Port of Miami Tunnel project in the USA. These were seen as useful incentives for on-time delivery.

*For more information, see the Zaragoza Tramway and Port of Miami Tunnel Case Studies.*

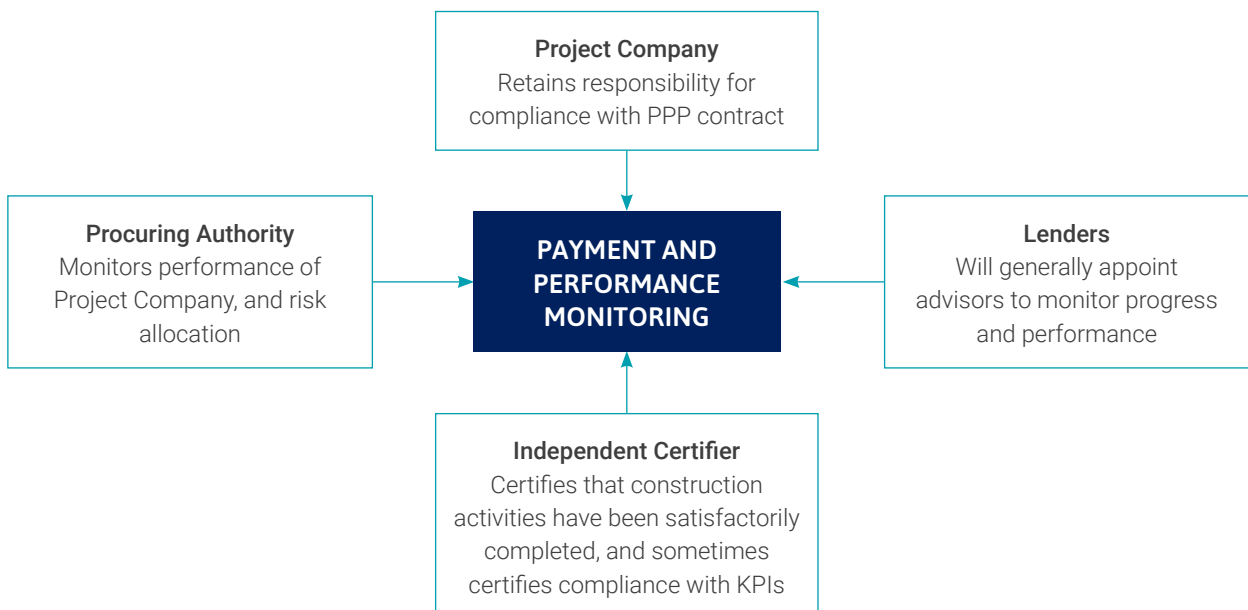
**Independent monitoring**

It is common to employ independent certification/ verification, in particular during the construction period. This involves an independent certifier that is commonly appointed during construction under a tripartite agreement between the Project Company, the Procuring Authority and the independent certifier to monitor compliance with the output specifications, overall progress and quality control. In addition, a third party technical advisor is typically appointed by the lenders to monitor construction progress and approve Project Company loan drawdowns when payments are due to the construction contractor.

For complex projects, the independent certifier appointed by the Procuring Authority and the Project Company may continue its role during the operations phase in a more limited or ad hoc capacity.

An additional safeguard is the lenders’ oversight of the Project Company’s compliance with the PPP contract. The interests of the lenders and the Procuring Authority are aligned on this issue of compliance, as any material underperformance by the Project Company will ultimately affect the Project Company’s cash flows (through payment deductions) and the Project Company’s consequent ability to service its debt. However, it should be noted that this scrutiny may be limited. The lenders exercise this scrutiny through their independent technical advisor’s reporting on the project’s operational performance, which is typically not shared with the Procuring Authority.

Figure 2: Performance Monitoring roles and responsibilities



### 3.2.2 Guidance

The following guidance outlines the key issues that should be considered monitoring the performance of a Project Company in relation to a PPP contract.

#### A. Ensure adequate resourcing is employed for performance monitoring activities

PPPs are typically based on the principle of self-monitoring by the Project Company and consequently there will be a large volume of regular reports to be submitted to the Procuring Authority to verify and approve. The reports need to be well understood and analysed, and data interpretation is resource intensive.

The Procuring Authority should scrutinise how well the Project Company's self-monitoring is working and alter its internal procedures accordingly. Where the Procuring Authority is not satisfied with the quality of the service being provided by the Project Company, it may be appropriate to increase its own level of monitoring. Some PPP contracts also give the Procuring Authority the right to increase its monitoring at the cost of the Project Company.

The priority of the Procuring Authority is to ensure that the performance monitoring mechanisms are properly followed and that risk as allocated in the PPP contract remains with the Project Company.

The Procuring Authority may be required to sign off completion of works so operations can commence. This process is typically defined as the testing and commissioning phase and is detailed in Section 3.1 (Transitions).

Once in operation, one of the primary obligations for the Procuring Authority, particularly in availability-based projects, is to pay the Project Company. Payment should not be delayed because the Procuring Authority does not have sufficient time to undertake its review of the Project Company's monitoring reports. Late payment can create substantial concerns for the Project Company, cashflow difficulties and anxiety on the part of operations contractors.

#### EXAMPLE

#### Performance monitoring team in Spain

The Procuring Authority for the Zaragoza Tramway project in Spain had four dedicated staff responsible solely for performance monitoring. Other case studies showed that less staff was required but these cases typically relied more on consultants.

*For more information, see the Zaragoza Tramway Case Study.*

#### B. Utilise interim construction milestones to stay well-informed on the progress of works

The design and construction monitoring structure often involves the use of key interim milestones as either progress monitoring or payment incentive tools. The interim milestones can assist the Procuring Authority to monitor the progress of the works all the way through construction. The use of interim milestones can be particularly helpful where there are separable parts of a major project that can commence operations early.

The interim milestones may introduce additional payment mechanisms on the completion of an agreed section of work to incentivise performance.

The use of interim milestones may be more important on large and complex projects that consist of a number of discrete packages of work. The application of interim milestones enables the Procuring Authority to gain an early indication of any delays that can be mitigated before they affect the overall completion deadline and compromise the delivery of the public service.

#### EXAMPLE

#### Interim milestones on large and complex projects

The Procuring Authority on a light rail project in a developed market noted that the lack of interim milestones combined with the complexities of the work made it more difficult for the Procuring Authority to monitor the construction schedule. Milestones can also be associated with lump sum payments as an incentive for the Project Company, which was not present on this project.



### **C. Be aware of and use the most efficient performance monitoring tools, including automated reporting**

A common tool used to monitor KPIs during operations is a Quality Management Plan, which is developed by the Project Company and then reviewed by the Procuring Authority. This document sets out who will do the operations and maintenance work, how it will be inspected and how the findings will be reported by the Project Company back to the Procuring Authority. The PPP contract also typically sets out specific reporting requirements.

The Procuring Authority should rely on the Project Company's reporting to some extent but should also make itself comfortable that the performance data provided is accurate. A variety of methods are available for this, including user satisfaction surveys, spot checks and testing, inspections, and reviews of complaint logs and help desk records.

The key is to ensure that the level of detail, format and frequency of performance reporting contractually required and operationally requested from the Project Company is adequate for the Procuring Authority's needs, and can facilitate independent monitoring and verification. Sometimes the information provided (by the operations contractor through the Project Company) is deficient, and parties should be encouraged to meet and review this process.

For complex projects, the parties may also jointly appoint an independent consultant to assist with the performance monitoring during operations.

Compliance with some KPIs can be automatically generated by the software that controls the asset's operation. For example, some KPIs associated with delays on a rail project are automatically generated by the software that controls the operation of the rolling stock (times of arrivals and departure in all stations, speed, location of the rolling stock, etc.).

#### **EXAMPLE**

### **Monitoring KPIs**

The Procuring Authority on the Zaragoza Tramway project monitors the KPIs very carefully. The KPI regime is comprehensive, covering quality and availability measures, and four employees work full-time on this task. The Procuring Authority considers that this approach leads to high quality service delivery.

***For more information, see the Zaragoza Tramway Case Study.***

### **D. Use KPIs and payment mechanisms to ensure the Project Company is performing in accordance with the PPP contract, not as punitive measures**

The Procuring Authority should not take a 'soft stance' on the enforcement of payment deductions as they relate to KPIs. KPIs embody the level of service and the allocation of risk that was agreed to in the PPP contract and so should be appropriately managed to ensure the Project Company is performing in accordance with its contractual obligations. The approach taken by the Procuring Authority should be 'strict but fair'.

It is not uncommon for there to be some disagreement between the Procuring Authority and Project Company over KPIs at some stage during a project lifecycle, with the study data showing 20% of disputes in PPPs globally involve KPIs. Disputes are detailed in Chapter 5 (Disputes). At a fundamental level, the incentives of each party are divergent with regard to KPIs, as the Procuring Authority wants the highest level of service for the lowest price to deliver the greatest value for money to the public, and may be incentivised to apply payment deduction strictly. On the other hand, the Project Company wants to deliver what is required in the most cost effective way for the highest revenue. These opposing drivers increase the likelihood of a disagreement or dispute. For example, in the research there were a number of instances where the Project Company perceived KPIs as too onerous or unrealistic, while the Procuring Authority saw them as a means of 'keeping pressure' on the Project Company to perform.

Both parties should acknowledge the inherent divergence of interests, and approach KPIs with an open mind to work together to resolve any operational difficulties. Application of payment deductions has the strong potential to damage the relationship between the Procuring Authority and Project Company. The main objective is to ensure proper service delivery and not to use payment deductions as punitive measures, as this puts the relationship at risk and will not improve long-term value for money. Stakeholder management with respect to the Project Company is detailed in Section 3.3 (Stakeholder management).

In certain circumstances the Procuring Authority may decide not to enforce its contractual right to impose a payment deduction or a penalty if it considers there is an overriding interest for it not to do so. Similarly, it may decide to apply it at a lower level than contractually entitled. In these circumstances it is important to communicate

clearly that the inaction is deliberate, and to clarify the grounds for the decision should similar circumstances arise in the future. Waiving rights under a contract should only be undertaken after receiving legal advice, to ensure an appropriate waiver is effected (i.e. that the Procuring Authority is waiving only what it is intending to waive and not waiving any other rights under the PPP contract). The Procuring Authority must weigh up the risk of damage to its relationship with the Project Company with the financial gain and precedent-setting of strictly applying the deductions.

#### EXAMPLE

##### Pro-active management of KPIs

There was an issue with excessive noise on the Brabo 1 Light Rail project in Belgium. The mitigation, was proactively managed by both parties. Data was collected during noisy periods and appropriate mitigations were developed and implemented.

*For more information, see the Brabo 1 Light Rail Case Study.*

#### E. Assess the operational effectiveness of KPIs before operations commence or early in the operations phase, and on an ongoing basis

KPIs are created during the procurement phase and agreed to in the PPP contract. However, they have to be considered from an operational, real life point of view. The Procuring Authority should be in agreement with the Project Company about what is required and work to ensure that KPIs are mutually understood. This needs to be addressed as early as possible once KPI measurement and assessment starts.

The Procuring Authority should regularly assess any KPIs that may be ineffective and, with the long-term success of the project in mind, decide if:

- certain KPIs (e.g. performance standards, rectification periods) or payment deductions should be amended for the benefit of the project
- a practical solution can be agreed with the Project Company as a way to manage difficult KPIs

As is detailed in Section 3.1 (Transitions), 'bedding-in' periods are also common at the outset of the operations phase to allow the parties to become familiar with their operations phase obligations.

#### EXAMPLE

##### Early collaboration on review of KPIs

The Procuring Authority and Project Company on the Port of Miami Tunnel project in the USA began collaborating with the operations contractor a year before operations were due to begin, to review KPIs and predict any challenges. The Procuring Authority assessed the issues raised by the contractor and concluded that one KPI relating to response times was not workable. All other KPIs were kept as described in the PPP contract.

*For more information, see the Port of Miami Tunnel Case Study.*

#### F. Clarify the intended application of KPIs that are perceived as being unclear or ambiguous with the Project Company

KPIs as drafted in the PPP contract may be unrealistic, ambiguous, difficult to implement in practice or no longer relevant. Procuring Authorities should not take advantage of unclear KPIs to the detriment of the Project Company and the Procuring Authority's relationship with the Project Company. Instead, the intended application of the KPIs should be clarified between the parties.

KPIs are generally defined in the PPP contract at financial close. For projects that can run for 20 to 30 years, this means that the indicators can become out of date due to external factors. For example, contracts that were drafted in 2005 are unlikely to have greenhouse gas emissions targets, yet a Procuring Authority may be more likely to have emissions targets defined in its current policies. Similarly, an airport may need additional capacity earlier in the contractual period, with the focus shifting to improved customer service later in the period.

Different approaches to dealing with this have included creating KPIs that are flexible to circumstances, such as factoring in specified review points on the original KPIs.

**EXAMPLE****Outdated KPIs**

The Central Berkshire Waste project in the UK was signed in 2006, at a time when the primary objective was to direct waste away from landfill. The Project Company was given the autonomy to achieve this however it saw fit (e.g. through incineration of waste). Current policy is now more focused on recycling and KPIs therefore do not correspond well to the new goals of the Procuring Authority. At the time of writing, the Procuring Authority is considering how to address this challenge.

In addition, the Procuring Authority realised that there were certain aspects of reporting that weren't covered clearly in the contract, however were still of interest. It therefore developed an informal audit. Conducted with the Project Company, it covers issues that may be more subjective and are not as clearly defined.

*For more information, see the Central Berkshire Waste Case Study.*

### **G. Closer performance monitoring will be required for risks that cannot be transferred to the private sector due to their inherent nature**

One of the key elements of the PPP model is the transfer of risk to the Project Company; however, it should be emphasised that there is a range of public interest risks that will remain with the Procuring Authority regardless of the risk allocation. Aspects such as environmental issues, health and safety, or community engagement, where the actions (or lack of action) by the Project Company have the potential to affect the public, must be considered by the Procuring Authority. These issues have the potential to affect the reputation of the Procuring Authority, regardless of how the risk in question has been allocated.

The Procuring Authority has an obligation to monitor and support the Project Company, both to protect its own reputation if an incident were to occur, and for the fundamental reason that a government body should be concerned with the welfare of its citizens.

Issues regarding stakeholder management and engagement may present risks for the public and for the Procuring Authority, particularly on large

and high-profile projects, which PPPs often are. Construction works have a significant effect on those who interact with the project in any way, whether through noise or vibration associated with the work itself, or the inconvenience of road closures. A lack of engagement will make the experience of those affected more difficult, as well as affecting the reputation of the Procuring Authority. Stakeholder engagement is detailed in Section 3.3 (Stakeholder engagement).

Where the risk and responsibility for stakeholder management and consultation is passed to the Project Company, there is a risk that the work done on that stakeholder management by the Procuring Authority pre-bid will be lost. The Procuring Authority should give careful consideration to remaining involved in stakeholder management to assist in ensuring appropriate behaviour of both the Project Company and the stakeholders.

There are several other matters that may threaten the ongoing provision of services that have the potential to become public interest issues. For example, when the Project Company experiences financial difficulties, even where they are entirely the result of the materialisation of risks allocated to the Project Company, if they lead to insolvency then services may be halted, which will affect the public. The issue of insolvency is detailed in Chapter 6 (Insolvency).

**EXAMPLE****Environmental issues**

The Project Company on a road project in a developed market agreed to pay compensation towards local community projects after it allowed water that had been polluted by construction works to enter the local waterways. The underlying cause of the incident was related to the unusual soil composition in the area (leading to higher than average settlement time and consequently the overflow of settlement ponds in heavy rain). The construction contractor was not accustomed to these conditions, and the Procuring Authority concluded that it could have emphasised this soil challenge more than it did and mitigated the risk.

**EXAMPLE****Public engagement issues**

On a light rail project in a developed country, there were issues that required third party stakeholder consent, and were therefore critical. The Procuring Authority took a proactive approach in facilitating these consents and managing the implications for the project. The Procuring Authority established its own stakeholder management team, and is considering retaining this risk for future projects to avoid the costs of duplicating the work with the Project Company.

On the Port of Miami Tunnel project in the USA, the construction contractor faced some challenges in terms of compliance with federal labour laws. It highlighted the importance of the Procuring Authority ensuring that the Project Company and its contractor are fully aware of the relevant laws. On this project, the Procuring Authority was also liable for fines if any of its projects were not compliant with relevant laws and regulation.

*For more information, see the Port of Miami Tunnel Case Study.*

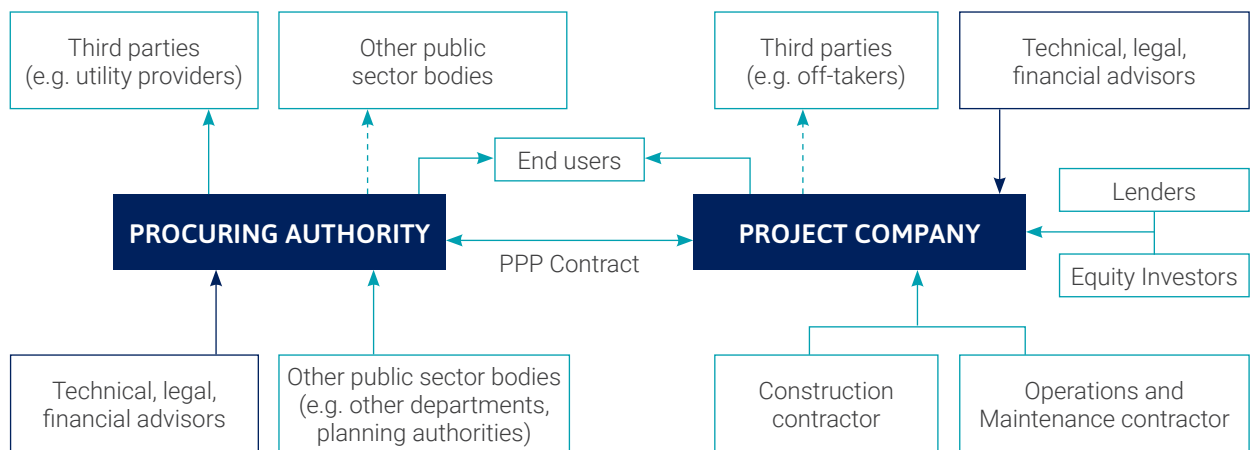
**H. Keep good records of performance data for use more broadly**

The Procuring Authority should recognise the broader value in performance data, and should collect performance data for a variety of reasons: as benchmarks for other projects, to inform policy development, and to feed into reporting requirements to the regulators or central government. To the extent performance data is available from other projects, that data can also be used to better assess the performance of the Project Company on a particular project, as it can benchmark against similar projects. Information management is detailed in Section 3.5 (Information management).

### 3.3 Stakeholder management

By their very nature, PPP projects involve a vast array of interconnecting relationships. This is not just between the Procuring Authority and the Project Company, but with and between other stakeholders including end-users, the public, equity investors, lenders, contractors, insurers, advisors, other government departments, and PPP units. Figure 3 illustrates the potential relationship complexities involved in a PPP transaction.

*Figure 3: Typical PPP stakeholders*



PPPs have the potential to create an environment of collaboration and mutual benefit, where improvements and efficiencies can lead to increased value for the government, high quality services for end-users, and commercial benefits for the private parties. The achievement of these goals depends, to a large extent, on how well the relationships between the parties are managed, as poor relationship management can have significant knock-on effects.

## SECTION STRUCTURE

This section provides guidance on managing relationships with three key stakeholder groups: the Project Company and its associated private partners (equity investors, lenders, contractors); end-users and the community; and other government agencies. The key elements of successfully managing stakeholders are summarised below and detailed in Subsection 3.3.1 (Guidance), Subsection 3.3.2 (Guidance: Project Company), Subsection 3.3.3 (Guidance: private partner stakeholders other than the Project Company), Subsection 3.3.4 (Guidance: end-users, businesses and the community) and Subsection 3.3.5 (Guidance: other government agencies).

- A. Define all stakeholders that are relevant to the project
- B. Ensure good communications strategies and practices are developed
- C. Keep good records of communications, including informal communications

### Project Company

- D. Consider the interests of the Project Company, including any changes in its circumstances
- E. Ensure appropriately frequent meetings are held, including at the relevant strategic levels
- F. Follow formal communication requirements where required
- G. Be aware of the positive and negative aspects of appointing Project Company board members
- H. Consider co-location of office space with the Project Company, which can benefit the relationship
- I. Use contractual provisions to protect the rights of the Procuring Authority rather than as punitive measures
- J. Focus on a positive relationship, even in the presence of ongoing disputes

### Private partner stakeholders other than the Project Company

- K. Consider associated private partners (including the construction contractor) in communications and relevant meetings

### End-users, businesses and the community

- L. Ensure end-users, businesses and community stakeholders are engaged at all stages of infrastructure delivery to ensure viability and enhance the services
- M. Ensure ongoing transparent engagement with ends user, business and community stakeholders on all relevant issues
- N. N. Define the role of the Project Company in the management of end-user, businesses and community stakeholders
- O. Consider each relevant community group, as they may have different interests and desired outcomes

### Other government agencies

- P. Consider the level of involvement required from other government agencies
- Q. Set up effective governance structures to manage the relationships with other relevant government agencies
- R. Collaborate with the Project Company to work with other government agencies, where appropriate
- S. Plan early for managing other government or quasi-government agencies that the Procuring Authority does not have influence over

### 3.3.1 Guidance

#### A. Define all stakeholders that are relevant to the project

As PPPs typically involve a vast array of interconnecting relationships, the Procuring Authority should map and define all relevant stakeholders from very early on in the process. There are a few key groups: the Project Company and its associated private partners (equity investors, lenders, contractors); end-users; businesses and the community; and other government agencies. Additional third parties should also be considered, such as private operators of interfacing projects, independent regulators, utility providers, insurers and advisors.

The relationship between the Procuring Authority and the Project Company is key to the success of a PPP. A collaborative relationship helps the parties ultimately achieve 'win-win' solutions, while a breakdown in relationship can amplify disputes and threaten the ongoing viability of the project.

External stakeholders, such as members of the public or end-users of the service, need to be engaged and managed by both the Procuring Authority and the Project Company. These stakeholders can include different members of the public and end-users, such as communities, developers, local businesses, utilities providers and other interest groups. Infrastructure projects have the potential to cause disruption to these groups, and if relationships are not managed properly they may create opposition to the project and cause serious and costly delays, as well as underutilisation of the infrastructure.

Another key group of stakeholders that the Procuring Authority must consider are other government departments. For example, approvals will generally be required from the ministry of finance (or equivalent). Other bodies will be relevant: PPP units, bodies that regulate the provision of services (such as power), planning and environmental regulators, health and safety regulators, etc. The Procuring Authority will need to ensure good relationships are maintained with all relevant government bodies.

#### EXAMPLE

#### Different stakeholders

The stakeholders in PPPs can be very diverse, depending on the project and sector.

On the Queen Alia International Airport Expansion project in Jordan, as with all airports, the users of the facilities are members of the public, retailers, and airlines. All of these groups have different views and need to be engaged with in distinct ways.

*For more information, see the Queen Alia International Airport Expansion Case Study.*

#### B. Ensure good communications strategies and practices are developed

Effective communication is imperative to maintain a positive relationship between the parties to the PPP contract and with third party stakeholders, working towards shared benefits. The Procuring Authority should establish a communication strategy and plan from day one. The Procuring Authority should design and implement a communication strategy to address communication requirements with all relevant project stakeholders. This is important across all stages of a project.

The Procuring Authority should define:

- All of the stakeholders with which it needs to regularly communicate with, as well as the stakeholders' roles and interests
- The frequency and type of communication needed with the Project Company and other key stakeholders, including the community, end-users and other government agencies
- The level and nature of the input required from the Procuring Authority's team with regard to each relationship
- The level of support which can be provided at central government level and from other industry bodies or regulators, and how to manage those relationships
- Reporting requirements to central government and any regulatory body

The communication strategy should include an awareness campaign, regular progress updates, mitigation measures for any issues affecting end-users and/or the community, crisis communication procedures, clear protocols for responding to queries from the public and media enquiries and a dedicated website for disseminating key controlled messages.

It is also important that communication within the Procuring Authority team takes place regularly. The senior management team should be aware of the state of the relationship between the contract management personnel and their counterparts, and the messaging at all levels should be consistent.

#### EXAMPLE

#### Communication over a large area

A project in North America involved work on 20 separate sites, which were spread over a large geographical area. Communication between the different teams was vital to avoiding disagreements escalating into disputes.

#### C. Keep good records of communications, including informal communications

While verbal communication is useful in avoiding excessive formality, it is important that these exchanges are well documented to avoid confusion. This can be done by recording and sharing key action points agreed upon in informal discussions and sharing and agreeing on the minutes which are taken during formal meetings. Preparing high quality minutes is particularly important to accurately reflect the spirit of the agreements made and help to bind the relevant participants to their commitments. Information management is detailed in Section 3.4 (Information management).

#### 3.3.2 Guidance: Project Company

##### D. Consider the interests of the Project Company, including any changes in its circumstances

The relationship between the Procuring Authority and the Project Company is key to the success of a PPP. The first step in managing the relationship with the Project Company is to ensure that both parties have a good understanding of one another's objectives and points of view. This will create a common vision and boost cooperation and also help avoid surprises. Goals and expectations should be made clear as early as possible and discussed openly. While this will often be covered in the procurement phase, they should be revisited at regular intervals, such as during transitions between project phases, when staff are likely to change, as is detailed in Section 3.1 (Transitions).

As PPPs are long-term partnerships, team dynamics and personalities play an important role in defining the primary relationship between the Procuring Authority and the Project Company.

Although the Project Company and the Procuring Authority may have different commercial and non-commercial drivers and incentives, they are ultimately delivering the same project and a collaborative approach is important. The Procuring Authority should seek information on how it is regarded by the Project Company, with a view to improving the relationship over time.

A positive relationship between the Procuring Authority and the Project Company is also a responsibility of the Project Company. Various factors may affect how the Project Company will approach the relationship with the Procuring Authority including its underlying financial situation, its equity investors' priorities and whether adequate personnel and resources have been allocated to the project.

For example, there may be circumstances where the underlying financial situation of the Project Company will influence its willingness to engage in collaborative behaviours. When the Project Company is making a healthy profit, it may be more likely to be more flexible and cooperative in achieving shared wins, even if those changes do not have an obvious financial benefit. On the other hand, if the underlying economics of the Project Company's role in the project are not as positive as expected, there is likely to be pressure on the Project Company to cut costs, which may have an impact on the relationship. This situation highlights the importance of maintaining good communication between the parties, so the Procuring Authority knows what is happening and how it may be able to best work with the Project Company.



**EXAMPLE****Advantages of a strong relationship**

The Intercity Express Programme project in the UK was forced to make changes to the train design due to delays in external infrastructure works, and the close working relationship between the Procuring Authority and Project Company allowed them to mitigate the delay.

*For more information, see the Intercity Express Programme Case Study.*

**E. Ensure appropriately frequent meetings are held, including at the relevant strategic levels**

Successful projects generally recognise the importance of timely resolution of day-to-day operational issues through the involvement of relevant representatives from the Procuring Authority and Project Company, and high-level effective decision-making on strategic matters which determine the future of the project. The latter is required less frequently but must include all relevant stakeholders from the public and private sector side, and not just the respective Project Company and Procuring Authority representatives.

It is common for the Procuring Authority and Project Company to discuss operational issues at regular meetings, though the frequency may vary depending on the project from weekly to quarterly.

The relationship between parties may also operate at different levels. Parties from both sides involved in the day-to-day running of the PPP contract should communicate frequently on operational matters, in both a formal and informal context.

Conversely, senior management may limit communication to strategic questions and other major issues and may communicate in a more formal way. There should be a clear hierarchy regarding the importance of issues dealt with by the Procuring Authority contract management team. It needs to distinguish between everyday operational management issues (ordinary issues which are monitored on a regular basis), and strategic issues with material commercial implications, which are discussed periodically or as the need arises.

Specific circumstances may warrant more frequent meetings, or meetings attended by specific additional representatives (e.g. to settle disputes). Disputes are detailed in Chapter 4 (Disputes).

**EXAMPLE****Frequency of meetings for different projects**

In the Gautrain Rapid Rail Link project in South Africa, important issues could be raised during weekly meetings between key representatives. In the Port of Miami Tunnel project in the USA, weekly meetings were held, which included the Procuring Authority, the Project Company and the construction contractor, as well as representatives from city and county governments. In other projects, meetings take place on a monthly basis, and in the Brabo I Light Rail project in Belgium, meetings were held quarterly. The Procuring Authority for energy projects in Brazil has recently introduced quarterly contract management meetings for all its projects.

*For more information, see the Gautrain Rapid Rail Link Case Study, Port of Miami Tunnel Case Study and the Brabo I Light Rail Case Studies.*

**EXAMPLE****Frequency of meetings to settle disputes**

One case study in a developed market identified the use of a 'chairmen's meeting', which included representatives from the Procuring Authority, the Project Company, the construction contractor and the operations contractor during a time of ongoing disputes. These meetings took place for six months on a fortnightly basis and successfully enabled the resolution of many issues.

## F. Follow formal communication requirements where required

Some Procuring Authorities adopt a more formal approach, with official letters used as the primary form of communication. This is a requirement of the Brazilian administrative system, and therefore is the approach taken by Procuring Authorities there. This approach is also common in India.

The PPP contract will usually identify formal points of contact and formal means of reporting and communication. However, several other less formal contact points and means of communication will generally also be beneficial. Channels of communication must be properly managed to ensure that they are efficient.

## G. Be aware of the positive and negative aspects of appointing Project Company board members

Some governments require an equity interest in Project Companies, with an accompanying right for the Procuring Authority to appoint a director to the Project Company's board.

There are several benefits of this, including sharing in the profits of good performance, enhancing the relationship and communications, assisting to raise issues at a strategic level, increasing the level of transparency and information management.

There are also negative aspects including sharing of losses, blurring the line between the public and private sector interests and creation of conflicts of interest. It is typically not a preferred structure for other private sector investors (including equity investors and lenders), who will require strict controls around what rights the directors who are appointed by the Procuring Authority have at the board level. Additional challenges will arise in the case of financial difficulty or insolvency of the Project Company, as detailed in Chapter 6 (Insolvency).

### EXAMPLE

#### Procuring Authority appointed directors

In the Qiaoxi District Central Heating project in China, the Project Company governance structure includes a board of directors and a supervisory committee. At least one of the five members of the board and at least one of the three members of the committee must be from the government of the Qiaoxi district in China. This allows the Procuring Authority to monitor the performance of the project on an ongoing basis.

In several PPPs in Scotland, the Procuring Authority has an observer who sits in on the board meetings of the Project Company (other than during shareholder-related commercial discussions).

*For more information, see the Qiaoxi District Central Heating Case Study.*

## H. Consider co-location of office space with the Project Company, which can benefit the relationship

Co-location of office space with the Project Company can also be beneficial in many circumstances. While this may only be feasible in certain situations, it has obvious advantages, such as the ability to have more regular informal conversations in addition to formal meetings.

Where the Procuring Authority and Project Company choose to co-locate, there are risks regarding confidentiality and independence which must be managed.

### EXAMPLE

#### Decision to co-locate

The operational team for the Central Berkshire Waste project in the UK are co-located, and this was seen as beneficial in keeping the relationship between the Procuring Authority and Project Company amicable, even during an ongoing dispute.

*For more information, see the Central Berkshire Waste Case Study.*

**EXAMPLE****Decision not to co-locate**

This team for the InterCity Express Programme project, also in the UK, highlights that some parties deliberately decided not to co-locate their offices to maintain a degree of separation and independence, which was felt to be more appropriate under the circumstances.

*For more information, see the InterCity Express Programme Case Study.*

### **I. Use contractual provisions to protect the rights of the Procuring Authority rather than as punitive measures**

The Procuring Authority should not unfairly use contractual mechanisms to address relationship issues or resolve issues that it may have outside of the project.

For example, the contractual entitlement to deduct payments should not be perceived as a means to generate savings for the Procuring Authority, and unnecessarily penalise the Project Company. Performance monitoring and application of payment deductions is detailed in Section 3.2 (Performance monitoring). The relationship between the parties can be improved only through communication and collaboration, while contractual mechanisms are there to help the Procuring Authority enforce its contractual rights.

As discussed above, the relationship with the Project Company may be impacted by its financial situation. Pressure on costs can also come from the Procuring Authority side, due to budgetary pressures and changing priorities from broader government policies. This can put contract managers from the Procuring Authority into a difficult situation, however they must be aware that, even when under budgetary pressure, the relationship with the Project Company continues to be extremely important.

### **J. Focus on a positive relationship, even in the presence of ongoing disputes**

During disputes, it is important that the underlying principles of communication outlined above continue to be followed, despite the challenges raised during the process of resolving a disagreement.

Major changes, such as unforeseen events and other major challenges, may also call for a change in the personnel dealing with the challenge from the Procuring Authority's team. If the Procuring Authority is facing a major dispute or claim, then people with strong relationship-building skills might help improve the existing relationship, which could be tense. Disputes are detailed in Chapter 5 (Disputes).

**EXAMPLE****Treatment of disputes**

Several projects have highlighted how the relationships between the Procuring Authority and Project Company remained positive throughout all commercial disagreements and formal disputes. This was achieved by separating disputes from day-to-day operational matters, and in the Central Berkshire Waste project in the UK, the fact that the offices were co-located was also helpful.

*For more information, see the Central Berkshire Waste Case Study.*

### 3.3.3 Guidance: private partner stakeholders other than the Project Company

#### K. Consider associated private partners (including the construction contractor) in communications and relevant meetings

The Procuring Authority needs to keep in mind that it should not consider the Project Company as the only private partner; in fact, it is working with several private partners or private parties (including the Project Company, its equity investors, lenders, construction contractors and operations contractors). All these parties play different roles, and although it is important to remember that the Project Company is responsible for managing these relationships, the Procuring Authority should still be considerate of their existence and the interests of those parties after financial close.

For example, the Procuring Authority could invite the additional stakeholders to induction seminars to help improve their understanding of the government's objectives of the project, or to invite the additional stakeholders to other meetings between the Procuring Authority and the Project Company, as relevant. This must be done while diligently observing relevant confidentiality requirements.

One useful approach is to include the construction contractor in the dialogue between the Procuring Authority and the Project Company where there is a dispute over construction scope changes or other issues. The construction contractor will ultimately need to agree to the arrangements agreed between the Procuring Authority and the Project Company and involving the construction contractor at an early stage is likely to provide the most beneficial outcomes. Disputes are detailed in Chapter 5 (Disputes).

In several jurisdictions, the Procuring Authority will also agree with the Project Company and the construction contractor that it will have the opportunity to step in and cure a default related to non-payment to the construction contractor where the Project Company has not paid the construction contractor. Potential Project Company non-payments should be monitored to ensure the construction contractor can deliver the construction works and will not fall into financial difficulties. Procuring Authority step-in rights are detailed in Chapter 7 (Default and termination).

### 3.3.4 Guidance: end-users, businesses and the community

#### L. Ensure end-users, businesses and community stakeholders are engaged at all stages of infrastructure delivery to ensure viability and enhance the services

The level of input required from stakeholders should not be underestimated, and feedback at all stages of a project can ensure the project is continuing to deliver value for money to the government and the community. Members of the local community will typically know the area well and may be able to contribute positively to project planning and enhance the value of the project.

On the other hand, insufficient consultation can be detrimental to the completed project. For example, many PPPs globally have been adversely affected by land acquisition issues, and other communication failures with stakeholders, identifying a strong lesson to be learned from past experience.

#### EXAMPLE

#### Negative impacts of poor stakeholder engagement

The relationship with the end-users is a key ingredient to the success of a project. On the Segarra Garrigues Irrigation System project in Spain, farmers were required to agree to and provide their own capital to connect to the water network. This only occurred after an improved stakeholder management plan was implemented and much of the delay that occurred on that project was due to the reluctance of these landowners to engage with the development.

*For more information, see the Segarra Garrigues Irrigation System Case Study.*

Public stakeholder engagement can also provide great opportunities to enhance the design of the infrastructure, to increase employment or to better serve otherwise underserved members of the community.

There may be other challenges faced by the Procuring Authority and the broader government with respect to delivering infrastructure generally, and also delivering infrastructure using a PPP model. The PPP model can have negative public perceptions, and an understanding of the benefits of the model on a broader scale, particularly the

benefits to end-users, should be communicated to the public. Negative publicity created by the media following a project specific failure may negatively impact a much wider public perception of PPPs, as a result of which the overall benefits of a specific project or of the PPP model in general may be overlooked.

Focus groups, comprising end-users and people living in or close to the area affected by the project, can be used for a qualitative assessment of expectations and feelings on the project's features and specific issues. Surveys are commonly used for gathering feedback from larger groups.

#### EXAMPLE

### Design input and serving underserved groups

The I-495 Express Lane project in the USA highlights that public engagement with key stakeholders can deliver a better project for the community and for the project sponsor. Initial plans for the project included just one access point into the region's largest employment centre. After early feedback from major employers, elected officials and transit advocates, the project team changed the scope of the project to include three major entry and exit points to serve the busy commercial area. By proactively engaging stakeholders early, the parties were able to work collaboratively to develop a transportation solution that provided a better outcome

On the same project, the Procuring Authority mandated that the Project Company utilise 'Disadvantaged Business Enterprises' where possible, with \$490 million contracted to small and disadvantaged businesses. At the time, it was the largest contribution in Virginia's history for such businesses for a single transportation project.

*For more information, see the I-495 Express Lane Case Study.*

#### EXAMPLE

### Engaging with stakeholders on design particulars

The Zaragoza Tramway project in Spain highlights the benefit that all stakeholders can achieve by including the public in the decision-making process. In that project, for every tree that had to be removed for the construction of the tramway, two trees have been planted elsewhere, with the selection being carried out through a participative process, improving the overall outcome of a project.

*For more information, see the Zaragoza Tramway Case Study.*

#### EXAMPLE

### Prioritised community engagement

Community engagement was prioritised on the Port of Miami Tunnel project in the USA, with local employment programmes during construction, and continuing work with local schools continuing throughout the project. This focus was seen as a key enabler of success, as construction of public projects was controversial at the time of financial close.

*For more information, see the Port of Miami Tunnel Case Study.*

### **M. Ensure ongoing transparent engagement with end-users, businesses and community stakeholders on all relevant issues**

Transparency is one of the underlying principles of the relationship governing PPP procurement and delivery. It is particularly important during PPP contract management as it enables the Procuring Authority to obtain adequate information to manage the contract effectively.

Transparency is also an important component of wider stakeholder engagement and promoting public acceptance of a project. Disclosing information on the project's contract and performance helps to promote transparency and obtain acceptance of the PPP model and the project by the community, as well as allows for performance auditing of the PPP project and a wider PPP program.

Public stakeholders should be provided with an accurate understanding of what to expect both during construction and once service delivery commences. This will include an understanding of the positive impacts (including the scope of additional services to be provided and increased level of service), as well as the negative impacts (such as increased traffic noise, business disruptions and community relocation). This is particularly important during the construction phase when the community may be inconvenienced by the construction activities and stakeholders' support is particularly important.

One approach is to require the Project Company to set up a project website to introduce the project and provide regular updates on its development. A specific office for managing community enquiries can also be set up to manage inquiries.

There are several project specific issues that will be of interest to the public. They include:

- Workplace safety and environmental incidents
- Land acquisition and community relocation (this is particularly prevalent on linear projects, such as highways and rail projects)
- Public service requirements not being met in a publicly acceptable manner (e.g. tolls being too high and a toll road not being used)
- Reduced user charges (in a high performing PPP, costs have the potential to reduce over time and may lead to reduced user charges or government payments)
- High profit levels of the private partners (this may be detrimental from the public's point of view)

In some jurisdictions, the lack of transparency on the return on investment to the Project Company's equity investors creates negative publicity surrounding not only a specific project, but the PPP model in general. This leads to a lack of confidence in achieving value for money from the Procuring Authority's point of view and a public opposition to the use of PPP projects. In this sense, transparency is very important for and highly correlated to effective stakeholder management.

The Procuring Authority should also publish performance statistics, reviews, contract renegotiations and any other changes or issues that are relevant to the public. It also needs to consider what information will be made publicly available and what may be the subject of confidentiality obligations owed by the Procuring Authority.

The PPP contract typically defines the requirements for information sharing between the Project Company and Procuring Authority and public disclosure requirements, as well as any exceptions from disclosure. Disclosure of the contract may be limited to protect the legitimate interests of the Project Company by keeping commercial information confidential, as well as to recognise the need for the Procuring Authority to protect its position for future negotiation.

While it may be in the Procuring Authority's interest to aim for as much transparency as possible in order to protect public interests and ensure value for money, it is always challenging to achieve an optimum balance between the level of detail desired and the limitations imposed by confidentiality on commercially sensitive information required by the private sector.

The reference tool does not cover specific disclosure requirements of project information by the Procuring Authority and associated requirements as defined by applicable laws, codes of practice and standard national guidance that may exist in each jurisdiction. The relevant laws, regulations and guides typically set out specific and well-defined requirements with regard to both pre-procurement and post-procurement disclosure responsibilities placed upon the Procuring Authority.

#### **N. Define the role of the Project Company in the management of end-users, businesses and community stakeholders**

Both the Procuring Authority and Project Company can have responsibilities to engage with the community on the current status of the project and any issues affecting end-users and local community. It is important that the communication from both sides is well-coordinated and consistent.

It may be difficult however for the Procuring Authority to properly incentivise the Project Company to undertake the same level of community engagement as what the Procuring Authority desires. Where the Project Company is primarily driven by profit objectives, undertaking additional community engagement where there is no associated payment mechanism may not sufficiently incentivise the Project Company.

One method for addressing this issue is to be very prescriptive about what is required in the PPP contract. This could involve setting specific requirements for staffing or meeting frequencies with community stakeholders.

As is detailed in Section 3.2 (Performance monitoring), the Procuring Authority should closely monitor the Project Company's actions when the Project Company is required to engage with community stakeholders. If not done correctly, the issue will not just be a Project Company issue, but will also affect the Procuring Authority irrespective of where the obligations and the risks are allocated.

**EXAMPLE****Zaragoza Tramway**

During the construction phase of the Zaragoza Tramway project in Spain, the Project Company employed a communications director, and information offices were set up so any individual or business could seek information about the project or any issues arising regarding the construction. During operations, there was a customer service office to respond to complaints and questions from members of the public. This was seen as a useful way of engaging with users, as well as an opportunity to gather feedback to improve the service itself.

*For more details, see the Zaragoza Tramway Case Study.*

**EXAMPLE****Prescriptive contractual requirements**

The Project Company in one of the case studies was required under the PPP contract to hire a certain number of staff dedicated to community engagement and to hire staff with defined qualifications.

**O. Consider each relevant community group, as they may have different interests and desired outcomes**

Different community groups have different interests and it may be beneficial to adopt specific communication strategies for each relevant group. For example, end-users should be given the chance to give feedback on the quality and effectiveness of the service being provided; whereas residential communities may be concerned about the noise, and businesses concerned about business disruption caused by construction or maintenance works.

Groups meetings can be scheduled with key stakeholders and can be determined and sub-divided by relevant interests to be responsive to their needs.

**EXAMPLE****Differentiating interest groups**

The Procuring Authority and the Project Company in one of the case studies took a coordinated approach to community engagement and set up key consultative forums. The consultative forums were referred to as the 'Business Reference Group' and the 'Community Reference Group'. The former was made up of business representatives, with the latter being made up of community representatives. The business and community forums are organised by the Project Company, which then reported back to the Procuring Authority.

### 3.3.5 Guidance: other government agencies

#### P. Consider the level of involvement required from other government agencies

Due to the nature of PPP transactions, they involve a variety of government agencies, other than the Procuring Authority who will also play a role. Some of those other stakeholders can include:

- Finance ministries. Finance ministries will typically be required to provide approvals (with regard to additional funding, major scope changes, and contingent government liabilities) and may have reporting requirements.
- Planning bodies. Planning permission is a major issue for many projects. Planning permission is also relevant in understanding what future development may occur in an area. For example, if there are residential or commercial developments planned, which may have an impact on the project.
- Health and safety or environmental regulators. These bodies will often have the power to halt work on a project if they are not satisfied with the procedures being followed, and/or if there is an instance of non-compliance with the relevant regulation and are therefore critical stakeholders.
- PPP units. Central PPP units also play an important role in the overall success of the project. Resources and information provided by central PPP units can be invaluable for sharing lessons learned and improving project outcomes. This can be from a central PPP unit within the regional or national government, or a central body which has been set up to assist with projects in certain sectors. The role of PPP units with respect to contract management team training is detailed in Section 2.2 (Contract management team training).
- Interfacing project operators. Stakeholder engagement is also required on projects which interface with other projects under the jurisdiction of a different Procuring Authority. Interfaces between different sectors or sub-sectors are very important. For example, a rail project may interface with power lines, other utilities, a highway or a bus rapid transit project.
- Local or regional authorities affected by the project. A high-profile project will be of broader interest to the government, as it has the potential to affect the reputation of the administration in power at the time.

The Procuring Authority should carefully consider what information needs to be passed on to other government departments, such as a ministry of finance or other regulators. As a range of reports will be produced during both the construction and operations phases, there needs to be an assessment made of what exactly the Procuring Authority should report to the relevant government agency. Where there are significant changes made to a project (e.g. significant scope changes) approval is likely to be needed from a department such as the ministry of finance. This emphasises how important it is to consider what information needs to be shared with these departments. Scope changes are detailed in Section 3.5 (Claims).

It is also important for the Procuring Authority to assist these bodies by providing relevant project data to inform future infrastructure development. The combination of information from multiple sources is part of how these organisations, network groups and sector bodies are able to add value and improve the use of PPPs in that particular region. A Procuring Authority should maintain good relationships with these bodies to allow it to have continuing access to such resources. All markets, irrespective of whether they are mature or developing, have scope to improve significantly the strategy and the approach to understanding the value of data, including collecting and sharing it and making smart and effective use of it.

#### EXAMPLE

#### Multiple government agencies

On the Port of Miami Tunnel project in the USA, funds were provided by federal, state, county and city sources, with the City of Miami also granting land access. The promise of ongoing funding to the Procuring Authority is particularly important given the decision not to impose tolls, as this increased the amount of money required from government. The Procuring Authority executed a funding agreement with the city and county, but these authorities had no direct oversight over the project. To assist in the management of the project, weekly meetings were held which included the Procuring Authority, the Project Company and the construction contractor, as well as representatives from city and county governments.

*For more information, see the Port of Miami Tunnel Case Study.*



**Q. Set up effective governance structures to manage the relationships with other relevant government agencies**

Coordination between different levels of government is an important aspect of contract management, which is amplified where financing is being provided by multiple bodies.

Appropriate institutional and governance frameworks should be established to enhance the flow of information between government agencies. Challenges can arise where there is overlap in the mandate of different government agencies which needs to be managed.

One method of achieving this is to set up project advisory boards which are made up of representatives from different government agencies.

**EXAMPLE**

**Project advisory board**

An advisory board was set up in one of the case studies to provide assurance, strategic oversight and advice in relation to the project to the Minister of the Procuring Authority. It has an independent chair, two additional independent members and representatives from the ministry of finance, the executive office, as well as other relevant ministries. The advisory board meets every month.

As well as providing assurance, oversight and advice to the Minister, it also acts as a forum for better communication and collaboration across the different relevant government bodies with respect to the project.

**R. Collaborate with the Project Company to work with other government agencies, where appropriate**

Challenges can arise due to differences in regulation between levels of government, such as between the local authority, state/provincial level and national level, and also because different aspects of a project are regulated by different government agencies. If agreements are not reached with relevant local authorities on projects procured (e.g. by a national government before financial close) delays to approvals and potentially additional taxes may be imposed, as has been the case in several jurisdictions.

**EXAMPLE**

**Construction permits**

During construction of the Brabo 1 Light Rail project in Belgium, an issue occurred where the Project Company's construction permit was revoked because of public objections to the proposed developments. A new permit was, however, issued a few months later. Together with the Project Company, the Procuring Authority worked as a partner to resolve the issue.

*For more information, see the **Brabo 1 Light Rail Case Study**.*

It may be appropriate in these circumstances for the Procuring Authority to work with the Project Company in engaging with other government agencies, particularly where the Procuring Authority has a stronger relationship with those other government agencies. Working with other government agencies during key transition phases is detailed in Section 3.1 (Transitions).

### **S. Plan early for managing other government or quasi-government agencies that the Procuring Authority does not have influence over**

There may be government agencies or quasi-government agencies that the Procuring Authority does not have a strong relationship with. In these circumstances, where certain project milestones rely on the input from those other government agencies, the Procuring Authority should plan early, and enter into agreements with those other government agencies to ensure there are no disruptions to the project.

#### **EXAMPLE**

#### **Interfacing projects**

The importance of managing interfaces with other projects was highlighted in the Intercity Express Programme project in the UK, where the success of the project depended on interactions with the delivery and electrification of track infrastructure. This was done by Network Rail, which is an arm's-length public body and therefore not part of the Department for Transport itself.

*For more information, see the Intercity Express Programme Case Study.*

#### **EXAMPLE**

#### **Land acquisition in India**

In India, the issue of land acquisition led to delays and disputes on numerous highways projects. Land management is a state subject under the responsibility of the Competent Authority for Land Acquisition (CALA). The National Highways Authority of India (NHAI), which is the Procuring Authority on many toll roads, has no direct control over CALA and is dependent upon the state governments and its policies. To address this, NHAI has regional offices in charge of the respective states, and they coordinate with the relevant departments in each state. In order to facilitate land acquisition, the NHAI enters into a state support agreement with the concerned state. The NHAI also employs retired officials from the state governments to assist with understanding land regulations.

### 3.4 Information Management

PPP projects generate a large amount of information and data, which must be managed by the Project Company and Procuring Authority throughout the project life. The Project Company is typically required to submit periodic performance reports with detailed reporting on performance failures, availability reports, safety reports, information on public policy issues, etc.

Managing information well ensures that the Procuring Authority has a clear understanding of how the Project Company is performing and the quality of the service provided. It is also directly relevant to performance monitoring (including monitoring of KPIs), detailed in Section 3.2 (Performance monitoring), and effective management of disagreements and disputes, detailed in Chapter 5 (Disputes).

Document control is an essential part of contract management. A number of projects were found to suffer from poor document and data control, which was the result of two factors:

- The volume of documents and data was underestimated when the contract management plan was formulated
- An inability to comply with the information management strategy in place

Challenges can arise when the parties do not recognise the importance of the information and data management strategy from the outset, particularly in the case of large and complex PPPs. Robust and well-structured document and data control ensures the continuity of knowledge throughout the duration of the contract. It also provides opportunities for knowledge sharing within the team and between the relevant parties. Continuity of knowledge among contract management teams is key to successful contract management.

Poor information management can lead to:

- Disagreements and disputes with respect to claims or scope changes, where neither party is fully aware of what the underlying facts are
- Non-compliance with intragovernmental reporting requirements
- Poor performance monitoring
- Poor public transparency with respect to the performance of the Project Company under a PPP contract
- Repetition of mistakes made on other projects because the remedies were not properly recorded

#### EXAMPLE

#### Document control during transitions

The Procuring Authority on the Brabo I Light Rail project in Belgium experienced a challenging transition between construction and operations, made more difficult by inadequate document control. A better information management system was needed to help with continuity of knowledge, and to access data and information that was created during construction.

*For more information, see the Brabo I Light Rail Case Study.*

#### SECTION STRUCTURE

This section provides guidance on information management. The key elements of successful information management are summarised below and detailed in Subsection 3.4.1 (Guidance):

- Understand the scope of the data to be collected and maintained as part of the project
- Develop an information management system that works for the Procuring Authority and the Project Company
- Where possible, use similar information management systems and software across multiple projects
- Agree the level of detail required from the Project Company early, to set expectations around the form of information required

### 3.4.1 Guidance

#### A. Understand the scope of the data to be collected and maintained as part of the project

The Procuring Authority needs to understand the size and requirements of the project from the outset so that it understands and can track the scope of the data to be managed. This will include having a thorough understanding of what is required under the PPP contract as well as what is required internally from a good record keeping point of view. Most of the information will be provided by the Project Company as part of its obligations under the PPP contract; however, the Procuring Authority should verify this information on a regular basis (as necessary) to ensure that it is accurate and consistent and keep internal records. For example, in relation to claims or other communications with the Project Company. The lenders to the project may also be required to report to the Procuring Authority in some circumstances.

#### B. Develop an information management system that works for the Procuring Authority and the Project Company

In many jurisdictions, Procuring Authorities define in the PPP contract that the Project Company must use a shared internet-based information management system for the duration of the PPP contract that will be accessible to both parties. Some Procuring Authorities prescribe the type of software to be used to ensure consistency with its own internal information management systems. The parties will also maintain their own internal information management system.

The Procuring Authority should carry out the following when setting up its information management systems:

- Involve all parties in setting up the information management strategy from the beginning to ensure compatibility
- Agree with the Project Company on what information needs to be collected and retained
- Agree with the Project Company to a common platform for storing and sharing documents, such as updated contractual documentation, annual reports, etc
- Identify the project needs and information management strategy before exploring the options for information management systems. Depending on the information management strategy and

agreed processes, some databases work better than others as they have advantages and disadvantages based on their use. In some cases, a conventional shared drive will be more suitable than a database

- Use a secure electronic information management system to keep records of all key documents
- Ensure the Procuring Authority has access to the relevant IT tools deployed by the Project Company throughout the life of the PPP contract, including helpdesk, performance monitoring systems, etc.

#### EXAMPLE

#### Incompatible information management systems

On the Gautrain Rapid Rail Link project in South Africa, data and information management systems were stipulated in the contract. These systems turned out to be incompatible with the Project Company's systems. The Project Company had to convert their document and information management system to be compatible with the Procuring Authority.

*For more information, see Gautrain Rapid Rail Link Case Study.*

#### C. Where possible, use similar information management systems and software across multiple projects

Where a Procuring Authority has systems in place for their portfolio of assets, it is more efficient to build the information management strategy to fit with their existing systems. The decision to set up a new information management system or database should be carefully approached and looked at as a last resort. Implementing new systems into an organisation is a time consuming and costly endeavour that should not be considered unless the existing systems are inadequate.

The Procuring Authority should adopt a single piece of software where possible, which it is already familiar with, to be used between the parties for all communication and record keeping purposes. For example, in one of the case studies, a dedicated program called 'Teambinder' was used successfully as a communication and record management tool and is also consistently used on other projects procured by the Procuring Authority.

**D. Agree the level of detail required from the Project Company early, to set expectations around the form of information required**

The contractual requirements of the information management system do not always specify the level of detail required, which is important from an operational point of view. This can be problematic when it is not clear what is required. The Procuring Authority should agree what is required from the Project Company from the outset of each project phase, as the level of detail may not be prescribed in the PPP contract.

### 3.5 Claims

A PPP contract typically gives the Project Company the right to claim compensation and/or time relief for certain defined events. Typically, these involve situations where the Project Company has incurred unanticipated costs and/or delays, due to acts or omissions of the Procuring Authority or a third party, or due to *force majeure* events.

A PPP contract typically also contains provisions where the Procuring Authority has a right to make a claim against the Project Company. Section 3.2 (Performance monitoring) details the arrangements governing the Project Company's performance and the application of payment deductions for non-performance, and Chapter 7 (Default and termination) details Project Company default. In contrast, this section 3.5 deals with claims made by the Project Company.

Claims can involve significant amounts of money. If they are not managed well they can lead to higher costs for the Procuring Authority and could impact on the value for money forecast at financial close. Additionally, whether the claims made by the Project Company are justified or have merit is not always clear at the outset of a claim, so they can be contentious and have the potential to lead to disputes. Management of disputes is detailed in Chapter 5 (Disputes).

It is important for Procuring Authorities to set up robust internal procedures for managing claims and scope changes as the right of Project Companies to make claims is fundamental to the risk allocation of PPP contracts and how they operate.

This section considers claims irrespective of the specific mechanism used to process the claim. For example, specific claim mechanisms and procedures are typically defined in common law PPP contracts. However, civil law PPP contracts may rely more heavily on general law principles, particularly with respect to *force majeure* claims or material adverse action by government authorities. Some civil law PPP contracts also rely on economic rebalancing procedures, detailed in Chapter 4 (Renegotiation). The specific mechanisms for making claims are not detailed in this section as they vary substantially across jurisdictions.

Although this section deals with various types of claims made by Project Companies, it particularly focuses on claims arising from scope changes, which are quite common. Scope changes can be slightly different to other types of claims and can also be initiated by either party. Scope changes may also

be more complex as they have the potential to affect the risk allocation agreed in the PPP contract.

A more serious claim made by a Project Company could result from a Procuring Authority breach of the PPP contract giving rise to a Procuring Authority default and termination rights. There are also circumstances where the persistence of certain claims over a prolonged period (e.g. a prolonged *force majeure* event) will ultimately lead to termination rights. Both of these topics are detailed in Chapter 7 (Default and termination).

#### SECTION STRUCTURE

This section provides a background to managing claims in Subsection 3.5.1 (Background) and provides guidance on managing claims. The key elements to successfully managing claims are summarised below and detailed in Subsection 3.5.2 (Guidance).

- A. Understand the Project Company's rights to claim under the PPP contract and ensure the team is adequately resourced to assess claims
- B. Monitor the risk of potential claims to mitigate their occurrence and prepare early for their receipt
- C. When assessing scope changes, aim to retain the risk allocation agreed at financial close and ensure value for money
- D. Understand the claim and scope change procedures set out in the PPP contract and ensure the Procuring Authority complies with the procedures
- E. Process claims and scope changes quickly to avoid them turning into disputes or having other adverse impacts on the project
- F. Work with other government agencies to mitigate the risk of claims arising and to assist in the processing of claims
- G. Introduce polices to limit early and frequent scope changes
- H. Be aware of the interests and requirements of the Project Company's lenders in the processing of claims

### 3.5.1 Background

This background provides a summary of some common types of claims that can be made by a Project Company under a PPP contract, noting the ability to claim will depend on the specific PPP contract and the underlying legal framework, including the risk allocation agreed between the parties. For guidance on typical risk allocation arrangements between the Procuring Authority and the Project Company see the GI Hub's PPP Risk Allocation Tool<sup>1</sup>. The purpose of this background information is to set the context of typical types of claims and some common types of claims procedures. A selection of common types of claims are outlined below and are detailed in this subsection:

- Claims for the Procuring Authority's breach of contract
- Material Adverse Government Action (MAGA)
- Change in law or relief from sanctions
- *Force majeure*
- Scope change

#### Claims for the Procuring Authority's breach of contract

An issue of Procuring Authority non-compliance or breach of the PPP contract which negatively affects the Project Company's ability to deliver its works or services will typically lead to a claim for additional time and costs. When a breach of a contract is defined as a default, then it could give also rise to termination rights. For example, failure to provide land or access to a site on time, failure to make a payment on time, failure to execute third party agreements on time, failure to secure relevant approvals, or failure to deliver interfacing infrastructure. Other actions that negatively affect the Project Company's ability to deliver its works or services can also lead to a right to claim.

#### Major Adverse Government Action (MAGA)

There are several risks in a PPP project that have the potential to significantly impact a project but are not under the direct control of either party. For example, actions or inactions of a government agency (other than the Procuring Authority) that have a material adverse impact on the project and the Project Company. It is typical that the

Project Company will want the Procuring Authority to retain this risk as the Procuring Authority is a government agency and has a greater degree of control over such events. Several jurisdictions describe this type of event specifically as a 'Material Adverse Government Action' or 'MAGA' and PPP contracts generally include provisions allowing the Project Company to seek relief with respect to the materialisation of a MAGA event. Other jurisdictions may have other mechanisms but will typically allow the Project Company to claim relief.

#### Change in law or relief from sanctions

A change in law or a sanction can also have an impact on the Project Company as the Project Company is required to adhere to the relevant rules and regulations of the jurisdiction in which it operates. Which party is required to pay any additional costs related to a change in law will depend on the risk allocation agreed in the PPP contract. The PPP contract will typically set out the circumstances in which a party can seek relief as a result of specific changes in law, and which changes in law will not carry with them any entitlement to relief. There may also be potential for the Project Company to benefit from a change in law, meaning that any compensation payments for change in law can flow in either direction. The 2017 version of the World Bank's Guidance on PPP Contractual Provisions<sup>2</sup> provides detailed commentary on different types of change in law regimes.

#### Force majeure

The phrase *force majeure* typically refers to events that are outside of the control of the parties, could not have been anticipated and make it impossible for a party to comply with the PPP contract. *Force majeure* provisions are common in PPPs and what constitutes a *force majeure* event may be set out in the relevant PPP contract or in the relevant law (particularly in civil law jurisdictions). The occurrence of *force majeure* events are commonly approached in a manner which allows the parties to be relieved of their contractual obligations, as these events are unforeseen and out of the control of either party. The risk of an event's occurrence is often shared between the parties. *Force majeure* events are rare. The data analysis indicates that 7% of projects suffered a *force majeure* event and most claims of *force majeure* were a last resort.

<sup>1</sup> Available at <http://ppp-risk.gihub.org>.

<sup>2</sup> Available at <http://ppp.worldbank.org/public-private-partnership/library/guidance-on-ppp-contractual-provisions-2017-edition>.

A Project Company is typically required to have insurance to cover certain *force majeure* events which are insurable. Insurance will be in place as a method to transfer the risk of the insurable force majeure to a third party insurer. The Project Company will typically pay any required insurance premium. The Procuring Authority should be aware of any insurance held by the Project Company or that should be held by the Project Company. The Procuring Authority should be aware of the effect of an event becoming uninsurable, where the Procuring Authority may need to effectively self-insure.

### Scope change

There are typically two key types of scope changes that may require different approaches from the Procuring Authority to manage:

- Minor scope changes. Minor scope changes should be manageable within the scope change provisions of a PPP contract without having a significant impact on the agreed risk allocation.
- Significant scope changes. A significant proposed scope change may be more complex to assess and to implement. Procuring Authorities should be aware that the contract may impose limits on the ability of either party to initiate changes of this nature within the scope change mechanism set out in the PPP contract. Renegotiation may be the appropriate mechanism to use where such changes are required, but termination may also need to be considered. Significant scope change will also have the potential to affect the risk allocation agreed in the PPP contract. Renegotiation is detailed in Chapter 4 (Renegotiation) and termination is detailed in Chapter 7 (Default and termination).

Typically, either the Procuring Authority or the Project Company may request a scope change. The Procuring Authority will often have the right to direct a minor scope change. Such a change will be subject to agreement on time and costs and this will affect how the process is managed by the Procuring Authority. The specific procedure will depend on the PPP contract and the underlying legal framework.

### EXAMPLE

#### Accelerated airport expansion

The Queen Alia International Airport Expansion project in Jordan experienced a significant scope change when it became evident that passenger numbers were higher than had been predicted. The original plan had been to expand the airport in two stages, however it became clear that the first stage of expansion would not be sufficient to account for the passenger growth. While construction was continuing, both parties agreed that it would be more efficient to change the design so the expanded terminal was able to handle higher volumes than had been originally estimated. This was a situation where a clear benefit was visible and, with the extra revenue of higher passenger numbers, the negotiation was relatively simple. The incentives to both sides were aligned and a superior service to the users was achieved.

***For more information, see the Queen Alia International Airport Expansion Case Study.***



### 3.5.2 Guidance

The following guidance outlines the key issues that should be considered when managing claims made by a Project Company in relation to a PPP contract.

#### **A. Understand the Project Company's rights to claim under the PPP contract and ensure the team is adequately resourced to assess claims in a timely manner**

The Procuring Authority should be equipped to manage claims. It should also have a good understanding of the contract mechanisms applicable to the claim and the fundamental risk allocation agreed between the parties in the PPP contract. When a claim is received, the Procuring Authority should act quickly to first assess the merits of the claim and, if the claim has merit, the likely implications of approving the claim (including the financial implications).

How project risks are allocated between the parties is normally carefully developed, negotiated and agreed in the PPP contract and this allocation should be maintained. Identifying the underlying cause of the claim will allow the Procuring Authority to assess its merit. To be able to properly assess claims the Procuring Authority should be aware of the circumstances in which the Project Company is entitled to make a claim under the PPP contract (or under the applicable law) so that claims can quickly be assessed on their merit. Some examples of when the Project Company may be entitled to make a claim are detailed in Subsection 3.5.1 (Background).

It is also worth considering the role of the Project Company's key contractors, from whom many of the Project Company's claims will likely originate.

The merits of a claim may be encompassed within complex legal documentation. Claims may also be subject to relevant threshold requirements (such as that only material claims can be made) or there may be caps in terms of a maximum amount payable with respect to a claim. These legal boundaries, thresholds and caps also need to be considered. It is important that legal advice is sought at an early stage with respect to claims where the risk allocation is not clear to the contract management team. For example, challenges can arise when the Project Company makes a claim regarding a shared risk or in circumstances where the relevant risk allocation is understood differently by the parties.

The likely consequences of approving the relevant claim should be assessed. This will include an assessment of the financial and timing

consequences of approving the claim, including any mitigation measures that can be taken to minimise the cost or time implications. Steps proposed to be undertaken by the Project Company to mitigate delays and costs to the project should be well understood and documented prior to approving a claim. Relevant technical and financial specialists will need to be involved in this process.

The assessment of a claim will be substantially dependent upon the level of information available. It is common for contracts to specify a minimum level of information to be provided by the Project Company when making claims. However, more information may be required. In addition to using its own records, the Procuring Authority should be aware of the rights it typically has under a PPP contract to request more information from the Project Company, or indirectly from the Project Company's contractors. Even if no such obligation exists, it is difficult for the Project Company to argue that the Procuring Authority should not be given access to additional information.

In practice, even where the merit and quantum of a claim is relatively clear, that does not mean that the resolution of the matter will always be straightforward, as many other factors may come into play such as the balance of power between the parties and the existence of other claims and objectives.

The assessment of the claim and its consequences should consider the availability of any relevant insurance either held by the Procuring Authority, by the Project Company or by a third party. If a claim involves a risk that is covered by an insurance policy, the insurers should be involved in the process as early as possible.

Claims should only progress if the risk was allocated to the Procuring Authority under the PPP contract, to ensure the allocation of risk agreed between the parties is not altered.

#### **B. Monitor the risk of potential claims to mitigate their occurrence and prepare early for their receipt**

A thorough understanding of the PPP contract is essential for mitigating the risk of claims and preparing for their receipt where a claim may be inevitable. For this it is common for the Procuring Authority to establish a risk register which should provide a continuous assessment of the relevant risks in terms of their likelihood, severity and potential mitigation measures available.

The risk register should be revisited on a regular basis throughout the life of the project as the risk environment will likely change given the long timeframes involved. This involves assessing and reassessing, on an ongoing basis, both the likelihood and severity of impact should a risk materialise and assessing whether there are any actions that the Procuring Authority can take to prevent or mitigate those risks, given any new information that has been made available.

Monitoring project risks will mean the Procuring Authority is aware of potential claims and can start considering them and planning for them before they are received from the Project Company.

The Procuring Authority should consider the implications of changes in technology over the contract duration. For example, what happens when certain lifecycle items become obsolete due to technology changes or changes to services due to technological advancement? Changes in law can also affect the risk profile of a project. It is unusual for changes in law to happen overnight, perhaps with the exception of international sanctions. Where the prospect of a change in law or technology change appears reasonably likely, it is sensible for the Procuring Authority and the Project Company to discuss in advance how those changes will be addressed.

### **C. When assessing scope changes, aim to retain the risk allocation agreed at financial close and ensure value for money**

A key consideration that specifically relates to scope changes is the potential impact that a scope change will have on the risk allocation agreed between the parties. This is of particular relevance where the scope change is significant and the terms of the PPP contract are required to be amended. Renegotiation is detailed in Chapter 4 (Renegotiation). As noted above, the allocation of project risks between parties is normally carefully developed, negotiated and agreed in the PPP contract and this allocation should be maintained through any scope changes.

Given the long-term nature of PPP contracts, it is not uncommon that there will be a need for a scope change at some stage. This can arise through changing priorities of the Procuring Authority, advancements in technology, required design enhancements or through broader economic changes in the country or region (including changes in demand). Scope changes can also occur as the result of inadequacies in the original scope or due

to an opportunity to optimise design or construction works or services (such as costs savings available due to changed market conditions for steel or concrete).

Typically, each party has the right to initiate a scope change request, and an agreed scope change procedure typically prescribes the step-by-step arrangements for managing the requested scope changes and associated timelines for the parties to submit proposals and provide approvals. It is also not uncommon for the Procuring Authority to have the right to instruct an immediate minor scope change with pricing and time to be agreed at a later stage. The specific procedure will depend on the PPP contract and the underlying legal framework and should be well known to the Procuring Authority.

Where the Project Company has initiated a scope change request, the Procuring Authority will need to carefully analyse the Project Company's rationale for the proposed scope change and all the implications of the Project Company's request, including whether the evidence submitted to document the cost, time and risk implications is valid and robust and satisfies value for money tests.

Where the Procuring Authority has initiated a scope change, the Procuring Authority should have undertaken an initial assessment and have an understanding of the scope of the proposed change, its cost and time implications, and the overall impact on the risk profile, before the scope change request is passed to the Project Company.

Irrespective of whether a scope change is initiated by the Procuring Authority or the Project Company, a full assessment of its impacts will need to be undertaken by the Procuring Authority. There will generally be a cost and/or time impacts (although not always, and such cost/time implications may be positive for the Procuring Authority in cases where the scope is reduced). There may also be an overall impact on the risk profile. This impact assessment should be completed before any negotiation over the terms of the scope change begins and should include evaluations of the financial, technical, contractual and program implications of any scope change.

Any potential scope change assessment should consider in full the implications on: scope of works; cost implications; allocation of risk; impacts on the existing risk profile; changes to the existing capital expenditure; operational expenditure and lifecycle budgets; time implications; impacts on the payment mechanism and performance standards; impacts

on the existing security packages (e.g. performance bonds and guarantees) provided by the Project Company, liability caps; and any potential impact on the value for money of the project.

Any added value that could be generated for the project as a result of a potential scope change should also be explored.

To assist its assessment, the Procuring Authority may be able to implement a form of benchmarking or market testing to ensure it is still receiving value for money for the changed scope. This is typically not a simple process, particularly given that alternative contractors are likely to charge a premium for taking on a project delivered by another contractor, and given that the intervention of another contractor may adversely affect the warranties and indemnities provided by the Project Company. In some jurisdictions, a schedule of rates will be included in the contract for certain scope changes, which can also be used in assessing scope changes.

#### EXAMPLE

#### Use of benchmarking

On the Central Berkshire Waste project in the UK some waste and haulage services were subject to benchmarking. The contractor would compare its costs with the market price of equivalent services. The price would then be adjusted accordingly, unless the Procuring Authority chose to proceed to market testing, which is effectively re-tendering of the contractor's scope. Any subsequent increase or decrease in the cost of the works or service would then be reflected by an adjustment to the unitary payment available to the Project Company. While benchmarking may be carried out by the Project Company, it is essentially a joint exercise, as the Procuring Authority must be satisfied that it is receiving value for money. A team comprising representatives from both parties can be set up to oversee this type of benchmarking exercise.

***For more information, see the Central Berkshire Waste Case Study.***

The allocation of risk associated with a material scope change can also be the subject of prolonged commercial negotiations and the Procuring Authority may need to hire external advisors

for significant or complex scope changes.

Questions over what constitutes a change and what falls within the scope of the Project Company's pre-existing obligations also have the potential to lead to disagreements.

#### **D. Understand the claim and scope change procedures set out in the PPP contract and ensure the Procuring Authority complies with the procedures**

The Procuring Authority should have full visibility on its procedural obligations with respect to claims and scope changes and the timelines for performing these obligations as agreed in the PPP contract. When a claim is received by the Procuring Authority it is important to be aware of the agreed procedures to ensure compliance.

The Procuring Authority should also be clear which activities are on the critical path and which are conditions precedent for other major activities as the timelines will typically be integrated into the Project Company's program. Failure to respond to claims according to the agreed procedures may render the Procuring Authority in breach of the PPP contract and liable for additional claims. This is particularly the case where there are deeming provisions (where a claim may be deemed to be accepted when no response has been received from the Procuring Authority within a defined time).

It is advisable for Procuring Authorities to establish efficient internal procedures to ensure that claims are processed in a timely manner as required by the PPP contract. In many instances, template documentation can be prepared to assist with the initial stages of responding to common claims, which can be created with the assistance of legal advice.

The research indicates that it is not uncommon for scope change procedures to be overlooked or not followed properly. This can result in significant problems, including increased tension in the relationship with the Project Company and increased risk of disagreements in the absence of a clear process.

Notwithstanding the need to follow the procedures set out in the PPP contract, there are times when these procedures may turn out to be unworkable, in particular where time periods to generate information, review and respond may be impracticable. For example, in a situation where additional external resources need to be mobilised to assess matters. In these circumstances, the risk

of increased tension between the parties is also higher. A solution to this issue is for the parties to formally waive their strict contractual requirements and to agree to a less formal and more workable processes. Waiving rights under a contract should only be undertaken after receiving legal advice, to ensure an appropriate waiver is effected (i.e. that the Procuring Authority is waiving only what it is intending to waive and not waiving the Project Company's obligations to comply with the relevant procedure in the future). An amendment to the PPP contract may also be appropriate. Renegotiation is detailed in Chapter 4 (Renegotiation).

One option for dealing with scope changes which can smooth their implementation is to carry out a 'soft' opening. A soft opening involves issuing a scope change notice informally, allowing the change to be considered a number of weeks in advance of issuing a formal notice. Care needs to be taken to avoid inadvertently triggering the formal scope change mechanism. Unless express contractual provisions exist permitting a 'soft' opening, legal advice should be sought in relation to this process.

#### EXAMPLE

##### Taking a flexible approach to variations

The Central Berkshire Waste project in the UK introduced a system whereby one party submits an informal notice of change one month before the formal notice is issued. This gives each party the opportunity to review and adapt to its implementation before it is formalised.

On the InterCity Express Programme project, also in the UK, challenges from associated infrastructure works meant that the Procuring Authority had to take a flexible approach to dealing with variations.

*For more information, see the Central Berkshire Waste and InterCity Express Programme Case Studies.*

#### E. Process claims and scope changes quickly to avoid them turning into disputes or having other adverse impacts on the project

Once the Procuring Authority has assessed the merits of a claim and it has satisfied itself that the claim has merits, it should aim to accept the claim as quickly as possible. Whenever possible,

the relationship between the parties should not be affected by a drawn-out claim, nor should the parties spend unnecessary amounts of money in disagreement or dispute about a claim that should be accepted by the Procuring Authority. Management of disputes is detailed in Chapter 5 (Disputes).

The management of scope changes needs to be undertaken efficiently to minimise adverse impacts on the project while at the same time preserving value for money. It is important to classify scope changes and develop a framework to ensure minor changes can be dealt with efficiently while significant changes (e.g. addition of a new airport runway) undergo a robust review to ensure value for money.

Where the parties cannot agree to the merits of a claim or the consequences (including compensation payable or additional time) the parties should work together to come to a solution.

#### EXAMPLE

##### Working in partnership to avoid disputes

The Brabo I Light Rail project in Belgium was connected to the wider network of Antwerp, resulting in increased usage and maintenance requirements of some sections of the project. The Project Company and Procuring Authority worked together to estimate the additional costs, avoiding any disagreements.

*For more information, see the Brabo I Light Rail Case Study.*

It is also important that the Procuring Authority understands the impact that cash flow risk may have on the Project Company's or its contractor's behaviour in dealing with claims. From a Project Company's perspective, there is a strong preference for having claims assessed as quickly as possible, even at the risk that only part of its claim is successful. Conversely, where a claims process is delayed (and particularly where similar claims continue to be made and not assessed) the Project Company may become entrenched in its position. This highlights the importance of dealing with claims and opening a direct line of communication as quickly as possible. Project Company cash flow risks are detailed in Chapter 6 (Insolvency), which details guidance on the financial status of Project Companies prior to insolvency.

Having effective governance structures in place to process and approve claims quickly will be key. Guidance on governance is detailed in Section 2.1 (Contract management team set-up) and Section 3.3 (Performance monitoring) (with respect to other government stakeholders that are not the Procuring Authority, such as a ministry of finance or equivalent government agency).

**F. Work with other government agencies to mitigate the risk of claims arising and to assist in the timely processing of claims**

The Procuring Authority should work with other government agencies to mitigate against the occurrence of a MAGA event, as detailed in Subsection 3.5.1 (Background). This will require closely managing relationships with other government agencies.

There can also be a threshold value for scope changes which the Procuring Authority can implement without seeking approval from the relevant authority in the government. For example, in the Philippines that threshold is 10% of the total capital value. For any scope changes below the threshold value, the Procuring Authority is required to report the scope change to the financing authority but no approval is required from the financing authority. Approval is required for any scope changes above the threshold. Other jurisdictions may define a material scope change which requires approval from the relevant ministry of finance or equivalent agency.

Managing relationships with other government agencies is one of the topics detailed in Section 3.3 (Stakeholder management).

The procurement regulations and other applicable laws of a particular jurisdiction may also impact on what the Procuring Authority can do in terms of providing additional funding to compensate for a claim made by the Project Company. For example, the concept of 'state aid' in the EU restricts what a public sector body can provide to a private organisation such as a Project Company and this has to be assessed carefully.

Where the settlement of a claim or approval of a scope change requires additional funding, securing the budget for implementing the scope change should be considered at an early stage of the process. An inability to settle a claim quickly can mean that the claim inadvertently progresses to a dispute. This risk should be mitigated by properly communicating with and working other relevant government agencies, including a ministry of finance or equivalent agency.

**G. Introduce polices to limit early and frequent scope changes**

The Procuring Authority should aim to limit the introduction of too many scope changes soon after financial close, as this might affect value for money forecast at financial close and alter the risk allocation agreed in the PPP contract. For example, such actions may be symptomatic of shortcomings in the design, such as its incompleteness.

The key issue associated with significant scope changes is that it is no longer obvious that the Project Company offers the most cost-effective solution for the scope change in the absence of competition. This is because the scope change may be being processed through what is an agreement negotiated bilaterally between the parties, without competition, and the project's value for money becomes less clear. Some jurisdictions require a freeze on design changes made after financial close for an initial duration.

Minor changes during the course of operations are considered normal, as they may entail little or no costs but can capture changes in circumstances during the contract's lifecycle.

**H. Be aware of the interests and requirements of the Project Company's lenders in the processing of claims**

Significant claims and scope changes are of key concern to project lenders and the Project Company's loan documents will likely contain restrictions on what scope changes are permitted and when lender consent is required. The threshold for when consent is required is typically low.

The lenders want to be involved where there is a significant change to the scope and risk profile of the project, whether or not lenders are required to finance the scope change. Any change to the risk profile agreed at financial close may have an impact on the cash available to pay debt service obligations to the lenders and could lead to a default under the finance documents. The Procuring Authority should be aware of this to ensure it is considering the interests of the lenders in assessing a potential scope change and give the lenders the time required to complete their due diligence and associated assessments, and give their approvals.

**EXAMPLE****Lender approval requirement**

There were a range of changes that had to be implemented on the InterCity Express Programme project in the UK and the associated commercial negotiations were complex and time consuming. Lender approval needed to be secured and this led to the extensive use of external advisors. Nevertheless, the parties were able to work collaboratively to overcome these challenges.

***For more information, see the Intercity Express Programme Case Study.***

It may be difficult to assess how the Procuring Authority should move forward if the lenders ultimately decide that they are not willing to proceed as the new risk profile is outside parameters they are comfortable with and they believe that the Project Company has a legitimate right to reject the proposed scope change. In the case of a major proposed change, this objection may only come at the end of a costly and time-sensitive preparation process. In such circumstances, the Procuring Authority may have limited options. One option would be for the Procuring Authority to agree up front with the Project Company the parameters that the scope change will take and for the Project Company to agree to forgo its right to reject the scope change if it stays within these boundaries. Another possibility might be to undertake it through a separate contractual process outside of the existing contract regime. A more extreme and less common route is for the Procuring Authority to buy out the debt, on the basis that, after the change is implemented, the Procuring Authority will transfer the debt, once the project has reached a new equilibrium.

### 3.6 Change of ownership

It is not uncommon for an equity investor in a Project Company to seek to change their equity interest (including by selling that interest to a new equity investor) as the Project's risk exposure changes over time. However, in many instances the PPP contract contains restrictions on the ability of equity investors to enter into such transactions. In any event, the Procuring Authority should be aware of this type of activity, and ensure the Project Company remains financially stable and retains the ability to perform its obligations under the PPP contract through the whole duration of a project.

The Project Company involved in a PPP is typically a special purpose vehicle or 'SPV', set up for the sole purpose of owning the assets in a project and complying with its obligations under the PPP contract. The Project Company will be owned by equity investors who have financed the equity portion of the project. Where an equity investor changes its equity interest in the Project Company (including by transferring it) this is typically referred to as a 'change of ownership'. Changes of ownership are also commonly referred to as secondary market transactions.

The definitions of 'change of ownership' and the associated 'change in control' are often defined in a PPP contract and, as indicated, are typically subject to restrictions – including a requirement that such changes can only be made with the approval of the Procuring Authority. The restrictions are designed to protect a Procuring Authority (particularly during the early stages of a project) from the potentially adverse consequences of a change of ownership of the Project Company.

According to our research, approximately 18% of the projects analysed went through a change of ownership that required Procuring Authority approval. A third of those occurred in Europe, with substantial numbers in India and Latin America. There was no apparent difference between sectors in likelihood of a change of ownership. The timescale of the data sample size (projects that reached financial close between 2005 and 2015, inclusive) will have an impact on the overall percentage of changes of ownership, as some projects are still in their very early stages. It is also likely that additional changes of ownership have occurred which did not require the consent of the Procuring Authority.

#### SECTION STRUCTURE

This section provides a background to Project Company changes of ownership in Subsection 3.6.1 (Background) and provides guidance on managing changes of ownership. The key elements to successfully managing changes of ownership are summarised below and detailed in Subsection 3.6.2 (Guidance).

- A. When assessing a change of ownership, consider the interests of the Procuring Authority and broader government considerations
- B. Dedicate appropriate resources to assessing a change of ownership including external advisors as necessary
- C. Consider the interests of the lenders when assessing a change of ownership

#### 3.6.1 Background

Equity investors may seek to change their equity interest in a Project Company as the project's risk exposure changes over time. For example, a project will be significantly de-risked once construction is complete, defects are rectified and the revenue from the project assets during operations has had time to 'ramp up' and normalise. This de-risking has an impact on the type of equity investor the project is suited to.

The risk exposure of a project at financial close may be well suited to an equity investor that has construction expertise (such as the construction contractor). However, it may be less suitable to that same equity investor once construction completion has occurred and the project is several years into its operations. Similarly, a project that is several years into operations may be better suited to a more risk averse equity investor and such an investor may not have been interested in investing at an earlier stage of the project.

The following circumstances are three examples in which a change of ownership may be appropriate (though there will be additional circumstances which are not adverse to the interests of the Procuring Authority):

- The construction contractor (in addition to having interest in a project as construction contractor) may also be an equity investor in the Project Company. Following construction completion

and the initial period of operation, the construction contractor investor may wish to exit the project as its involvement is now limited; its experience no longer required; and its interests are no longer aligned with the interests of the other equity investors. Allowing the construction company to sell its equity interest may enable it to invest in a new project with a construction element. As the Project Company is typically an SPV with few or no assets (other than the project assets) and limited full-time staff, the Procuring Authority will want to ensure that the relevant expertise of the equity investors who control the Project Company is retained through the construction period and likely for some time into operations, particularly if there are concerns about the quality of the construction works or remaining defects. A typical waiting period may be 18 months or more after completion of construction.

- Equity investors' interests can change over time. For example, an equity investor may wish to reduce its overall exposure to a region by diversifying into other regions. When a purely financial equity investor wishes to sell its equity interest (and if the financial equity investor does not bring any particular special skills to the project) its replacement with another equivalent equity investor may not introduce any new risks to the project or diminish the public benefit. In addition, many infrastructure funds are 'closed end', meaning that the fund manager must sell assets and return the investment to the original investors at a given time, which may not align with the end of the PPP contract.
- An equity investor may wish to recycle its capital into new investments, which can be beneficial to the government as more capital will be available for new projects being tendered.

Procuring Authorities are well advised to understand the different drivers and objectives of the prospective equity investors at the time of procurement and agree appropriate restrictions in the PPP contract.

Change of ownership can be addressed in several ways under a PPP contract. They can include provisions requiring the Project Company to seek prior written consent from the Procuring Authority for a change of ownership and/or restrictions on the timing of when a change of ownership can occur. For example, the PPP contract may specify that a period of time must lapse before any disposal is permitted without the Procuring Authority's approval. The Procuring Authority's approval may also contain

a positive obligation on the Procuring Authority that its consent will not be unreasonably withheld or delayed. This positive approval obligation may contain a specific timeframe in which the Procuring Authority will need to respond. Any timeframes must be followed to ensure the Procuring Authority is not in breach of its obligations under the PPP contract. A change of ownership may also require approval by the Procuring Authority under the applicable laws.

### 3.6.2 Guidance

The following guidance outlines the key issues that should be considered when consent of the Procuring Authority is required for a Project Company change of ownership.

#### **A. When assessing a change of ownership, consider the interests of the Procuring Authority and broader government considerations**

A request for a change of ownership made to a Procuring Authority should be allowed, provided that such a change does not increase the risk to the government or diminish the public benefit. As described in Subsection 3.6.2 (Background), there can be benefits for the Procuring Authority, the Project Company and the government more generally in allowing changes of ownership, but these benefits must be balanced with the risks associated with such changes.

The following are some examples of how a change of ownership may adversely affect the Procuring Authority and should be considered along with any specific provision in the PPP contract or under the applicable laws:

- Does the change of ownership adversely impact the ability of the Project Company to carry out its obligations under the PPP contract without the expertise of the relevant equity investor?
- Is the proposed new equity investor solvent and reputable? Has it fulfilled all of its equity commitment obligations (i.e. has it contributed all of its required equity capital to the Project Company)?
- Does the change of ownership affect the Procuring Authority's or another government department's liabilities (including contingent liabilities) under the PPP contract or some other applicable law?
- Does a conflict of interest arise between the Procuring Authority and the proposed new equity investor or another relevant stakeholder? Can it be effectively managed?



- E. Is it in the public interest to approve the change of ownership and the introduction of a new equity investor? (For example, public interest may be related to any adverse impact on national security or in regard to the integrity of the proposed new investor.)

Any matters of a sensitive nature related to the Procuring Authority's decision to withhold its consent to a change of ownership (e.g. on the basis of public interest) may be dealt with in a confidential side letter.

There are many instances where the expertise in managing a project's assets are provided by third parties (such as a specific management company) rather than the equity investors themselves. It is important that those arrangements are carefully reviewed and that the required resourcing and expertise to continue to manage the project's assets in an effective manner is maintained through any change of ownership.

#### EXAMPLE

### Considerations for a change of ownership

The Project Company for the anonymised hydropower plant project in Brazil went through a variety of changes of ownership guided by changes in the equity investors' legal structure and ownership. The changes had to be reviewed and approved by the Procuring Authority. When granting its approval for a change of ownership in the Project Company the Procuring Authority's main concern was to ensure that the new equity investors were financially stable and technically capable to continue the operation of the project.

*For more information, see the Hydropower Plant Case Study*

### **B. Dedicate appropriate resources to assessing a change of ownership including external advisors as necessary**

The Procuring Authority should ensure that it has the necessary financial, legal and technical capabilities to assess a request for a change of ownership. As will be clear from the range of factors described above that need to be considered when assessing a request for change of ownership,

substantial efforts may need to be undertaken to achieve this. Similarly, some aspects of the approval process may need legal input, such as what is meant by 'unreasonably withholding' approval of a change of ownership. A technical assessment will need to be made on whether the Project Company will still be able to comply with its obligations under the PPP contract with the new equity investor. If the Procuring Authority does not have the relevant financial, technical or legal expertise in-house, it should appoint external advisors to assist. The use of external advisors is detailed in Section 2.1 (Contract management team set-up).

### **C. Consider the interests of the lenders when assessing a change of ownership**

Lenders also have an interest in changes of control of the Project Company and they may also require a commitment from the equity investors to maintain their financial stakes in the project for some minimum period. Consent from the lenders to a change of ownership is often linked to consent from the Procuring Authority. The Procuring Authority should consider these interests and not use its approval right in a way that will interfere with the ability of the lenders to protect their interests (e.g. by causing unnecessary delays). The interests of the lenders and the Procuring Authority are typically aligned in this situation, as both parties require a financially stable and technically capable Project Company to deliver the project.

### 3.7 Refinancing

Refinancing refers to changing or replacing the existing lenders or terms on which debt obligations have been agreed between the Project Company and its lenders. The Project Company will have typically raised debt capital for the project and where it has taken the risk on the debt financing it is generally entitled to rearrange it (though often subject to restrictions). The financial structure of the Project Company is also of interest to the Procuring Authority as it can affect the financial integrity of the Project Company and the project. For example, a refinancing has the potential to raise additional debt which can overleverage the project and/or increase the government's contingent liabilities.

In addition, a lack of available financing may mean a project becomes unable to continue operations. Financial distress of the Project Company and insolvency are detailed in Chapter 6 (Insolvency). The focus of this section 3.7 is on managing refinancing where there is an available financial market to raise new debt capital.

Refinancing may also be of interest to the Procuring Authority if the PPP contract contains a provision that any financial gains resulting from a refinancing be shared with the Procuring Authority. For example, see the provisions on refinancing found in the 2017 version of the World Bank's Guidance on PPP Contractual Provisions.<sup>3</sup>

Approximately 15% of projects in the study had a refinancing of debt which required approval from the Procuring Authority. The figures were dominated by Europe, where three quarters of these refinancings occurred. Almost all refinancings identified during the study took place in the transport sector, however it is difficult to know whether this was a result of characteristics of the particular projects studied or whether it is reflective of the data collection process. The timescale of the data sample size (projects that reached financial close between 2005 and 2015, inclusive) will have an impact on the overall percentage of refinancings as some projects are only in their very early stages.

<sup>3</sup> Available at <http://ppp.worldbank.org/public-private-partnership/library/guidance-on-ppp-contractual-provisions-2017-edition>.

#### SECTION STRUCTURE

This section provides a background to Project Company refinancing in Subsection 3.7.1 (Background) and provides guidance on managing refinancing. The key elements to successfully managing refinancing are summarised below and detailed in Section 3.7.2 (Guidance).

- A. When assessing a proposed refinancing, consider the interests of the Procuring Authority and broader government considerations
- B. Dedicate appropriate resources to assessing a potential refinancing including external advisors as necessary
- C. Be mindful of opportunities that may be available through refinancing

#### 3.7.1 Background

Changed market conditions and the development of a project can lead to a situation where more favourable financing terms become available (e.g. interest rates become lower). This can be due to improvements in the market itself (e.g. a financial crisis recedes), or changes in the PPP project (for example, construction has completed and the project has established a pattern of successful operations). In these situations, more favourable financing terms may result in lower debt service payments and higher profits for the Project Company. The Project Company will typically seek to take advantage of this. Where refinancing gains are agreed to be shared with the Procuring Authority, the Procuring Authority may be entitled to some portion of the 'financial gain'.

There are other types of refinancing that may occur, not all of which will result in a financial gain:

- Rescue refinancing: The Project Company may need to refinance to avoid insolvency if it is financially distressed. This is typically managed on the private sector side and the Procuring Authority's involvement is limited to approvals of the changes made. It may also involve the contribution of new equity financing.
- 'Mini-perm' refinancing or bridge loan refinancing: In some markets, or during a financial crisis, it is not possible to obtain long-term financing, and loans will be limited to a period much shorter than the contract duration (e.g. five or seven years).

Refinancing in this situation is both necessary and envisaged at the time of financial close and may also deliver financial gains. In some markets, bridge financing is provided at financial close that will only take the Project Company a few years into construction. At that stage, the Project Company may seek to refinance with long-term financing to finance the entire duration of the project.

There may also be circumstances where a Project Company is required to refinance due to its tenor not aligning with the period of the PPP contract and where the market conditions are less favourable meaning that finance becomes more expensive. This will create additional risks for the project.

Some PPP contracts allow for the Procuring Authority to request refinancing but the research suggests that this does not happen often in practice. However, the Procuring Authority on the InterCity Express Programme project in the UK did request a refinancing and the financial gains available were shared between the parties.

#### EXAMPLE

#### Benefits of refinancing

The second phase of the InterCity Express Programme project in the UK reached financial close in 2014 and the financing terms were better than those offered for the financing of the first phase in 2012. The opportunity for refinancing was identified by Her Majesty's Treasury with the Procuring Authority issuing a Refinancing Notice to request that the Project Company take advantage of the financing opportunity available. The refinancing was completed in a relatively short period of time with financial gains shared with the Procuring Authority.

***For more information, see the InterCity Express Programme Case Study.***

The following guidance outlines the key issues that should be considered when consent of the Procuring Authority is required for a Project Company refinancing, or the Procuring Authority is otherwise involved.

### 3.7.2 Guidance

#### A. When assessing a proposed refinancing, consider the interests of the Procuring Authority and broader government considerations

When a request for approval to refinance is received by the Procuring Authority, or if the Procuring Authority is considering directing the Project Company to instigate a refinancing, the main aim of the Procuring Authority should be to ensure any refinancing does not affect the financial integrity of the Project Company or the project, and to ensure the Procuring Authority will not otherwise be adversely affected.

Refinancing can involve any or a combination of the following: a change to the debt pricing; a change of the debt maturity (its tenor); a change in the amount of debt; a change in the amount of debt relative to equity (i.e. the gearing ratio); changed reserve account requirements (e.g. debt service reserve account); the release of guarantees provided by the equity investors or third parties of the Project Company; a change in the security arrangements (e.g. share charges, project asset security, etc.); a change to the repayment terms (including when capital is required to be repaid); a change in the lenders or debt providers; or a change in other finance terms (e.g. loan covenants).

There are several issues that the Procuring Authority should take into account when assessing a refinancing and how it will affect the project, including those detailed below. The review of the proposed refinancing should be undertaken to ensure that value for money is not adversely affected and taking into account the benefits of the refinancing as well as the potential detriment to the Procuring Authority and the project.

- There may be additional costs where there are hedging or swap arrangements in place. For example, where interest rate hedging or currency exchange rate hedging arrangements need to be ended as part of the refinancing. These types of costs are typically called hedging break costs or swap break costs and may affect whether a refinancing is worthwhile. There may also be hedging gains payable to the Project Company.
- Where the hedging requirements have changed, this may increase the risk in the project. For example, if the Project Company has refinanced with foreign currency debt, that debt may increase the repayment risks for the Project Company in the absence of appropriate hedging.

- Where a refinancing would result in the Project Company taking on additional debt and/or an earlier repayment of equity, it may become highly leveraged (i.e. the percentage of debt in the Project Company would be high compared to the percentage of equity). As a result, there will be a smaller 'equity buffer', making the Project Company and the project more risky and less financially robust.
- The tenor of the refinanced debt may also impact the financial integrity of the Project Company, particularly where the new tenor of debt is shorter than what is required for the project.
- Any protections around cash flow. For example, a debt service reserve account or a contingency repayment period (debt tail) may be amended, leaving the Project Company in a less financially robust position.
- The quality and integrity of lenders providing debt finance may also adversely affect the Procuring Authority's interests.
- A change in the financing arrangements may otherwise increase the contingent liabilities for the Procuring Authority in the case of termination. This needs to be calculated and taken into account when analysing a proposed refinancing.

Although the above list describes some aspects of what issues should be considered by the Procuring Authority, the project financing arrangements of a Project Company can be very complicated. When considering a refinancing, the Procuring Authority should make sure it fully assesses refinancing and engages adequate legal and financial expertise.

#### EXAMPLE

#### Use of advisors

On the Brabo I Light Rail project in Belgium, the Project Company was not able to raise long-term debt financing at financial close due to the Global Financial Crisis. Refinancing was completed in 2016, with one of the Procuring Authorities taking the lead in arranging it. A working group was set up and external financial advisors were hired and the refinancing was completed in eight months.

***For more information, see the Brabo I Light Rail Case Study.***

#### **B. Dedicate appropriate resources to assessing a potential refinancing, including external advisors as necessary**

The Procuring Authority will need to do a full assessment of the implications of a given refinancing proposal. This will include ensuring it has the necessary expertise to assess the risks of the refinancing and any potential benefits. This applies to a refinancing requested by the Project Company, as well as the potential for the Procuring Authority to request a refinancing itself.

External advisors will often be needed by the Procuring Authority to assess a refinancing, as it may not have the skills available in-house. The use of external advisors is detailed in Section 2.1 (Contract management team set-up). This will also depend on the Procuring Authority. For example, a large government department may have the expertise available from another part of the organisation or there may be a team available that sits across several projects which has experience with refinancing.

The research indicates that public sector authorities often lack refinancing expertise in-house, and external financial advisors specialised in refinancing are typically required. Issues have arisen due to the time the Procuring Authority has taken to approve refinancing initiated by the Project Company. Where the Project Company is looking to benefit from favourable market conditions, any delays in approvals from the Procuring Authority may lead to the refinancing opportunity being lost.

#### **C. Be mindful of opportunities that may be available through refinancing**

Where relevant, the Procuring Authority should also consider the potential benefits it can receive as a result of a refinancing through a relevant refinancing gain regime, if this has been provided for in the PPP contract. It is common in developed markets for the Procuring Authority to require any such financial gain be shared between the parties.

Although a refinancing has the potential to be detrimental to the Procuring Authority, it can also provide a benefit when managed correctly. For example, where additional finance is required to complete works not contemplated at financial close.

**EXAMPLE****Refinancing opportunity**

On the Queen Alia International Airport Expansion project in Jordan, the refinancing for an accelerated expansion of the airport due to higher than forecast traffic volumes was arranged through both additional debt raising by the Project Company and voluntary contribution from the Procuring Authority. Parliament approved such contribution as it was considered to be value for money to bring forward the planned expansion by three to four years and make a voluntary contribution from the scheduled investment payments.

***For more information, see the Queen Alia International Airport Expansion Case Study.***

to share in a refinancing gain and when it will not be entitled. Contract managers should be aware of when refinancing gains can be shared to ensure they are making the most of the Procuring Authority's entitlements.

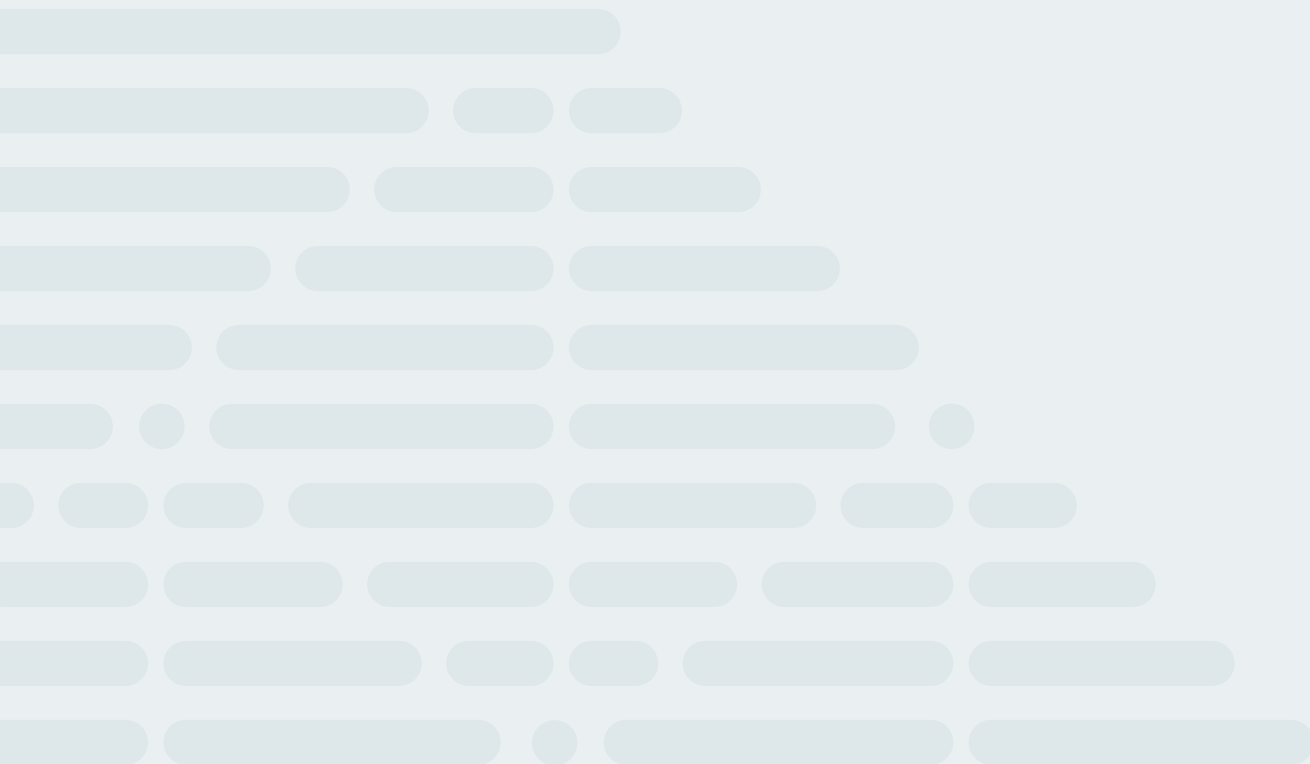
A financial gain can also be generated through a refinancing due to a change in the risk profile of the project or due to a change in market conditions.

How gains are shared between the Procuring Authority and the Project Company needs to be calculated and agreed upon, ideally agreed upon in the PPP contract. Where the PPP contract clearly states how gains are to be shared, this process will be more straightforward. However if the PPP contract does not clearly outline this calculation method then the two parties may have to reach a negotiated outcome.

The financial gain can be distributed to the Procuring Authority in a number of ways including as a lump sum payment, as a reduced unitary charge, as a combination of the two, or by some other mechanism. In a few rare cases, the financial gain is taken 'in kind' as a pre-funded scope change financed with the government's refinancing gain share. This may be difficult to do due to the difficulty in estimating the value of the scope change.

Where a refinancing gain is agreed in a PPP contract, it is also common for some refinancing gains to be excluded. For example, this can occur where a refinancing is contemplated at financial close because the Project Company knows it can get better financing terms after financial close. In these situations the Project Company will argue that these refinancing gains are being taken into account as part of its bid for the project and so should not be shared. In this context, it is important to specifically establish in the PPP contract which circumstances will entitle the Procuring Authority

# Renegotiation



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## 4 Renegotiation

As PPP contracts are long term in nature, they will be exposed to various external changes arising from political, social and economic circumstances over their duration. As such, renegotiation is likely to occur at some stage during the contract term.

Renegotiation is a significant event in a PPP project as a change to the contract can have a major impact on the success or failure of a project, can demand significant resources and time from the Procuring Authority to effect, and can lead to disputes over the life of the contract.

The essence of renegotiation centres on the allocation of risk. Appropriate allocation and management of risk is an important aspect of ongoing financial sustainability, and any changes to the PPP contract may alter the risk allocation.

Renegotiations carry the risk of being adverse to the interests of the public good. For example, parties may initiate a renegotiation because of a change in the competitive landscape that may offer an opportunity to improve profit margins or achieve other benefits..

The study found 48 instances of renegotiation in the 146 projects for which data was available, which roughly equates to one in every three projects. When the data was filtered by region and sector, it was interesting to note the significant prevalence of contract renegotiation in Latin America (58%) and in the transport sector (42%). In addition, the most common cause of renegotiation was found to be increased costs in construction or operations, while the most common outcome of a renegotiation was a change in tariffs. It should be noted that the timeframe for the study (projects that reached financial close between 2005 and 2015, inclusive) meant that almost all the projects are still in progress, and therefore may incur further renegotiations in the future. This suggests that the true prevalence of renegotiation is likely to be higher than was found in the study.

### CHAPTER STRUCTURE

This chapter provides a background to renegotiation of PPP contracts in Section 4.1 (Background) and provides guidance on successfully managing renegotiation. The key elements of successful renegotiation are summarised below and detailed in Section 4.2 (Guidance).

- A. Introduce policies to limit frequent renegotiations
- B. While limiting frequent renegotiations, also be mindful of opportunities that may be available through renegotiation
- C. Fully assess the appropriateness of a renegotiation
- D. Consider termination as an alternative to renegotiation
- E. Ensure adequate resourcing is employed during a renegotiation
- F. Consider the transparency of the renegotiation process and ensure good record keeping practices
- G. Ensure compliance with the regulatory framework in relation to a renegotiation
- H. Consider the associated private partners' roles (including the lenders' role) in a renegotiation
- I. Be aware of the broader implications of a renegotiation, including assessing opportunities for procurement of better PPP projects

Section 4.3 (Summary data analysis) provides a summary of the data analysis with respect to renegotiation of PPP contracts.



## 4.1 Background

### Definition of renegotiation

A renegotiation of a PPP contract involves a change to the original contract terms and conditions. This is distinct from an adjustment (such as a minor scope change), which is contemplated in the PPP contract.

The scale of the change determines whether a renegotiation of the contract will be required. Large changes with major cost implications and the potential to change the agreed risk profile often require a renegotiation. For example, a renegotiation may be required where major changes to the scope of the project are involved.

PPP contracts typically include several mechanisms, such as scope change provisions for minor scope changes and claims procedures, to manage circumstances that were not fully understood or envisaged at financial close, without the need for a renegotiation. Minor changes will generally fall under the scope change or variation provisions, rebalancing provisions or other similar provisions in the PPP contract. Claims and scope changes are detailed in Section 3.5 (Claims).

Simple correction of errors or clarification of contract drafting can also typically be dealt with under existing provisions in the PPP contract and do not require renegotiation.

Some jurisdictions have a concept of economic rebalancing, which allows changes to be made that in other jurisdictions would require a renegotiation. This concept is described in more detail below under the heading 'Economic rebalancing'.

### Typical processes

The approach to renegotiation depends on the regulatory framework of each jurisdiction, which can prescribe how renegotiation can or should be carried out. It may also depend on the process agreed in the PPP contract.

PPP contracts can set out a renegotiation clause which will typically specify under what conditions the renegotiation can be initiated and what the process will be. For a renegotiation initiated by the Project Company, this process might include a requirement for the Project Company to submit a request along with an explanatory memorandum as to why it is requesting a renegotiation. The explanatory memorandum should set out the detailed background to the renegotiation request, together with all relevant legal and/or contractual justifications that validate the need for the

renegotiation. The process may include time limits to mitigate the risk of delay in effectively implementing the renegotiation.

However, it should be noted that parties can also renegotiate at any stage without an explicit procedure, as long as the amendment to the PPP contract has the agreement of all relevant parties.

It is common in civil law jurisdictions for the Procuring Authority to have the power to make unilateral changes to the PPP contract. This unilateral power will typically also attach the condition that the Procuring Authority will fairly compensate the Project Company for making such unilateral amendments. For this reason, the approach in these jurisdictions will not differ greatly for renegotiations, as the parties should still negotiate the amendments and the compensation payable.

### Economic rebalancing

Economic rebalancing refers to the practice of modifying the financial conditions (i.e. 'economic equilibrium') that were agreed as part of the original contract, with the intention of preserving or restoring the original economic equilibrium of the PPP contract. This can occur after a risk borne by either party has materialised and has been determined to have economic consequences for a party. For example, a force majeure event, a scope change, change in macro-economic conditions, change in law, or a major change to demand.

Rebalancing principles and provisions are specific to particular civil law jurisdictions (e.g. several countries in Latin America) and differ from the provisions of a typical common law PPP contract. In common law jurisdictions, events such as scope changes and changes in law are typically managed under specific scope change provisions and claims procedures, which are detailed in Section 3.5 (Claims). Rebalancing regimes, when compared to comparable provisions in common law jurisdictions, are more fluid mechanisms to deal with a variety of issues.

Rebalancing may also be available after an opportunity has materialised in favour of the Procuring Authority. For example, if the construction of an adjoining bypass increases demand and therefore toll revenue on a PPP road project, the PPP contract could be rebalanced in favour of the Procuring Authority with reduced tariffs or a reduction to the contract period.

Rebalancing may also be required because of a contract renegotiation. For example, if the Procuring Authority requested a significant increase to the scope of the project and this was agreed to by the Project Company through a renegotiation. Rebalancing may then be needed to restore the economic equilibrium of the PPP contract.

### A perspective from Germany

In Germany, it is not common for a Procuring Authority to be successful in demanding a rebalancing, unless this option – and a procedure for achieving it – are already set out in the contract.

In general, rebalancing can be implemented through a broad range of mechanisms. For example, Project Company compensation, change in tariff rates, change in contract duration or a change in future investments payable by the Project Company. A combination of these and other economic/financial measures may also be available.

A typical process involves the Procuring Authority calculating the economic and financial rebalancing it considers is required and presenting it to the Project Company with a proposed approach to effect it. If the Project Company is not satisfied with the proposed rebalancing, it has a right of appeal against the Procuring Authority through administrative rights or it can trigger arbitration or court proceedings to receive a final determination.

For the purpose of the data analysis explored in this chapter, the study results do not differentiate between renegotiation and rebalancing.

## 4.2 Guidance

The following guidance outlines the key issues that should be considered when approaching renegotiation of a PPP contract.

### A. Introduce policies to limit frequent renegotiations

If the private partner perceives the Procuring Authority as being excessively open to renegotiation, this may encourage opportunistic private sector bidders to make more aggressive (and potentially unrealistic) bids to secure a project, hoping to then renegotiate the PPP contract shortly after financial close in the absence of competition. As a result, the private partner may attempt to transfer risks back to the Procuring Authority that the Procuring Authority believed had been contractually allocated to the private partner. This may reward private sector partners who may not be efficient, but who are opportunistic negotiators.

The research suggests that parties sometimes seek opportunistic gains (either financial or political) through renegotiation, although this will always be a subjective interpretation and there will not typically be strong evidence to demonstrate that the drivers for renegotiation were opportunistic. It is therefore difficult to share detailed experiences, but the Procuring Authority should be alert to the possibility of opportunistic renegotiations. In a similar light, opportunistic renegotiations initiated by a Procuring Authority will also be detrimental in terms of the relationship with the Project Company but also the long-term private sector interest in a country or region.

### **The key issue associated with renegotiation in PPPs is that it can have the effect of retrospectively distorting the competitive tender process.**

Where a contract is renegotiated and the agreed risk allocation changes after the preferred bidder has been selected, it is no longer obvious that the Project Company that was awarded the project offers the most cost-effective solution. This is because the originally tendered project and the renegotiated project are in essence two different projects.

Most significantly, a project's value for money becomes less clear in the absence of competition. Other implications of renegotiation that should be considered by the contract management team include the following:

- Renegotiations have the potential to **reduce the transparency** that existed during competitive bidding, which may also be controversial in terms of public perception
- The **efficiency of the PPP model may be jeopardised** by renegotiation: Renegotiations have the potential to reduce the overall economic benefits of PPP arrangements by changing the tendered and agreed risk allocation
- If renegotiations are frequent in a country or region, the **credibility of the process for utilising PPP transactions is called into question**
- From a legal perspective, **competitors might also challenge renegotiated changes** on the basis of competition or procurement laws, which can also have implications for future tender processes
- A renegotiation may **highlight broader issues and set a precedent for other similar projects** (e.g. if a demand risk allocation is changed to the advantage of a Project Company, other Project Companies in similar projects might demand the same changes)

A Procuring Authority will face a dilemma when the Project Company is facing financial difficulties due to the materialisation of a risk that was allocated to the Project Company under the PPP contract. On the one hand, the Procuring Authority needs to ensure it is retaining the value for money forecast at financial close. On the other hand, it has a sometimes-conflicting interest to ensure that the underlying public service continues to be provided. The potential solutions to this dilemma are detailed below under guidance 'C. Fully assess the appropriateness of a renegotiation'.

### **B. While limiting frequent renegotiations, also be mindful of opportunities that may be available through renegotiation**

As described in the European PPP Expertise Centre's *Managing PPPs during their contract life*<sup>1</sup>, the Procuring Authority should carry out periodic PPP contract reviews. These reviews should aim to identify any changes required by a changing environment (e.g. a change in the Procuring Authority's requirements) and to assess the Project Company's overall performance under the PPP contract. For example, this may involve a full technical, financial and legal review taking place

<sup>1</sup> Available at <http://www.eib.org/infocentre/publications/all/epcc-managing-ppps-during-their-contract-life.htm>.

every five years, which may lead to a renegotiation being initiated by the Procuring Authority.

Several case studies highlighted the types of opportunities that may arise over the contract period, including increases in demand, availability of new technology and the availability of better financing rates.

#### **EXAMPLE**

### **Opportunities to be assessed**

The original plan for expanding the Queen Alia International Airport Expansion project in Jordan had been to execute the project in two stages. Once it became clear that the first stage of expansion would not be sufficient to account for passenger growth, both parties agreed to change the design to allow the expanded terminal to be able to accommodate higher volumes than originally estimated. The incentives for both parties were in alignment, and the changes had a positive impact on the project.

*For more information, see the Queen Alia International Airport Expansion Case Study.*

### **C. Fully assess the appropriateness of a renegotiation**

For any renegotiation, the starting point should be that the cost implications for the Procuring Authority of renegotiating are less than the financial outcome of doing nothing.

However, the assessment of a proposed renegotiation should be as comprehensive as possible, and should not be limited to the direct consequences of the change. For complex renegotiations, it may be in the interests of the Procuring Authority to carry out a forward-looking audit as well as a review of the relevant contracts. This will help to avoid any unforeseen effects on other contractual provisions that could adversely affect the Procuring Authority's interests.

The Procuring Authority should distinguish between the realisation of a risk that was allocated to the Project Company, and a genuine change in circumstance that was not contemplated at commercial close. Ideally, the former should not trigger the need for a renegotiation. As a general principle, a renegotiation should not be used to address the following:

- Any event that was foreseeable at financial close
- Any event that would affect the Project Company in its ordinary course of business (e.g. a general change of law)
- Materialisation of a risk allocated to the Project Company or invalid assumptions made in its pricing or the scope of work required in relation to those risks
- Any distress arising directly or indirectly from the performance, action or inaction of the Project Company
- Any failure by the Project Company to secure financing for the project

**EXAMPLE****European Union environmental requirements**

The parties to the Segarra Garrigues Irrigation System project in Spain were forced to change the scope and design after the European Court of Justice ruled that it was not meeting its obligations to protect birdlife. These changes were renegotiated in 2013 and 2015 and the changes will mean that less water is available for irrigation once the scheme is fully operational, so a further renegotiation is likely to take place in the future.

*For more details see the Segarra Garrigues Irrigation System Case Study.*

In practice, it is not uncommon for the events described above to lead to renegotiation, as is detailed in Section 4.3 (Summary data analysis), where causes such as increased construction costs are shown to be common. However, this does not alter the fact that value for money will likely be diminished where these risks – which were priced into the original bid – are not borne by the Project Company.

This type of circumstance may leave the Procuring Authority in a difficult situation when assessing whether to renegotiate the contract. On the one hand, the Procuring Authority needs to ensure that public sector interests are protected, and the Procuring Authority is retaining the value for money forecast at financial close. On the other hand, it has a sometimes-conflicting interest to ensure that the underlying public services continue to be provided.

The Procuring Authority should weigh up not only the risks of agreeing a worse position for itself, but also of agreeing a better position if it is at the expense of the Project Company. It may be a short-term victory if the Procuring Authority ‘wins’ the renegotiation but finds the Project Company becomes insolvent and the project is back on the Procuring Authority’s books to manage.

This decision also requires careful consideration of the costs of alternatives, which should be informed by public sector benchmarking and assessment of market conditions. Benchmarking with respect to scope changes is detailed in Section 3.5 (Claims).

The success of the project may be the main goal of the Procuring Authority and so, if the Project Company proves that the feasibility of the project depends on the revision of the contract, a renegotiation will be more likely to be considered as appropriate. In some examples, changes appear to have been accepted by the Procuring Authority to ensure the project remains viable. However, where changes are accepted to ensure the viability of a project, this might send the wrong signal into the market, in particular, if it changes the risk allocation.

The outcomes of renegotiations in the collected data suggest that several projects were facing financial challenges and that the outcomes were agreed to preserve the public interest in the project.

**D. Consider termination as an alternative to renegotiation**

One option which is perhaps dismissed too lightly is termination, either because the project will fail automatically through insolvency if not renegotiated, or because the Procuring Authority has a right to terminate.

Termination may be seen as a taboo subject, in particular due to the political fallout of such a step and the perception that the Procuring Authority has failed to deliver the outcome it promised, even though, in such a situation, it may be that the contract has done exactly what was intended. In most default termination scenarios, it can be expected that the private sector will have taken a significant financial hit – loss of equity and likely a loss of a material part of the senior debt.

A Procuring Authority should not accept a less favourable outcome than simply terminating the PPP contract and making the termination payment. Termination of the PPP contract is detailed in Chapter 7 (Default and termination).

**EXAMPLE****Project Company difficulties in obtaining finance**

The Project Company in one of the case studies in Brazil is facing financial difficulties with lower than expected toll revenue, and challenges in raising the required debt finance. The Procuring Authority is considering extending the period in which investment can be completed, as well as whether to take an alternative approach:

- Terminate the PPP contract and retender the project
- Replace the equity investors with new equity investors capable of raising the required debt finance
- Require the existing equity investors to commit additional equity

***For more information, see the Brazil Toll Road Case Study.***

**E. Ensure adequate resourcing is employed during a renegotiation**

When faced with a renegotiation, the Procuring Authority should ensure that it has adequate capacity and information to carry out the negotiations. This requires a good understanding of the contractual arrangements, and adequate reporting and measurement systems for tracking the progress of the project.

PPP contracts are complex arrangements and external advisors will typically be needed to make the correct decisions. Engaging external advisors is detailed in Chapter 2 (Contract management team set-up and training). Resourcing and preparation for the renegotiation needs to be on a similar level as the original negotiations in the tender process. The Project Company will often employ specialists, bringing experience from a wide range of projects for these purposes, and the Procuring Authority should aim to match that level of experience.

The Procuring Authority's analysis should involve a prudent combination of advice: commercial, financial, legal and technical. Each stakeholder or advisor may bring a different perspective to the proposed renegotiation and the Procuring Authority's position (and confidence to negotiate)

will typically improve dramatically when a combined analysis of this nature is carried out.

A key consideration is the potential impact that a renegotiation will have on the risk allocation agreed between the parties at financial close. The allocation of project risks between parties is normally carefully developed, negotiated and agreed in the PPP contract and the aim should be for this allocation to be maintained through any renegotiation, though it may have to be adjusted if there are significant changes. For guidance on typical risk allocation arrangements between the Procuring Authority and the Project Company, see the GI Hub's PPP Risk Allocation Tool.<sup>2</sup>

This decision also requires a careful cost assessment of the proposed renegotiated solution, which should be informed by public sector benchmarking and assessment of market conditions. Benchmarking with respect to scope changes is detailed in Section 3.5 (Claims). The termination payment can also act as the reference price in a renegotiation.

Renegotiations in PPP contracts that are poorly carried out can be very costly for the Procuring Authority (with adverse impacts on taxpayers), for end users of the services, for other government institutions, or all the above, as they have the potential to drastically change what was agreed to at financial close.

In some jurisdictions, advisors are available at the bidding stage to assist with negotiation (e.g. through a project preparation facility). However, such funds for advisors are typically no longer available when circumstances arise that require a renegotiation. This can cause issues particularly where the Project Company is well resourced for the renegotiation. This is an area where development banks can take a role in particular markets.

**F. Consider the transparency of the renegotiation process and ensure good record keeping practices**

Renegotiation can increase the chance of a dispute or challenge. This is particularly the case in developing markets with weaker institutional frameworks that lack the following features:

- A defined and transparent process and framework for renegotiation
- Transparency of the renegotiation process

<sup>2</sup> Available at <http://ppp-risk.gihub.org>.

- Established guidelines for levels of compensation
- A transparent framework for conflict resolution in the renegotiation process

The final decision on a renegotiation should be based on full disclosure of long-term costs, risks and potential benefits. The case for a renegotiation should be made explicit and recorded so that the decisions are made in a rational and defensible manner. Evidence should demonstrate that project distress is material and likely to result in default under the PPP contract or other serious adverse implications should it continue. The evidence should demonstrate that the distress is likely to cause adverse outcomes for the public sector and/or users of the service. Information management is detailed in Section 3.4 (Information management).

#### **G. Ensure compliance with the regulatory framework in relation to a renegotiation**

As renegotiation can have significant financial (direct and contingent) implications for the Procuring Authority, some form of fiscal oversight similar to the one used in the original PPP contract approval mechanism will typically be required. Regulatory frameworks typically separate responsibility for the approval of amendments from the Procuring Authority personnel who manage the renegotiation.

Oversight measures include procurement laws (to address instances where the risk allocation changes significantly and other bidders could have been more successful under the new structure) and state aid laws (to address instances where an unjustified benefit is granted to the Project Company).

Some specific examples of oversight include relevant thresholds on the project capital value, such as regulation in Chile, which prescribes a limit of 20% of approved capital value for renegotiations before Ministry of Finance approval is required; and a similar threshold in South Africa, which requires any 'material' amendment to be approved by its National Treasury. The applicable law may also distinguish between renegotiations and scope changes, and provide different thresholds.

There may also be merit in the establishment of independent technical panels capable of assessing the merits of a renegotiation. An independent panel demonstrates government commitment to a structured process that is likely to improve market certainty and reduce opportunistic calls for

renegotiation. For example, in the Philippines an Investment Coordination Committee evaluates the monetary implications of major projects.

#### **H. Consider the associated private partners' roles (including the lenders' role) in a renegotiation**

Though the Project Company will typically be the key party involved in renegotiating with the Procuring Authority, other private partners will also have interests and likely veto rights with respect to material PPP contract amendments. Such parties include lenders and key contractors in certain circumstances. The contractual review to assess a renegotiation should therefore include a review of any relevant direct deeds the Procuring Authority has entered into with the lenders and/or key contractors (such as the construction contractor). For example, where the Project Company is required to incur additional capital expenditure, that expenditure will need to be financed.

#### **I. Be aware of the broader implications of a renegotiation, including assessing opportunities for procurement of better PPP projects**

It is prudent to assess whether a renegotiation on any particular project may be symptomatic of a sector-wide or industry-wide issue. If any systemic factors can be identified, then a more robust (policy) change should be considered for future PPPs.

It is typical that more complex provisions, particularly in respect of remuneration and compensation, bear a greater likelihood of being the subject of renegotiations. Therefore, it is important that details of these provisions are shared between similarly structured projects and are incorporated into the preparation of new projects.

Similarly, if the risk allocation agreed between the parties at financial close is adjusted as part of a renegotiation, it should be assessed whether that adjustment should be incorporated into the preparation of new projects. For guidance on typical risk allocation arrangements between the Procuring Authority and the Project Company, see the GI Hub's PPP Risk Allocation Tool.<sup>3</sup>

<sup>3</sup> Available at <http://ppp-risk.gihub.org>.

**EXAMPLE****Reviews in India and Brazil**

PPPs in India were suffering from several systemic challenges, including delays in land acquisition, difficulties in the shifting of utilities and right of way issues, often culminating in disputes. On the private sector side, inadequate due diligence and aggressive bidding led to project failures. As a result, the Indian Finance Ministry appointed a committee to review PPPs with a focus on the assessment of challenges associated with contract renegotiations, the adequacy of risk allocation, contract drafting and institutional capacity. Several recommendations were made for improvement.

Lessons from previous PPP contracts have informed new contracts in the Brazilian electricity sector. The Procuring Authority (the national energy regulator, ANEEL) observed that difficulties in obtaining environmental permits often led to extensive delays and occasional project terminations. Consequently, ANEEL altered the bidding process to introduce a step to assess the feasibility of a proposed project from an environmental perspective, thus reducing the risk of environmental permitting causing delays.

**4.3 Summary data analysis**

This section provides a summary of the renegotiation data analysis. The full data analysis is available in Appendix A (Data analysis).

The study found 48 examples of renegotiation, out of the 146 projects for which data was available, which is an incidence of 33%. It should be noted that the prevalence of renegotiation results is heavily influenced by the timeframe that was selected for the research (i.e. projects that reached financial close between 2005 and 2015, inclusive). While all projects in the sample have been running for at least two years, this reduces for each subsequent year, and only 50 projects have been in progress for more than eight years. The influence of this is that, while only 33% of projects in the entire sample experienced renegotiation, the data indicates that 45% of PPPs have experienced renegotiation by their fourth year after financial close. This suggests that the true prevalence of renegotiation is higher than was found in the study, due to the timescales involved.

There are several other interesting findings from the data collection on renegotiations that relate to prevalence of renegotiations in particular regions, particular sectors and at particular times after financial close.

As demonstrated in Appendix A (Data analysis), the transport sector has the highest incidence of renegotiations overall, with 42% of transport projects renegotiated compared to 33% of projects overall.

As also demonstrated in Appendix B (Data Analysis), the average period of time after financial close for renegotiation to occur was 3.6 years. Where the renegotiation occurred during the construction phase, it occurred on average 2.5 years after financial close. Where it occurred during the operations phase, it was on average 5.0 years after financial close. For the reasons noted above in relation to the timescales involved, this average period may change for projects as they reach full contract duration. Large numbers of renegotiations took place between two and four years after financial close, with 7% of the 146 projects studied being renegotiated in the third year after financial close.

Table 1 sets out the prevalence of renegotiations in different regions based on data collected on all projects at all stages after financial close. It should be noted that, for the regions with less data available, only a small number of projects

were investigated. The percentage prevalence for the regional information is therefore not statistically significant.

**Table 1: Prevalence of renegotiation by region**

Region	Projects with data	Renegotiation events	Percentage
Australia and New Zealand	4	0	0%
East Asia	17	2	12%
Europe	43	12	28%
Latin America and the Caribbean*	43	25	58%
Middle East and North Africa	8	1	13%
North America	5	2	40%
South Asia	14	5	36%
South East Asia	8	1	13%
Sub-Saharan Africa	4	0	0%
<b>Total</b>	<b>146</b>	<b>48</b>	<b>33%</b>

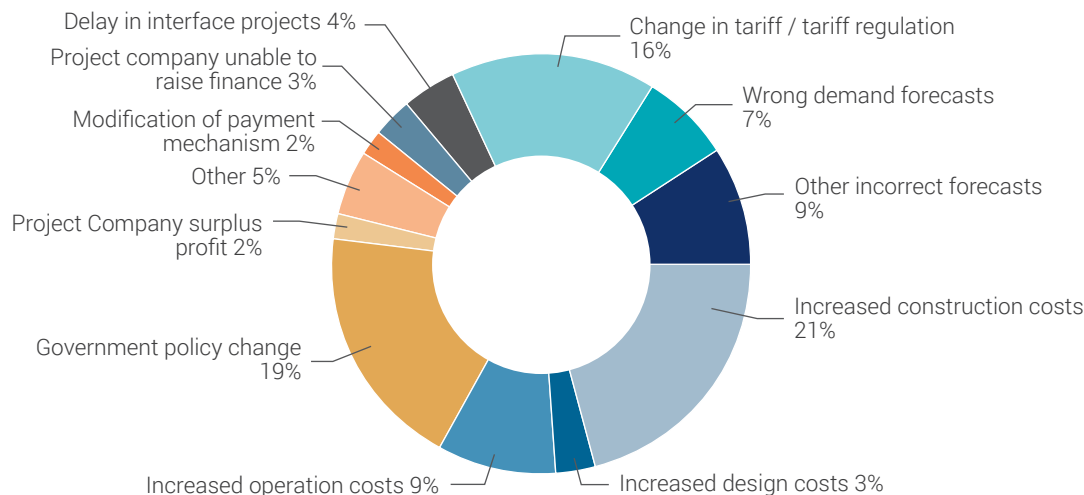
\*Note: It is understood that the prevalence of renegotiation in Latin America is due in part to the Brazilian government unilaterally changing electricity tariffs in 2012, which led to many renegotiations on energy projects and hence has skewed these results. Affected Brazilian power projects make up 11% of the projects in Latin America, and 3% of the total sample data.

Typical causes of renegotiation and typical outcomes, including a detailed analysis of some of those causes and outcomes are detailed below.

**Causes of renegotiation**

Figure 1 depicts the causes of renegotiations recorded on the 48 PPPs globally where renegotiation occurred. This section analyses the causes of renegotiation, including commentary on which party is most likely to commence renegotiation for specific issues.

**Figure 1: Causes of renegotiation, based on 48 projects that experienced renegotiation**





The causes of renegotiation in the study were varied, with the most common cause being increased costs. In 17 projects the renegotiation was due to increased costs (12 during design and construction and five during the operations phase), while another nine were due to a change in regulation or policy change. A further nine were due to modification of the payment mechanisms and/or a change in tariff. Five were due to incorrect demand forecasts, including in the Queen Alia International Airport Expansion Case Study, where the actual volumes were higher than predicted. Another common cause was delays to interface projects, such as a high speed rail link which relied on the construction of an adjoining high speed rail project, which was delayed.

Renegotiation in the energy sector was mostly caused by a change in tariff, while the causes in the transport sector covered all of those described above.

The party initiating the renegotiation was split evenly between the Project Company and the Procuring Authority. This was the case both overall, and within Europe and Latin America (the two regions with significant numbers of renegotiations).

The study confirmed that the Project Company often initiates a renegotiation when it is facing financial difficulty or potential insolvency. The main causes of this financial stress were increased construction costs (though increased design or operating costs also played a role) and incorrect demand forecasts.

Factors that may affect costs and revenues and lead to renegotiation include aggressive bidding, and a lack of preparatory studies which increases construction risk. They may also be related to weak contract monitoring, or the Project Company's perceived leverage to influence the Procuring Authority to grant them additional benefits through a renegotiation.

The study showed that the main causes of a Procuring Authority initiating a renegotiation include a change in tariff or payment mechanism, followed by government policy changes and changes in scope. Internal drivers from the government include elections, where the new administration changes the underlying policies around PPPs, or changes in user demands over the level of service or the price of the service leading to public unrest. A road project in Latin America (not covered in detail in the study) experienced the latter situation, where public

objection of the toll rates meant the Procuring Authority had to renegotiate the PPP contract to adjust for a lower available toll rate.

Renegotiation can be brought about by external drivers such as significant changes in economic circumstances, including macro-economic conditions beyond the control of the parties, or unforeseen natural events or disasters. Renegotiation instigated by the Procuring Authority for several highway PPPs took place in the Republic of Korea (also not covered in detail in the study) to share the benefits of refinancing.

Both parties are likely to resort to renegotiation in the case of poorly written contracts and ambiguous risk allocation.

Although both parties can have reasonable and legitimate reasons to initiate a renegotiation due to any of these reasons, they also sometimes seek an opportunistic gain through renegotiation. This issue is detailed in Section 4.3 (Guidance).

#### EXAMPLE

#### Highways in India

The research indicates a high risk of renegotiation on highway PPPs in India. This is often adopted as a solution to disputes about increased construction costs due to a failure to secure right of way and land acquisition on time, or due to utilities diversion.

#### Outcomes of renegotiation

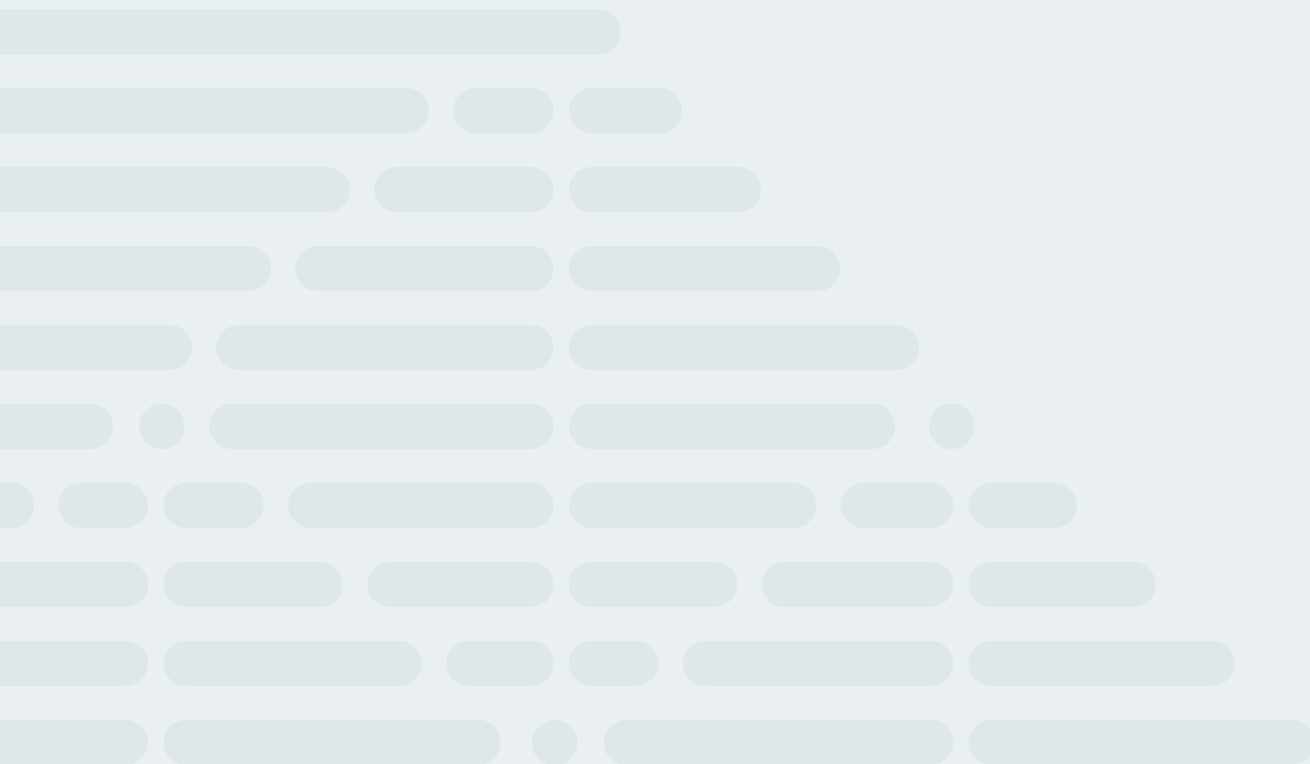
The most common outcome of renegotiation in the study was a change in tariffs. There were 13 examples of increased tariffs, mainly across projects in Europe and Latin America. There were another seven examples of reduced tariffs. The outcome of a renegotiation in Portugal resulted in the payment mechanism being changed entirely.

Another common result of renegotiation was a change in construction scope or contract duration. A change in scope because of renegotiation occurred 12 times in the construction phase out of the 146 PPPs for which the relevant data was available globally, but only once in the operations phase. This pattern was particularly common in Latin America, where these results occurred 13 times in total of the 43 PPPs for which the relevant data was available.

The construction scope changes ranged from reductions in scope on the Baixo Highway project in Portugal, to changes in tunnelling works due to ground conditions on two projects in Brazil and the Netherlands, and a large increase in investment in the Queen Alia International Airport Expansion Case Study in Jordan.

Several renegotiations took place in relation to the Sao Paulo Metro Line 4 project in Brazil to address construction delays. The construction phase was extended as a result; however, after ongoing issues, the project was eventually terminated and retendered.

# Disputes



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## 5 Disputes

Given the long term nature and complexity of PPP projects, it is not uncommon for there to be some form of disagreement or dispute during the contract management period. Disputes have the potential to damage the relationship between the Project Company and the Procuring Authority. In addition, while they are being resolved there is a risk that the service levels will be affected. The most important goal of any party involved in dispute resolution is to make decisions that will ensure the project moves forward in a viable and sustainable manner while maintaining value for money.

The Procuring Authority and the Project Company may have differing opinions on a range of issues where they have conflicting interests. In this chapter reference to a disagreement is to a disagreement which is not the subject of a formal dispute resolution mechanism. Reference to a dispute is reference to a disagreement where formal dispute resolution mechanisms are implemented. Typical dispute resolution mechanisms are detailed in Section 5.1 (Background).

The Procuring Authority should focus on avoiding disagreements turning into disputes where possible. There are, however, a variety of reasons why disputes arise and they will not always be avoidable. When disputes do arise the focus will need to shift to managing the disputes appropriately to reach a conclusion quickly and in a cost-effective manner while also maintaining a strong relationship between the contractual parties.

### CHAPTER STRUCTURE

This chapter provides a background to disagreements and disputes in PPP contracts in Section 5.1 (Background) and provides guidance on managing disagreements and disputes. The key elements of successfully managing disagreements and disputes are summarised below and detailed in Section 5.2 (Guidance).

- A. Understand the rights and obligations of the Procuring Authority and use contractual provisions to protect the rights of the Procuring Authority rather than as punitive measures
- B. Monitor the performance of the Project Company to be aware of potential issues and to mitigate the risk of disputes
- C. Be receptive to claims and settle them early, where it is appropriate to do so
- D. Treat disagreements and disputes objectively. Do not allow a poor relationship with the Project Company to affect the approach taken to a dispute and do not let the existence of a dispute affect an otherwise positive relationship
- E. Clarify ambiguous and unclear contract drafting before it leads to a dispute
- F. Ensure settlement agreements are prepared with appropriate legal input to ensure the dispute or disagreement is unambiguously resolved
- G. Consider the full costs of escalating a dispute and the chosen dispute resolution mechanism

### Negotiation

- H. Actively seek out negotiated outcomes to disagreements and disputes, as such outcomes have the potential to be significantly more efficient
- I. Appropriately prepare for and assemble adequate resources before entering into negotiation
- J. Consider associated private partners (including the construction contractor) in the resolution of disagreements and disputes related to them

*Continued on next page...*

**Mediation**

- K. Consider mediation where a more structured approach to negotiation is required
- L. Appoint the right mediator for both parties

**Dispute Resolution Boards**

- M. Utilise Dispute Resolution Boards where available
- N. Set up the Dispute Resolution Board before a dispute arises, but also consider the changing needs of the Dispute Resolution Board for the project
- O. Appoint the right Dispute Resolution Board for both parties

**Expert determination**

- P. Where available consider expert determination for disputes that are of a technical nature
- Q. Appoint the right expert for expert determination

**Formal court proceedings or arbitration**

- R. Consider the full implications of moving a dispute to court or arbitration
- S. Choose the right arbitrator(s)
- T. Prepare to provide detailed evidence when moving a dispute to court or arbitration

Section 5.3 (Summary data analysis) provides a summary of the data analysis with respect to disputes.

**5.1 Background**

Disputes within a PPP project emerge for many reasons. There are often deeper underlying reasons for why disagreements arise in the first place and why they can escalate into a dispute. Some of these relate to the inherent complexities associated with PPPs:

- PPP contracts are long-term and unexpected circumstances are likely to arise at times
- PPP projects tend to be complex in their scope with multiple stakeholders involved
- Contract documents are complex and subject to interpretation (particularly given multiple interfaces between different parties and potential contradictions between a large number of different but interrelated project documents)

Other underlying reasons for why disagreements arise in PPPs are detailed throughout this chapter. These include a lack of understanding of the PPP contract and/or the performance monitoring requirements of a PPP; poor relationship management; ambiguous contract drafting; and weak underlying project economics.

**Dispute resolution mechanisms**

Many PPP contracts contain pre-agreed dispute resolution mechanisms for the resolution of any disputes that may arise out of the PPP contract. Such mechanisms are aimed at encouraging a less formal resolution of disputes at a relatively early stage before relationships deteriorate and before a significant amount of time and cost is spent in formal court proceedings or arbitration.

Typical dispute resolution mechanisms can include informal meetings of senior executives, mediation, the use of a panel of senior representatives, external dispute resolution boards and finally court proceedings or arbitration. In general terms, parties should seek to address any disputes starting with the least formal mechanism and then stepping up through each level to the final, most formal stage. For example, a disagreement not resolved by a meeting of senior executives, might then proceed to mediation and then finally to court or arbitration.

Typical dispute resolution mechanisms also include time limits. Time limits incentivise the parties to progress disputes and help reduce the risk of wasting time and costs if disputes drag out. For example, a time limit might be a response deadline by which parties are required to respond to a notification of an escalation of dispute. Time

limits also include the time period for which a certain dispute resolution mechanism must run before it can be escalated to the next level. It is important that the Procuring Authority follows these timeframes or agrees specific timeframes with the Project Company in cases where more subjective language such as ‘within a reasonable period’ is used in the PPP contract.

The parties should agree that they are free to seek urgent (including injunctive) relief through court proceedings or arbitration without having to go through the full dispute resolution mechanism if either party is dissatisfied with the outcome.

The relevant dispute resolution mechanisms available will also depend on what is permitted under the applicable laws. For example, a local law may require that all disputes relating to a PPP contract need to be referred to the local courts and will not permit arbitration.

The majority of projects investigated in the study had defined dispute resolution mechanisms (78 projects out of 115 for which data was available, i.e. 68%). The 2017 version of the World Bank’s Guidance on PPP Contractual Provisions<sup>1</sup> provides further helpful commentary and example wording for typical dispute resolution mechanisms.

## 5.2 Guidance

The following guidance outlines the key issues that should be considered when approaching a dispute in relation to a PPP contract using some select common dispute resolution mechanisms.

### **A. Understand the rights and obligations of the Procuring Authority and use contractual provisions to protect the rights of the Procuring Authority rather than as punitive measures**

Disputes can be created by issues associated with complex contractual terms including the agreed risk allocation between the parties, claims for compensation or additional time, application of payment deductions, Procuring Authority obligations and other procedures and defined time requirements. These issues can be exaggerated where the parties do not have a strong fundamental understanding of PPPs and the specific terms of the relevant PPP contract. Having a strong fundamental understanding of the agreement between the parties is essential.

The Procuring Authority should be aware of the legal frameworks that govern the relationship between it and the Project Company. There may be legal principles in both civil law and common law jurisdictions that are relevant to what is otherwise agreed between the parties in the PPP contract. A specific example of this is the obligations of a regulator acting as a Procuring Authority. This has been a difficult issue in the energy sector where the level of discretion granted to the regulator in the setting of tariffs has caused issues to Project Companies. The Procuring Authority should be aware of all its obligations under the PPP contract and under the applicable laws.

Strict and unfair enforcement of contractual provisions can also lead to disputes. For example, a strict reading of PPP contracts as they relate to claims and payment deductions. A claim can refer to a claim for compensation or additional time. Management of claims is detailed in Section 3.5 (Claims). A Procuring Authority will retain some risk under a PPP contract. The Procuring Authority may create larger issues for a project if it draws out and fails to manage appropriately any claim with respect to those risks.

Payment mechanisms and deductions are typically linked to performance and agreed during the procurement phase. Payment deductions should be applied as was agreed in the PPP contract. Performance monitoring and the application of

<sup>1</sup> Guidance on PPP Contractual Provisions, 2017 Edition. Available at <http://ppp.worldbank.org/public-private-partnership/library/guidance-on-ppp-contractual-provisions-2017-edition>

payment deductions are detailed in Section 3.2 (Performance monitoring).

The Procuring Authority should use payment mechanisms and deductions to incentivise the Project Company to perform in an appropriate manner. An issue can arise if there is an unnecessarily strict enforcement of payment deductions in an inconsistent or unfair manner. For example, the Procuring Authority may be tempted to strictly apply a payment deduction against the Project Company with an unrelated goal in mind, perhaps to create leverage to resolve a wider dispute.

As well as being caused by the action of the Project Company, a project can also be negatively affected by the actions of a Procuring Authority. A Procuring Authority managing its budget deficits may be incentivised to apply payment deductions in a very strict manner. For example, this subject arose in interviews in the UK where local authorities had had their budgets cut and were perceived by the private sector to be under pressure to interpret all obligations and performance standards very strictly.

In some jurisdictions this behaviour may fall foul of general legal obligations to act in good faith. In addition, such behaviour risks damaging the relationship between the parties, and increasing the costs of disputes, which will have a harmful effect on the project in the longer term.

The Procuring Authority may decide that certain procedures are unworkable and that it will formally waive or amend the unworkable contractual requirements and agree to a less formal and more workable process. Waiving rights under a contract should only be undertaken after receiving legal advice, to ensure an appropriate waiver is effected (i.e. that the Procuring Authority is waiving only what it is intending to waive and not waiving any other rights under the PPP contract).

### **B. Monitor the performance of the Project Company to be aware of potential issues and to mitigate the risk of disputes**

Adequate performance monitoring by the Procuring Authority is an essential aspect of managing disputes. Although significant risks and management responsibilities are typically allocated to the Project Company under a PPP contract the Procuring Authority must ensure that adequate systems are in place to track the Project Company's progress and compliance with the PPP contract. Without these systems the Procuring Authority

can encounter difficulties regarding early claims recognition; potential mitigation and management; and reduced visibility on program slippage and service quality, due to asymmetries of information.

As detailed in Section 3.2 (Performance monitoring) it is essential that the Procuring Authority establishes systems that provide adequate warning of any potential issues.

A Procuring Authority that carefully monitors the project, maintains good records of activities and runs an efficient document management system will be well-prepared for disputes as they arise. If the Procuring Authority fails to implement and manage such controls it will struggle to accurately assess the full details of any disputes that arise. This may increase the chances of dispute or add to the time and cost implications of managing any dispute. Information management is detailed in Section 3.4 (Information management).

When the underlying economics of a project are not working well, or the Project Company isn't adequately resourced, there is often an increased risk of dispute. For example, if the Project Company is struggling to make a profit it will be under more pressure to seek compensation from the Procuring Authority. The effect of this may be then that the Project Company is seeking compensation opportunistically in circumstances where it has no legitimate right to claim compensation. This will increase the likelihood of a dispute arising in the hope that an agreement or decision in favour of the Project Company will help it financially. This will also mean that the dispute is less likely to be settled amicably at an early stage.

The Procuring Authority should ensure that the Project Company is a properly functioning entity at all times, putting pressure on equity investors to allocate more resourcing to the Project Company if required. It may be difficult for the Procuring Authority to actively avoid all of these types of disputes after financial close has been reached and in these circumstances the Procuring Authority should be considering other options such as termination, detailed in Chapter 7 (Default and termination).

### **C. Be receptive to claims and settle them early where it is appropriate to do so**

There can be a misconception, particularly in less developed PPP markets, that a PPP contract involves a 'total transfer of risks' to the Project Company. This can lead to misunderstanding of the contractual claims processes. While the intention



in PPPs is to allocate significant risks to the Project Company, there will always be risks retained by the Procuring Authority, and this will have been the subject of careful negotiation between the parties. This is described in further detail in the Global Infrastructure Hub's PPP Risk Allocation Tool.<sup>2</sup>

Guidance on managing claims in PPP transactions is detailed in Section 3.5 (Claims). The key point is that claims are likely to be made by the Project Company at some stage during a PPP contract life and that a dispute will be more likely to arise if the Procuring Authority does not have a full understanding of the merits of a claim (for which the Project Company may be entitled to claim for and receive compensation) or the claims processes.

The Procuring Authority needs to also recognise that a claim made by the Project Company often originates with a contractor of the Project Company and the Project Company may be bound to pass the claim on to the Procuring Authority. In such circumstances, it is not necessarily a justification for concern that the Project Company is not acting in a spirit of partnership.

**D. Treat disagreements and disputes objectively: Do not allow a poor relationship with the Project Company to affect the approach taken to a dispute and do not let the existence of a dispute affect an otherwise positive relationship**

Effective relationship management in a PPP project facilitates the resolution of many disagreements before they escalate into disputes. Triggering the formal dispute resolution mechanism can sometimes be a reflection of broken communication and a damaged relationship between the parties, and even disputes (legitimate or otherwise) have the potential to affect an otherwise positive relationship. PPPs are designed to be collaborative with incentives to encourage the parties to work together on an ongoing basis and find solutions that are mutually beneficial. In one example in the study, the interviewee blamed a dispute entirely on a relationship breakdown. Both parties had a reasonable point for disagreement due to an ambiguity in the contract drafting but the disagreement led to a deterioration in the relationship which made it more difficult to resolve. On a different project, an interviewee described a situation where conversely the relationship between

the parties improved dramatically once they had managed to come to an agreement on a dispute.

One typical mismatch between the public sector and the private sector is that the Project Company is primarily interested in the monetary outcome of a dispute whereas the Procuring Authority will always need to be able to justify any compromise agreed with the Project Company, due to its accountability to the public. It is important for both sides to keep these different viewpoints in mind to help avoid further misunderstandings.

Both parties should maintain a professional relationship and continue with business as usual on any aspects of the partnership which are not affected by the dispute to avoid damaging the relationship and the project as a whole.

**EXAMPLE**

**Focusing on maintaining relationships during disputes**

The practice in a toll road PPP in India provides a good example of where there were a number of disputes over issues such as the changes to the scope related to the inclusion of obligations in relation to an existing railway bridge, but the relationship between the Procuring Authority and Project Company remained strong, with the two parties meeting regularly.

Specific approaches to maintaining good relationships include maintaining regular communications between the Procuring Authority and the Project Company aimed at resolving issues as they arise at the day-to-day operational level. Specific bespoke meetings may also need to be set up to manage disputes as they arise. Further examples of relationship management are detailed in Section 3.3 (Stakeholder management).

<sup>2</sup> Available at <https://ppp-risk.gihub.org/>

**EXAMPLE****Frequent meetings to settle disagreements and disputes**

The Port of Miami Tunnel project in the USA illustrates the benefits of having weekly meetings between the contracting parties, to work through potential areas of disagreement. If issues cannot be resolved at the operational level, they should be escalated to the strategic level (involving the relevant representatives from both parties as well as advisors where appropriate).

Another case study in a developed market identified the use of a 'chairmen's meeting', which included representatives from the Procuring Authority, the Project Company, the construction contractor and the operations contractor during a time of ongoing disputes. These meetings took place for six months on a fortnightly basis and successfully enabled the resolution of many issues.

*For more information, see the Port of Miami Tunnel Case Study.*

Given the ongoing nature of PPP contracts, it is common for personnel to become overly invested in issues that give rise to disagreements. It may be appropriate to bring in new personnel to settle disputes at a more strategic level. Having well-equipped contract managers is a key step towards avoiding disagreements and disputes. In addition, involving team members with specific skills in relationship building and negotiation can help resolve disagreements that have arisen at an earlier stage. When considering a team structure for contract management it is important for both parties to leave space in their organisational structure to allow issues to be escalated to a fresh pair of eyes. This is supported by the guidance detailed in Chapter 2 (Contract management team set-up and training).

The Procuring Authority contract management team should also consider whether it is advantageous to escalate an issue to senior executive level at an early stage. Senior representatives of the parties may be able to take a more dispassionate approach than operational employees and this may allow the disagreement or dispute to be resolved more quickly than it would be otherwise. It is also important that issues do not become escalated routinely or too

easily, otherwise senior members risk also being entrenched in a particular issue and the mechanism may cease to function, leading to the need for more formal dispute resolution mechanism escalations.

**EXAMPLE****Importance of strong relationship skills and independence**

From the point of view of the Project Company in the Central Berkshire Waste project in the UK, a stalemate between the parties was broken by bringing in people who had strong relationship building skills who then focused on improving the relationship with the Procuring Authority. As the staff were new, they had a more independent view as to what had occurred previously and were able to take a more pragmatic approach.

*For more information, see the Central Berkshire Waste Case Study.*

**E. Clarify ambiguous and unclear contract drafting before it leads to a dispute**

Contract managers should proactively ensure that any clauses of the PPP contract that are poorly drafted or ambiguous are clarified, preferably before the PPP contract is signed. Though the negotiation stage of a project is not the focus of this reference tool, one approach is for contract managers to work with lawyers, advisors and other personnel involved in the structuring and negotiation of a PPP contract to meet this challenge by clarifying any clauses that are unclear from an operational perspective prior to signing.

In situations where an ambiguity in the PPP contract becomes apparent after the PPP contract has been signed other solutions must be found. Ambiguous drafting can be a source of opportunistic claims by both parties, particularly when the economic conditions of the project change. One approach is for the parties to conduct workshops to help to agree and determine the true intent of clauses where the parties are unclear. If there is a dispute about the intent of clauses after financial close then agreeing at an operational level how the relevant clauses will operate is likely to be more productive prior to a dispute arising. If required the interested parties can also go down a more formal process path of amending the PPP contract, detailed in Chapter 4 (Renegotiation). Any clarifications have the potential to alter the risk allocation and financial position of

both parties and therefore it is worth investing the necessary time and effort in this process, including using external advisors if required.

Ambiguous contract drafting is a common area of dispute and having high quality and clear contract drafting that was well thought out and agreed to before financial close will significantly reduce the chance of disputes, giving the parties less opportunity to disagree on what has been clearly agreed.

#### **F. Ensure settlement agreements are prepared with appropriate legal input to ensure the dispute or disagreement is unambiguously resolved**

Settlement agreements are an important part of dispute resolution mechanisms. A settlement agreement is an agreement between the parties agreeing typically to exchange some financial sum for the discontinuance of relevant dispute proceedings.

Great care must be exercised when drafting and entering into a settlement agreement since the purpose is to adequately agree and capture in writing a variety of different matters that both parties may have previously contested. Comprehensive and well thought out drafting is required to avoid a dispute on the matters where agreement was thought to be reached.

A common area for confusion in settlement agreements are schedules outlining non-legal technical matters. Particular care is required in the preparation of such schedules as in relation to the main body of the document. Often lawyers are reluctant to take responsibility for the schedules, which are developed by technical and commercial team members. Good communication between lawyers and commercial/technical members of the team is essential to ensure the main body and schedules of the agreement are aligned.

A settlement agreement will be applicable in the case of a negotiated solution between the parties, including mediation; and not typically in the case where a court, arbitrator, expert or DRB has made a determination or final decision. A settlement agreement may still be agreed prior to a final decision or in the final stage before a final decision is delivered, but the important distinction is that a settlement agreement is an agreed resolution between the parties, as distinct from a determination by a third party.

Significant settlement agreements should be subject to strict oversight from a governance perspective.

#### **G. Consider the full costs of escalating a dispute and the chosen dispute resolution mechanism**

The guidance set out above in this chapter details how the likelihood of disputes can be proactively mitigated. However, given the complexities and long-term nature of PPPs, disputes are not uncommon and the remaining guidance in the chapter provides detail on managing disputes for a select number of specific dispute resolution mechanisms.

The first step to be taken is to assess what the objectives of the Procuring Authority are and how to reach those objectives. Considerations include the following:

- Which dispute resolution mechanism offers the greatest value for money, including considering which avoids interruption to the services?
- What are the full costs implications for the potential dispute resolution mechanisms?
- How can a win-win solution be reached amicably?
- How does the dispute resolution mechanism best preserve the terms of the PPP contract so that the project can continue as agreed at financial close?
- What are the time and cost implications and the impacts on the long-term operational and maintenance obligations?
- Will the decisions made through the selected dispute resolution mechanism be binding and enforceable?
- Does the dispute have an impact on the government's contingent liabilities?

In the interests of maintaining good relations it is important for both parties to have sufficient internal governance in place to control the triggering of a dispute resolution mechanism. The exact procedure for carrying out dispute resolution may depend on the mechanism defined in the contract or the underlying legal framework. And the relevant workflow, personnel and strategy will depend on which dispute resolution approach is adopted. Some of the processes set out below are lengthy and expensive, particularly when using legal practitioners. The best approach will depend on the specific circumstance and, before selecting such an approach, careful consideration should be given to the key advantages and disadvantages of each approach.

There is additional potential area for disagreement on the precise path chosen for dispute resolution. As the selected process will have an effect on the outcome both parties are likely to approach the decision strategically. If the PPP contract is not clear as to what dispute resolution option is to be used in a given situation there is a risk of delay caused by arguments regarding the mechanism to be used.

The following table and the guidance that follows provide a snapshot of the potential time and cost implications of different dispute resolution mechanisms.

Dispute resolution mechanism	Legal costs	Potential legal cost recovery	Potential management time impact
Negotiation	1 to 1.5X	No	1
Mediation	2 to 2.5X	No	2
Expert Determination (technical issue)	2.5 to 3.5X	No	3
Fast Track DRP (multiple issues)	8 to 10X	No	5
Arbitration/ Litigation	25 to 40X	60%-70%	10

Note: The above table multipliers are based on estimates from a disputes practitioner in Europe and are provided as an indicative comparison only between the different options. Ultimately, each dispute is different and market pricing will vary and so actual numbers may vary widely.

**NEGOTIATION**

**Key advantages**

- Can avoid time and cost implications of dispute resolution mechanism escalations
- Can resolve disputes faster, leading to a smaller impact on the relationship between the parties
- The parties themselves have the discretion to agree on the appropriate resolution

**Key disadvantages**

- If a Procuring Authority is not adequately prepared, negotiation can result in an outcome that reduces value for money
- Can waste time when the parties are unlikely to agree to a mutually acceptable outcome because their views are too far apart
- Has the potential to detriment an otherwise positive relationship where there is no progress being made

**H. Actively seek out negotiated outcomes to disagreements and disputes, as such outcomes have the potential to be significantly more efficient**

Negotiation should be the first step taken as soon as it becomes clear that a disagreement will not be resolved without active intervention by the parties. There may be a structured process set out in the PPP contract designed to make negotiation more effective; however, a structured process is not necessary. Negotiation merely involves the parties communicating with the objective of settling a given disagreement or dispute. Negotiation should be entered into with a clear objective of understanding the issue and attempting to resolve the disagreement.

Negotiation has the potential to be far less costly than escalating the disagreement to the next level of the dispute resolution process, although it still has the potential to be costly and take time. Circumstances will arise where there is the potential for significant time to be wasted discussing an issue on which the parties are too far apart. For such issues, it may be more efficient for the parties to seek an informed third-party decision that is binding on the parties (through court, arbitration or some other dispute resolution mechanism). The other

approaches are typically more expensive and likely to take more time to resolve and all appropriate efforts should be made to resolve the dispute at an earlier stage.

Use of protected (often referred to as ‘without prejudice’) meetings should be considered in addition to open meetings to allow further space for parties to move away from entrenched positions based on their sense of contractual entitlement without risk of compromising their position should formal proceedings result. Without prejudice privilege is not recognised in all jurisdictions. Even where such approaches are not recognised it may be possible to agree contractually that the contents of certain meetings and written exchanges will not be referred to by either party should formal proceedings result. Without prejudice privilege can be easily invoked but is often misunderstood so it is sensible to seek legal advice before attempting to implement this idea. It is important to understand the status at the start of the meeting, if not earlier, to avoid the risk of inadvertent compromise and also to avoid parties approaching the meeting at cross purposes.

When settling a dispute through negotiation, the impact on other (similar) projects needs to be taken into account as parties on other projects might look to such resolutions and have the effect of setting a precedent.

#### **I. Appropriately prepare for and assemble adequate resources before entering into negotiation**

Prior to entering into negotiation, the participants must be clear on the strengths, weaknesses and objectives of the negotiation, including full visibility on the effect any decision may have on all interested parties and any associated third parties. Negotiators on all sides of the dispute need to be appropriately empowered to resolve the disputed matter. If a negotiator on any side of the dispute is not sufficiently empowered, an agreement on a settlement may not be possible, or such agreement may not take proper effect due to a lack of the requisite authorisation. The ultimate decision in terms of overall commercial settlement will typically rest with the most senior member of the Procuring Authority’s contract management team. However, in some instances, approval may also be required from the relevant line ministry and/or finance ministry.

The Procuring Authority needs to ensure that appropriate skills are available and it may need to engage the use of external legal, financial, technical, insurance, tax and/or other advisors. One objective will be to reach consensus on the underlying cause

of the problem, including any associated technical issues. The commercial aspects can only be fully evaluated once the technical issues have been clarified and the underlying cause of the disputes has been identified and agreed upon. However, there will be circumstances where there is simply not enough information available or the cost implication of fully understanding the underlying issue is so great that the most cost-effective option is for the parties to make commercial decisions and reach a settlement based on the information available. Though it is preferable to make a fully informed commercial decision, the more cost-effective approach may be to make a decision based on the information available to avoid wasting time and to maintain a good relationship between the parties.

To assist a Procuring Authority in entering into a negotiation to settle a disagreement or a dispute the Attachment (Dispute negotiation checklist) to this section sets out a checklist that can be used as a guide to prepare for a negotiation.

#### **J. Consider associated private partners (including the construction contractor) in the resolution of disagreements and disputes related to them**

Some disagreements and disputes result from actions or inactions and risks transferred to the Project Company’s construction or operations contractors or some other third party. This may complicate negotiations. The Procuring Authority should make an assessment of which parties should be involved in the negotiations to settle a dispute as it may be beneficial for the construction or operations contractor to be present as well as the Project Company. This will particularly be the case where there is a corresponding claim made by the relevant contractor or other third party against the Project Company. In such circumstances, what the Project Company is able to agree to may be conditional on agreement by the relevant contractor. Additionally, the Project Company’s contractors may have a greater level of expertise and more detailed information available which will assist in crafting a reasonable resolution for all.

The Procuring Authority should, however, be hesitant to open the door to a variety of parties without good reason and without clear agreements over the role each will play in the process. Without this the cost and timescale of the process can quickly escalate. Care should be taken to avoid the risk of the private sector entities ‘ganging up’ on the Procuring Authority.

**EXAMPLE****Senior management meetings to prevent issues escalating into disputes**

On a transport project in a developed market, the Procuring Authority instigated a 'chairmen's Meeting', which included representatives of the project advisory board, the Project Company, and the construction and operations contractors. These meetings proved very useful in solving issues, and also helped to enhance the relationship between the two parties.

**MEDIATION****Key advantages**

- Lower cost than court proceedings or arbitration and is less likely to damage relationships
- Confidential
- More structured than bilateral negotiations
- The introduction of a third party can help to bring new ideas to the disagreement as well as objectivity

**Key disadvantages**

- May not lead to a final decision. If parties are far apart to begin with can be a waste of time
- More expensive and time consuming than negotiation

**K. Consider mediation where a more structured approach to negotiation is required**

Mediation is similar to negotiation but with the involvement of a mediator, an independent third party tasked to assist parties to resolve the issue. Mediation is an effective dispute resolution mechanism as the mediator is independent and typically very experienced in the resolution of disputes. The mediator acts as a neutral facilitator to help guide the parties to resolve the dispute and can bring reason to the discussions which is more likely to be accepted given their neutrality and independence.

Mediation should be approached in an open and inclusive manner as it is designed to help parties settle their dispute amicably without harming long-term relationships. It is a flexible confidential dispute resolution method which can accommodate any number of parties and issues, allowing parties to control the process and dispose of issues promptly. A further incentive is that whilst mediation is more expensive and time consuming than unassisted negotiation, the resolution of the matter remains in the hands of the project parties. Any dispute resolution process which involves more formal escalation such as formal court proceedings or arbitration risks generating binding decisions which may not suit either party. 32% of the PPP contracts reviewed globally allowed for mediation. This is the second highest mechanism after arbitration.

Prior to entering mediation the participants must be clear on the strengths, weaknesses and objectives of the mediation. The guidance on preparing for negotiation detailed above at guidance 'I. Appropriately prepare for and resource before entering negotiation' is just as relevant to preparing for mediation, as is the Attachment (Dispute negotiation checklist) to this section.

It is important during mediation that the parties present their cases clearly as the mediators are not necessarily technically skilled people. For example, the mediator may come from a legal background and not be a technical or financial expert. It is normal for the parties to brief the mediator thoroughly beforehand by providing position statements and agreed reading lists.

Mediation does not require a final agreement and there are no consequences if the parties are unsuccessful in concluding a settlement. Parties can walk away from mediation at any time since it is a voluntary process. However, to be successful representatives on all sides of the dispute need to be appropriately motivated and empowered to close out the disputed matter.

If the parties can agree to a resolution it is important this resolution is well documented using a settlement agreement. This topic is detailed above at guidance 'F. Ensure settlement agreements are prepared with appropriate legal input to ensure the dispute or disagreement is unambiguously resolved'.

**EXAMPLE****Mediators for the Belt and Road Initiative**

The Singapore International Mediation Centre and the Mediation Center of the China Council for the Promotion of International Trade and the China Chamber of International Commerce have agreed to work together to help resolve disputes that may arise in cross-border transactions under China's Belt and Road Initiative. They have agreed to cooperate in the promotion of international commercial mediation, and will serve both Chinese and Singaporean companies.

**EXAMPLE****Use of independent certifier as a mediator**

On the Daang Hari-SLEX Link Road project in the Philippines an independent consultant was commissioned by both parties to certify progress of the works. It was noted that this consultant can act as a mediator helping to prevent disputes as it offers an impartial evaluation of any issues, which can then be presented to the parties for agreement.

*For more information, see the Daang Hari-SLEX Link Road Case Study.*

**L. Appoint the right mediator for both parties**

The appointment of a good independent mediator is very important. Mediation can require several months of engagement and may require several sittings. The mediator, as well as the correct representatives from the parties, are integral to the process and its potential outcomes. A mediator acts as a neutral third party and their recommendations will only be accepted if they are trusted. The parties must ensure that the mediator is reputable, experienced and, respected by both parties with a verifiable track record.

Consideration should be given to the mediator's background, as the more technical or contractual a dispute is will influence who is best placed to mediate. However, the core skill of a mediator is to bring the parties together. Focusing too heavily on sector or technical specialism can unhelpfully narrow the options available. Where a dispute involves high levels of technical detail an expert can be appointed in addition to a mediator. The expert can provide expert knowledge to assist the mediator.

**DISPUTE RESOLUTION BOARDS****Key advantages**

- Versatile. Decisions can be binding or non-binding. Can make recommendations or determinations.
- Can guide the parties from the beginning of a disagreement

**Key disadvantage**

- Costs are not insignificant and are typically fixed, irrespective of whether a dispute arises during the project term.

**M. Utilise Dispute Resolution Boards where available**

Dispute Resolution Boards (DRBs), also referred to as Dispute Avoidance Boards or just Dispute Boards, can be effective mechanisms for the avoidance and resolution of disputes. They are designed to be established at the outset of the project and to monitor the project on an ongoing basis, including by meeting regularly to assess the progress of a project.

**EXAMPLE****Key role of DRBs**

The interviewees on the Port of Miami Tunnel project in the USA felt that the Dispute Resolution Board was helpful in avoiding the escalation of disputes. It was used for a dispute that occurred over increased tunnelling costs, where the DRB ruled that certain cost increases should be covered by the Procuring Authority. Once this decision was made, the parties were able to negotiate the dollar amount, avoiding court proceedings.

***For more information, see the Port of Miami Tunnel Case Study.***

Because DRBs are designed to be established at the outset and PPP contracts are long-term in nature, their costs can be high and fixed irrespective of whether a dispute arises.

The process for resolving disputes using a DRB normally begins with each party producing an appropriately detailed position paper for consideration by the DRB. Thereafter a meeting can be held to give each party an opportunity to present its case for determination by the DRB. Once formal procedures have begun the timeframes will generally be tight, emphasising the importance of ongoing good document control by the Procuring Authority. Information management and document control is detailed in Section 3.4 (Information management). DRBs are not bound by traditional rules of evidence and the members will have broader discretion on how they inform themselves of the subject matter.

DRBs can provide interim solutions to problems and keep the parties working constructively together. Their use should therefore help to avoid problems escalating and the relationship between the Project Company and the Procuring Authority deteriorating. However, any determination will typically be subject to review through court proceedings or arbitration if a party decides to go down that path.

A DRB may have a broader function to help avoid disagreements turning into disputes. This can involve seeking the opinion of the DRB to assist the parties' thinking in agreeing to an appropriate dispute resolution mechanism.

**EXAMPLE****Additional benefits of DRBs**

The dispute resolution process for one of the case studies in a developed market included the use of a Dispute Avoidance Board, which can make recommendations to the parties. In one situation it recommended an expert determination process be used, which was then successful in resolving the dispute in question.

DRBs are commonly used in construction contracts between a principal and a contractor. PPP arrangements are more complex because there are more parties involved. For example, a PPP contract is agreed between a Procuring Authority and a Project Company, though construction risks are passed down to a separate construction contractor under a construction contract. This adds complexities to a DRB arrangement. One way of addressing such complexity is to give the construction contractor a 'seat at the table' in addition to a Project Company and/or require the construction contractor to agree upfront to the determinations of a DRB.

DRBs will generally have a dispute resolution function whereby either party can formally refer a dispute to the DRB for a written recommendation or determination. These recommendations or determinations can be binding or non-binding, depending on what the parties agree in the PPP contract. The other option is that the board can fulfil either function (i.e. issuing binding and non-binding decisions) and the parties decide on a case by case basis whether they are seeking a binding or a non-binding decision.

22% of the PPP contracts reviewed globally allowed for DRBs. There were several examples of disputes being resolved using a DRB, including in Germany, the USA, and Australia. Out of the data sample, 9% of disputes were successfully resolved using a DRB.

In some jurisdictions, such as Chile, a standing technical panel is established to hear certain disputes and propose settlement agreements prior to any formal arbitration (though the panel may not necessarily be called a DRB). Other jurisdictions (e.g. Europe) also consider the engagement of a single or a panel of experts on a case by case basis to issue an opinion on a dispute to assist the parties



in coming to an agreement before the dispute moves to arbitration. A technical panel of experts can have similar cost implications to those of a DRB.

#### **N. Set up the Dispute Resolution Board before a dispute arises, but also consider the changing needs of the Dispute Resolution Board for the project**

A decision should be made on whether to set up a DRB on a permanent basis. Setting a DRB up on a permanent basis has the advantage of allowing it to maintain familiarity with the project and avoid disagreements on the arrangement of the DRB itself, including the appointment of the board.

This cost implication has led to the practice, in many jurisdictions, of DRBs not being established until after a dispute arises to save on the costs of retaining the board members at financial close. Setting up a DRB on an ad-hoc basis may be considered less costly, as the board is only engaged when a dispute has arisen. Although, in the context of a large PPP, they are only a small percentage of the total project cost. It can also cause several difficulties, as if the parties have to agree jointly to the board members, this process will be less simple once a dispute is already in motion and it will further delay the resolution of the dispute.

It may not be necessary for the DRB to be established for the entire duration of a PPP contract, considering the costs involved in having a DRB for the entire duration. The likelihood of complex disputes decreases after the construction phase has ended and a DRB may be able to function at a reduced capacity during operations. For example, it could meet less frequently, or the board could be reduced in number, perhaps from three members to one member. The members may also need to change based on the different experiences required for the relevant project activities in the operations phase. A DRB can also be appointed, subject to review every three or five years, giving the parties a chance to decide not to re-appoint the DRB if they decide it is no longer required.

#### **O. Appoint the right Dispute Resolution Board for both parties**

The composition of a DRB can be outlined in a PPP contract, and will often include three members with a mixture of technical and legal expertise. A common process involves each party appointing one member and the two party-appointed members selecting the final member. Where the Procuring Authority has the right to select a member or

members of the DRB, it needs to consider the experience of its nominee from a technical, legal and contract management perspective. The process for appointing the board should not be rushed. Often the parties are stuck with panel members for an extended duration and often there is no mechanism for replacement of the board.

Board members are typically required to have the technical qualifications or skills necessary to review or determine the technical matters in dispute (e.g. engineering, cost or programming qualifications). The presence of one board member who has legal qualifications is also common. Potential issues with appointees to be considered include lack of experience, lack of independence and lack of availability. Professional advisors may be able to assist to provide recommendations if the parties cannot think of who to appoint.

Further information on how to set up a DRB is available at the Dispute Resolution Board Foundation<sup>3</sup> or the International Chamber of Commerce.<sup>4</sup>

### **EXPERT DETERMINATION**

#### **Key advantages**

- Can resolve disputes quickly and in a cost-effective manner
- A determination will typically be contractually binding subject to certain exceptions

#### **Key disadvantages**

- Only appropriate for certain matters of a technical nature, and not for matters which require the provision of evidence
- Determination will not be as enforceable by a court like a court decision or arbitral award

#### **P. Where available consider expert determination for disputes that are of a technical nature**

Expert determination typically refers to a mechanism common to some PPP contracts where disputes that are of a 'technical nature' are referred to an individual or panel of experts with the relevant

<sup>3</sup> Available at <http://www.drb.org/>.

<sup>4</sup> Available at <https://iccwbo.org/dispute-resolution-services/dispute-boards/>.

technical expertise for a determination. A PPP contract may set out the issues of a 'technical nature' that are applicable. These typically include things like scheduling forecasts, specific valuations and accountancy issues.

The expert will consider factual evidence (whether witness or documentary), but expert determination is not a forum for cross-examination of witnesses. In addition, it is common for the parties to submit reports from party-appointed experts to support their own standpoints.

Expert determination is different to the other dispute resolution mechanisms mentioned because of the narrow scope covered. There are advantages to this as the determination is typically binding and relatively quick and cost effective for the specific issues referred. A determination by only one expert on very technical issues is not uncommon. 25% of the PPP contracts reviewed globally allowed for expert determination. There can also be contractual timetable constraints around expert determinations. There often needs to be agreement to a reasonable extension to the contractual timetable for the expert to issue their decision. If a decision is issued out of time there is a risk the determination may be invalidated.

It is rare to find a dispute that is exclusively technical. Money is usually the underlying basis of most disputes and while it may be possible to isolate a technical issue for referral, in practice parties often combine all or the majority of issues. This may mean that elements of the dispute are outside the strict scope of the appointees' expertise. However, resolving the very technical aspects of a dispute can assist the parties to come to a common understanding of the underlying facts of a broader dispute and help to reach a commercial resolution.

The 2017 version of the World Bank's Guidance on PPP Contractual Provisions<sup>5</sup> provides additional helpful commentary on typical expert determination dispute resolution mechanisms.

#### **Q. Appoint the right expert for expert determination**

As with other forms of third party recommendations (such as mediation), the choice of expert is vital. The expert must be appropriately experienced and trusted by the parties, otherwise there is a chance their decisions will not be followed. For example, the party that is unhappy with the determination

may not comply with the determination until the determination has been confirmed by a court proceeding or arbitration.

The Procuring Authority needs to keep in mind that PPP contracts are complex and typically quite bespoke. If the experts come with a pre-determined approach (e.g. an approach similar to that which would be used for a determination in relation to a traditional construction contract) they might have a tendency to apply such concepts also to a PPP contract, which will not end with a positive or correct outcome.

### **COURT PROCEEDINGS**

#### **Key advantage**

- Provides a final determination

#### **Key disadvantages**

- Is an adversarial process and may lead to a deterioration in relationships
- Typically the most expensive and time consuming of all dispute resolution mechanisms

### **ARBITRATION**

#### **Key advantages**

- Provides a final determination
- Customisable to parties' preferences
- Can be more efficient in terms of time and costs than court proceedings

#### **Key disadvantages**

- Is an adversarial process and may lead to a deterioration in relationships
- Can be perceived by members of the public to lack transparency (if conducted in private and the results are confidential)

#### **R. Consider the full implications of moving a dispute to court or arbitration**

Moving a dispute to court or arbitration is an adversarial process and should be considered as a last resort. As such processes are adversarial they are potentially damaging to the reputation of the parties. An advantage is that the processes will deliver a binding decision delivered by a third party and so may prove to be more efficient where the

<sup>5</sup> Available at <http://ppp.worldbank.org/public-private-partnership/library/guidance-on-ppp-contractual-provisions-2017-edition>

parties are unlikely to otherwise agree to a mutually acceptable resolution. The outcome of such proceedings is binding and can typically be enforced through the courts, subject to rights to appeal the decision (which will depend on the forum and the jurisdiction).

Arbitration can be agreed in the PPP contract as an alternative process to court proceedings although the parties may still have access to the court systems for specific issues (such as issues requiring immediate court intervention). The parties may not always be able to agree to arbitration as an alternative to local court proceedings in a particular jurisdiction. Additionally, individual jurisdiction's applicable laws may not allow for disputes to be decided in a forum other than a local court.

Arbitration is often preferred by private partners because it is perceived as being more neutral than the use of local courts particularly in relation to contracts with government entities. It may also be a non-negotiable requirement for lenders as lenders will be less willing to accept the risks associated with local courts.

Arbitration is more customisable than court proceedings, which can have the effect of making it faster and cheaper. For example, arbitration may allow for the streamlining of document disclosure processes, as compared to more stringent court requirements. There is ongoing debate that typical arbitration procedures have, in fact, become more time consuming.

Some disadvantages of arbitration over court processes are that the parties have to pay the costs. Arbitration can also be less flexible than court proceedings for multi-party disputes. Disputes in PPPs are often multi-party disputes as significant risk is passed through the Project Company to its contractors.

Arbitration is also different to court proceedings in that it is conducted in private and often confidential. This will typically benefit the Project Company, whereas it may be a positive or a negative attribute for the Procuring Authority. On the positive side the Procuring Authority may see the benefit of keeping any spurious disagreement around the project out of the public sphere and the media. However, there can be negative implications for the Procuring Authority if the public perceives the confidential nature of arbitration as a hindrance to government transparency. In several jurisdictions court proceedings are preferred due to their higher level of transparency.

The data shows that 39% of disputes were settled in court as opposed to 22% through arbitration. It should be noted, however, that this is based on a relatively small sample size. Only 42 projects were found to have data on court proceedings and as arbitration is conducted in private and is often confidential the results may be skewed, indicating a higher incidence of settlement through court proceedings. Within PPP contracts arbitration was a common and widely used dispute resolution mechanism. Arbitration provisions were in 56% of the PPP contracts reviewed globally, with 54% of the PPP contracts adopting domestic arbitration and 17% adopting international arbitration.

### S. Choose the right arbitrator(s)

The selection of the arbitrator must be carefully carried out. PPPs are unique contracts and most arbitrators will not have had direct experience with PPP projects. It is also important to find an arbitrator who does not have a potential conflict of interest, especially if the jurisdiction is relatively small or the market is developing. There are different forums available for arbitration with international arbitration available as well as the domestic equivalents. A full discussion of the differences is beyond the scope of this reference tool.

Both parties need to be happy with the appointment of the relevant arbitrators such that the decision is seen as legitimate by all parties to avoid further issues.

#### EXAMPLE

#### Difficulties with arbitrators

The Project Company on a cross-border rail project in a developed market did not favour the arbitration clauses in the PPP contract, which allowed each party to choose an arbitrator to sit on the panel. There were two Procuring Authorities and each had the right to appoint a representative to the arbitration panel. Thus the Procuring Authorities had two representatives compared to only one for the Project Company, creating an impression the process was not fair to the Project Company. A lack of trust in the mechanisms used to resolve disputes can damage the relationship between parties, as well as potentially prolong the dispute or lead to further disputes.

**T. Prepare to provide detailed evidence when moving a dispute to court or arbitration**

The provision of evidence is a key process used by court proceedings and arbitration in reaching decisions. The Procuring Authority needs to be aware of the rules of evidence that it will be required to comply with, such as providing access to witnesses. In addition, preparing for arbitration takes time as detailed evidence needs to be submitted by each party to support their arguments. Such preparation will require careful interpretation of the PPP contract, accurate records, a robust review of the Procuring Authority's liabilities and risks, and an objective assessment of the cost and time implications of the underlying cause of the dispute. This emphasises the importance of ongoing good document control by the Procuring Authority. Information management and document control is detailed in Section 3.4 (Information management).

The concept of legal privilege should also be considered. The concept can be used in many jurisdictions to protect certain documents from disclosure. However, specific conditions must be met to obtain this protection. It is important for Procuring Authorities to establish, with the benefit of legal advice, procedures to enable the use of such protections.

**ATTACHMENT: Dispute negotiation checklist**

- What are the Procuring Authority's objectives for the negotiation?
- Be clear about what your understanding of the underlying cause of the disagreement or dispute is.
- Consider the Project Company's understanding of the underlying disagreement or dispute.
- What are the strengths and weaknesses of the different sides of the disagreement or dispute?
- A key objective for the Procuring Authority should be to reach a common understanding on the underlying cause of the problem leading to the disagreement or dispute, including any associated legal and technical issues.
- What are the skills needed to assess the underlying cause and carry out the negotiation (legal, financial, technical, insurance, tax, other)?
- The Procuring Authority may need to appoint external advisors.
- Consider the effect any decision may have on all interested parties.
- Assess who should be involved in the negotiation. It may be beneficial for the construction or operations contractor to be present.
- Depending on the significance of the dispute and settlement options, the Procuring Authority may need to seek approval from another relevant government department.
- Are negotiators on all sides sufficiently empowered to resolve the matter?
- What are the strengths and weaknesses of the participants in the negotiation?
- Once technical and legal aspects have been clarified, the commercial aspects can be properly evaluated. Commercial aspects should be considered on both short-term and long-term basis.
- Evaluate the Procuring Authority's 'worst case scenario' option, preferred option and compromise option.
- Where limited information is available (or the cost implications of fully understanding the underlying issue are great) the parties should attempt to reach a settlement based on the information available.

### 5.3 Summary data analysis

This section provides a summary of the data analysis related to disputes. The full data analysis is available in Appendix A (Data Analysis).

Contractual disputes are common in PPPs during both the construction and operational phases. The research found that a formal notice of dispute was issued by one of the contracting parties on 42 projects out of 165 PPPs studied (for which dispute data was available) which is a prevalence of 25%. There was a prevalence of 17% for dispute events occurring in the first four years after financial close. There was an approximately even split between disputes during the construction and operational phases. Construction phase disputes occurred 3.2 years after financial close on average. Operation phase disputed occurred 4.3 years after financial close. The average length of the construction phase for the projects was 3.9 years indicating that the disputes in the operations phase were occurring near the start of that phase.

The prevalence of disputes during the operations phase would have potentially been higher than during construction had the study timeframe been longer and had it included projects which had completed their full contract term. The study

was limited to projects that reached financial close between 2005 and 2015 (inclusive). There was only one project which had completed full operations during this period. Given the timeframe, the earliest projects in the study (i.e., those that reached financial close in 2005) have reached a maximum of 13 years after financial close.

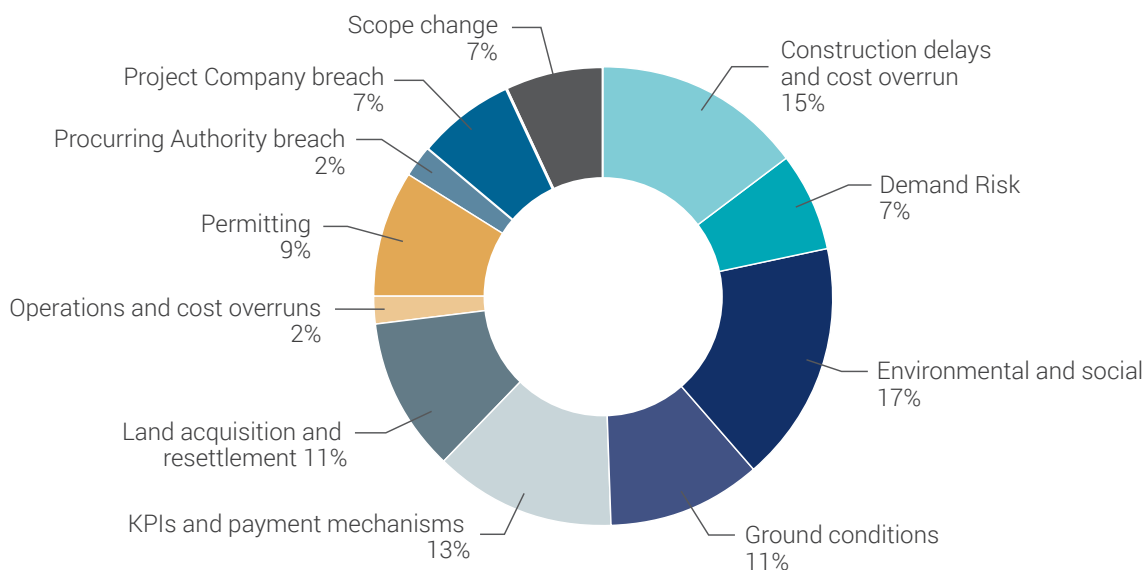
The highest prevalence of disputes was in the transport sector, with 27 instances out of 77 projects for which data was available (35%). The energy sector came in at 16%, with 11 instances out of 68 projects for which data was available. There were four disputes found in the water and waste sectors. These numbers are too small to draw any firm conclusions on the prevalence of disputes in these sectors.

The research also indicates that asset condition upon handback is often an under-appreciated risk and there could be several handback-related disputes in the future for the projects studied.

#### Dispute subject matters

There was a large variation in the subject matter of disputes in the sample. The research indicates that disputes often occur due to ambiguous contract drafting, misunderstandings of the intent of risks transferred and the further risks associated with the differing interpretation of bespoke and/or complex terms.

Figure 1: Cause of disputes, based on 30 projects that have dispute causes available



The most common reason for the Project Company to issue a dispute notice was an increase in costs for which the Project Company was seeking compensation. Some common examples from the study were increased costs due to: unexpected ground conditions; unanticipated maintenance costs for existing infrastructure; a change in scope; and revenue forecasts. These disagreements were based around how to calculate the compensation to the Project Company or the Project Company arguing that the actions of the Procuring Authority led to reduced demand.

The most common reason for the Procuring Authority to issue a dispute notice was the ongoing failure of the Project Company to meet operational requirements. Some common examples from the study came about as a result of poor road quality or a failure to meet Key Performance Indicators.

The other category of disputes which appeared were those caused by actions of a third party. This includes decisions by an environmental regulator or ongoing protests by local populations. These are worthwhile noting as a reminder that external events have the potential to cause problems if handled poorly, either before contract signature or during project delivery.

Overall, disputes caused by issues related to permitting, environmental and social impacts or land acquisition and resettlement amount to 43% of all disputes identified on the 165 projects for which data was available. If disputes due to ground conditions and various other construction delays and associated cost overruns (for which full detail on granularity of causes was not available) are added to this category then the overall prevalence of disputes due to site conditions, permits and or approvals, social issues and land acquisition amounts to 57%.

### Dispute resolution mechanisms

The majority of projects investigated in the study have defined dispute resolution mechanisms (78 projects out of 115 for which data was available, i.e., 68%). The prevalence of each type of mechanism is shown in Table 1 below.

**Table 1: Prevalence of dispute resolution mechanisms explicitly defined in PPP contracts, based on 115 projects**

Mechanism	Examples found*	Percentage*
Escalation to senior management	31	27%
Expert determination	29	25%
Dispute Resolution Board	25	22%
Mediation	37	32%
Domestic arbitration	62	54%
International arbitration	19	17%

\*As there may be more than one mechanism used per PPP contract the total examples/percentage is greater than the number of projects with data available

Many projects were able to solve their issues using the earlier escalation mechanisms stipulated in the PPP contract. An example of this is illustrated in the Central Berkshire Waste Case Study. Multiple projects which were investigated as part of the data collection process, however, had no dispute resolution mechanisms detailed in the PPP contract (as common in some civil law jurisdictions) and consequently disputes were escalated to the relevant court.

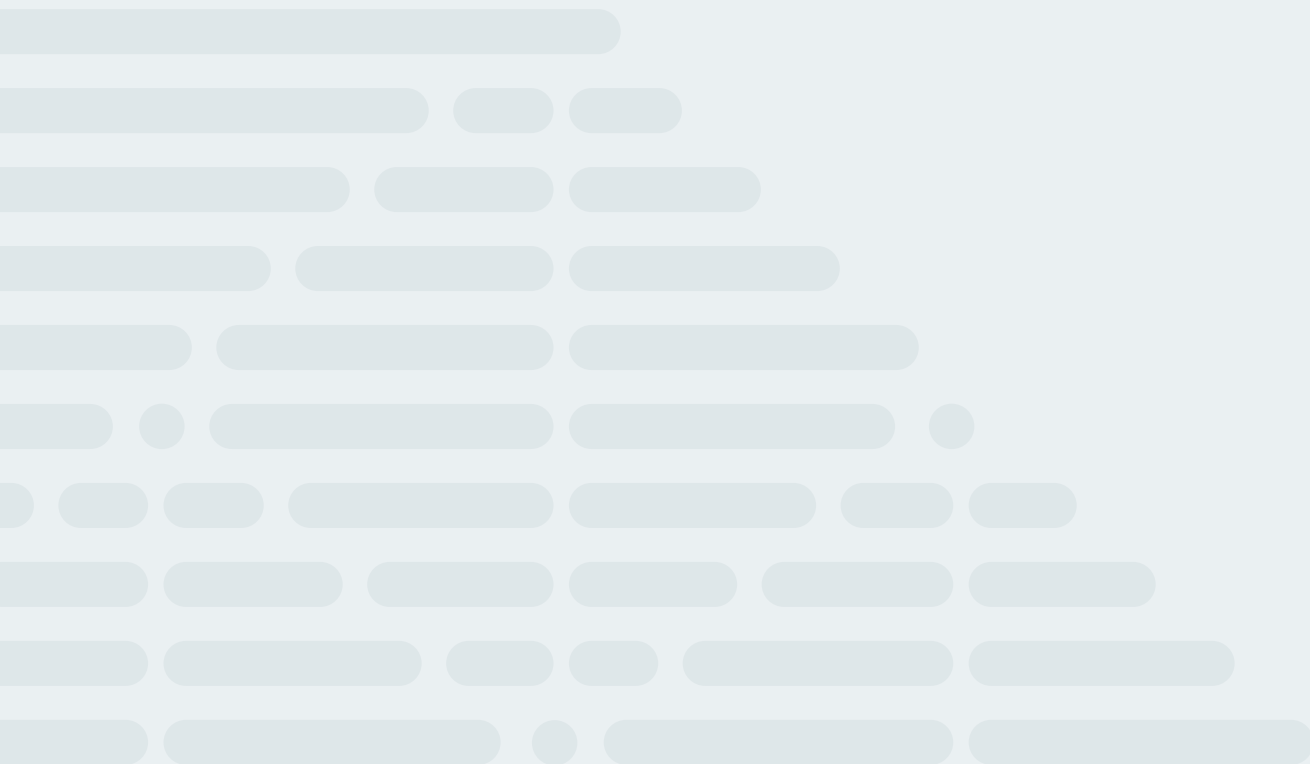
A preferred method for project parties is to pursue settlements through facilitated discussion and mediation. This is done to avoid progressing detailed claims on a winner takes all basis, such as through court proceedings or arbitration. A private, collaborative approach enables parties to reach amicable settlement where both parties compromise and thereby also avoid expensive and potentially acrimonious formal dispute resolution mechanisms which may damage the parties' working relationship. This process may also allow discussion and exploration of the different methods of financial compensation and funding available

through the various payment models in place. The data showed only 9% of disputes are settled by mediation. However, this is likely skewed since mediation proceedings are typically confidential and so data is less accessible.

Although many disputes in PPP transactions are resolved before they reach court or arbitration, the data indicates that as high as 65% of disputes are still settled through court proceedings or arbitration. This data may also be skewed as there is typically more data available on higher profile arbitration and court proceedings.



# Insolvency



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## 6 Insolvency

Insolvency is the inability of a company to meet its financial obligations as and when they become due. A PPP contract typically defines Project Company insolvency as a default event giving rise to termination. The Procuring Authority will need to manage these challenges, including contemplating the possibility of terminating the PPP contract. Termination is detailed in Chapter 7 (Default and termination)

Due to the long-term nature of PPP contracts, it is possible for a Project Company to encounter some form of financial distress during the contract term; however, insolvency is rare. During the construction phase, difficulties can arise due to increased construction costs or difficulty in accessing financing, while in the operations phase it can be due to lower than expected revenues and consequent difficulties in repaying lenders. Where these difficulties continue, the Project Company is at risk of becoming insolvent, jeopardising the delivery of the services the project was designed to provide.

Contractors are also at risk of insolvency for various reasons, including factors outside the project. While contractor insolvency is not expected to lead to Project Company insolvency, it does put the delivery of services at risk, especially in the short term.

It is in no party's interest for the Project Company to fall into insolvency. In such an event, the Procuring Authority will need to finish the project with little leverage for negotiating favourable terms with a replacement Project Company.

Across the 204 projects with data covered by the study, 3% of Project Companies had gone insolvent and 7% of key contractors (including suppliers) had gone insolvent. The timeframe of the projects studied (i.e. those that reached financial close between 2005 and 2015, inclusive) means that most of the projects are still ongoing, so these numbers could increase.

There is no one-size-fits-all solution to dealing with a Project Company that is experiencing financial distress. PPP projects are unique, with bespoke contractual arrangements, and there are different applicable laws according to local jurisdictions. This guidance therefore sets out the principles that should be followed and some common circumstances. However, in the case of Project Company or contractor insolvency, each Procuring Authority will have to analyse its situation and weigh up all available options.

### CHAPTER STRUCTURE

This chapter provides a background to issues around insolvency of Project Companies and key contractors in Section 6.1 (Background) and provides guidance on managing insolvency and financial distress. The key elements to successfully managing insolvency are summarised below and detailed in Section 6.2 (Guidance).

- A. Monitor the financial performance of the Project Company to prepare for issues
- B. Monitor the financial performance of the key contractors whose failure could affect the project, and ensure the Project Company is complying with its payment obligations
- C. Assess the cause of the Project Company's financial distress, as it may affect how to best proceed
- D. Even where the financial distress is caused by the Project Company, the Procuring Authority should consider the full financial and non-financial implications of allowing the Project Company to fall into insolvency
- E. Where the financial distress is not caused by the Project Company's failure, work with the Project Company
- F. Seek legal advice in the case of insolvency or near insolvency of the Project Company
- G. Consider the potentially conflicting interests of the Project Company's directors

Section 6.3 (Summary data analysis) provides a summary of data analysis with respect to insolvency of Project Companies and contractors.

## 6.1 Background

Where a PPP is project financed, a 'special purpose vehicle' (SPV) Project Company will be created to deliver the project, which will have an asset and liability profile specific to that project. Under such arrangements, lenders typically have no recourse against the Project Company's equity investors or parent company, and they must look to the project's revenues to repay loans. This is a central feature of the project finance arrangements typically used for major PPP projects, and should shield the project from the insolvency of equity investors that own the Project Company. The focal point of project finance is therefore to match cash flows generated by the project to the Project Company's debt service obligations over the long term and allowing for an appropriate return on investment for the equity investors.

The result of this arrangement is that any disruption to the project performance and revenue streams (e.g. if a toll road experienced traffic volumes significantly below what was forecast) has the potential to threaten the Project Company's ability to make its loan repayments and remain solvent.

A typical project-financed Project Company will also have high levels of debt and tight cash flow models. Lenders are therefore incentivised to maintain a high degree of control, including when negotiating the risk allocation of a PPP contract. Lenders often require security against the PPP contract and the Project Company's cash flow, restrictive covenants, project monitoring and step-in rights to intervene and prevent termination of the PPP contract, as well as additional safeguards typically in place, contractors' security packages, insurance, hedging arrangements and project reserve accounts are all examples of safeguards designed to minimise the risk of financial distress and insolvency of the Project Company.

As well as being exposed to the project risks, the construction contractor and the operations contractor are typically exposed to additional risks outside of the project, and it is more common for either to become insolvent during the relevant phase of a PPP project than for the Project Company itself.

### Lender step-in

Where a PPP is project financed, the lenders may require some right to take over the project where the Project Company has failed to fulfil its obligations under the PPP contract. This can include in circumstances of insolvency as well as other serious

breaches of the PPP contract. In this context, 'step-in' refers to the ability of the lenders, or a third party nominee of the lenders, to step into the role of the Project Company to give it the opportunity to rectify the issues.

These interventions are designed to give the lenders a chance to remedy the relevant breach of the PPP contract before it is terminated. In such cases, the Procuring Authority agrees under a direct agreement that it will not terminate the PPP contract until the lenders have had a chance to cure the breach.

Lender step-in therefore typically refers to the lenders exercising their rights under a direct agreement between the Procuring Authority, the lenders and the Project Company.

Another method by which lenders may exercise a similar right is embedded into the applicable insolvency laws of certain common law jurisdictions, allowing the lenders to appoint a receiver to take over the project. This has a similar effect to exercising a step-in right under a direct agreement.

Lender step-in events are not common in practice, and the study has not found any example of substitution in the sample of 250 projects globally. However, lenders played an important role in a number of Australian transport projects, most of which reached financial close prior to the sample period.

### EXAMPLE

#### Australian transport project insolvencies

The Project Company on the Sydney Cross City Tunnel project in Australia became insolvent in 2006 and the lenders exercised their step-in rights. A receiver appointed by the lenders was able to sell the project assets to new equity investors, which enabled the lenders to be repaid and allowed a partial return of equity to the original equity investors. This was successful from the point of view of the Procuring Authority, as no additional funding was required from the government and tolls were not increased. Similar outcomes have been achieved on other PPPs in Australia that have experienced financial distress, such as the Lane Cove Tunnel project, the AustralAsia (Adelaide-Darwin) Railway project and the Brisbane Airport Link Tunnel project (though not all lenders involved were repaid in full).

Lenders are not typically in the business of operating live projects, and they may also have concerns that by exercising too much control they may take on direct responsibility for the project's problems (e.g. environmental liabilities).

Although the granting of lender step-in rights for PPPs is quite common in the global context, there are several jurisdictions where it is not common, or where the underlying legal system (particularly in civil law jurisdictions) does not allow it.

Civil law jurisdictions face some different challenges from those faced in common law jurisdictions. For example, if the concept of 'economic equilibrium' exists in the jurisdiction's underlying legal system and an event materially alters the financial position of one of the parties, then a court might intervene to address the imbalance even though there was no contractual right for that to occur. This situation can affect the lenders' decision on whether to intervene with additional support in the time leading up to a potential insolvency.

### **Key contractor insolvency**

It is more common for either the construction or the operations contractor to become insolvent during the relevant phase of a PPP project than for the Project Company itself to become insolvent. While the insolvency of a key contractor is primarily a Project Company risk, the Procuring Authority still needs to monitor the situation both during the lead up to and following the insolvency, because of the increased risk to the project. Termination of a key contractor is detailed in Chapter 7 (Default and termination).

The Project Company typically manages the risk of contractor insolvency by seeking to recover the replacements costs from the insolvent contractor's security package (e.g. performance bonds and parent company guarantees). The security package is designed to cover the cost of replacing the insolvent contractor, including any premium the new contractor will charge to take on partially completed works.

## **6.2 Guidance**

The following guidance outlines the key issues that should be considered when managing insolvency and financial distress in relation to a Project Company or contractor.

### **A. Monitor the financial performance of the Project Company to prepare for issues**

It is important for the Procuring Authority to monitor the financial condition of the Project Company on an ongoing basis, as financial distress is not always easy to detect. Effective monitoring increases the likelihood of the Procuring Authority being alerted in sufficient time to address issues and ensure that public services are not affected. The Procuring Authority should also maintain clear communication lines with the Project Company to monitor key risks.

The Procuring Authority may require the Project Company's financial statements to be submitted each quarter, with its audited financial statements submitted annually. These financial reporting requirements will be set out in the PPP contract. The Procuring Authority should carefully review these financial statements.

The Procuring Authority may also have the right to inspect the Project Company's financial records by providing notice to the Project Company. If the Procuring Authority has concerns about financial performance, it should use this right to satisfy itself there are no significant issues.

Aside from financial statements, there are other early warnings of financial distress the Procuring Authority can look for.

The most obvious sign of financial difficulty is increasing delays in contractor payments, which indicate that the Project Company may have a cash flow problem. The following events are also notable:

- Financial distress of contractors, subcontractors and/or suppliers where replacements have to be found or different terms negotiated to avoid the failure of those parties
- Evidence of disputes with contractors, or a lack of labour and plant on site, which may suggest that the Project Company is struggling to pay its contractors
- Unexplained difficulty in maintaining progress of construction works
- Attempts to delay or reduce maintenance activities

- The lenders negotiating more stringent terms on the Project Company for technical defaults under the lending facilities
- Spurious claims or an overly aggressive attitude to disagreements over financial matters

Performance monitoring more broadly is detailed in Section 3.2 (Performance monitoring).

**B. Monitor the financial performance of the key contractors whose failure could affect the project, and ensure the Project Company is complying with its payment obligations**

Where a key contractor faces financial distress, it has the potential to have a serious impact on the viability of the Project Company. This is particularly true in the construction phase where the key contractor or a related company is also a main equity investor and there are still obligations for equity contributions.

An independent certifier appointed by the parties will often report on the progress of the construction program, and on compliance with the output specifications during construction and sometimes operations. The Procuring Authority should use these reports to look out for early warning signs of insolvency. In addition to the events described above, the following events could be a sign of impending issues:

- Unexplained and impractical re-sequencing of works to maximise cash flow
- Profit warnings on the stock market in the case of publicly listed companies
- Failure to pre-order materials with long lead times
- Failure of other projects where the construction contractor is involved

In some cases the financial distress of the contractor may be caused by the Project Company failing to make required payments due to a contractor. In these circumstances, the Procuring Authority may have a right to step in and remedy the payment default. The Procuring Authority should monitor this type of behaviour to ensure the Project Company is not increasing the project risks. Procuring Authority step-in rights are detailed in Chapter 7 (Default and termination).

**C. Assess the cause of the Project Company's financial distress, as it may affect how to best proceed**

This chapter details specific guidance according to whether the financial distress of the Project Company was caused by itself or a third party, or was contributed to by the Procuring Authority.

The Project Company's financial distress may be caused by a range of issues, which can be directly related to the project or related to external events.

For example:

- Revenue issues caused by lower than expected demand (e.g. on a tolled highway where the Project Company took demand risk)
- Revenue issues caused by difficulties in collecting payment (e.g. due to fare evasion)
- Cost increases during construction (e.g. due to an increase in the price of raw materials)
- Cost increases during operations (e.g. due to inefficient management, or higher than expected maintenance costs)
- Issues with repaying loans where revenue is earned in a different currency from the loan and the position is not hedged
- Issues obtaining financing in a situation of economic crisis
- The Procuring Authority unfairly over-enforcing the PPP contract (e.g. using the 'letter of the contract' to squeeze the Project Company and retaining amounts due)
- Changes in government and/or policy

Where the Project Company is facing financial distress, the first step for the Procuring Authority is to make an assessment of the underlying causes and extent of the issue. It will then need to assess how the risk of those underlying causes was allocated in the PPP contract to inform the approach that the Procuring Authority takes.

It may not always be clear how a risk was allocated and appropriate legal, financial and technical expertise should be involved to make informed decisions. For example, this can occur where the risk of latent ground conditions on a tunnel project is shared.

**D. Even where the financial distress is caused by the Project Company, the Procuring Authority should consider the full financial and non-financial implications of allowing the Project Company to fall into insolvency**

The cause of the Project Company's financial distress may be due to the realisation of a risk that was clearly transferred to the Project Company under the PPP contract (e.g. because of lower than expected revenue on a project where the Project Company has taken demand risk), or due to the underperformance or mismanagement of the Project Company.

Where the Project Company is experiencing significant financial distress, the provision of services is put at a higher risk. Therefore, the Procuring Authority may need to consider the implications of the worst-case scenario of serious delay, insolvency and/or project termination against providing some form of compensation or relief. This is the case even where the risk was allocated to the Project Company.

The Procuring Authority should work with the Project Company to produce a recovery plan, where recovery is possible. This should be scrutinised by the Procuring Authority to assess its adequacy and if any further financing is required.

The Procuring Authority should also consider entering into a renegotiation of the PPP contract (or carrying out a rebalancing) to ease financial distress. This may include reducing the construction and/or operations obligations of the Project Company or extending the construction and/or operations phases. The approach to renegotiation is detailed in Chapter 4 (Renegotiation).

The Procuring Authority needs to calculate what the costs of the Project Company's insolvency would be, both monetary and reputational – including the cost of terminating and retendering the project as necessary – and then determine the best course of action. Project Company insolvencies also attract negative publicity and may affect market appetite for taking over a failing project.

In some jurisdictions, the Procuring Authority can become liable to third parties if the insolvency cannot be avoided and third parties are 'misguided' to continue business with the Project Company due to measures taken by the Procuring Authority.

Proceeding with termination, and hence paying termination compensation, should be fully considered by the Procuring Authority, but only after all other avenues have been exhausted, and

the equity investors and lenders are not prepared to contribute additional capital. In some instances, equity investors and/or lenders may be willing to invest further equity to salvage the project. Termination is detailed in Chapter 7 (Default and termination).

**EXAMPLE**

**Project Company difficulties in obtaining finance**

The Project Company in one of the case studies in Brazil is facing financial difficulties with lower than expected toll revenue, and challenges in raising the required debt finance. The Procuring Authority is considering extending the period in which investment can be completed, as well as whether to take alternative steps such as:

- Terminating the PPP contract and retendering the project
- Replacing the equity investors with new equity investors capable of raising the required debt finance
- Requiring the existing equity investors to commit additional equity.

*For more information, see the Brazil Toll Road Case Study.*

**EXAMPLE**

**Cross border insolvency**

The Project Company on a cross border rail project became insolvent due to significantly lower revenue than forecasted. In this case, the Procuring Authority stepped in to transfer ownership to an entity owned by the neighbouring countries to ensure continuity of service, with the majority of staff continuing on to the new operators.

**E. Where the financial distress is not caused by the Project Company's failure, work with the Project Company**

Where the cause of the financial distress is due to a risk that was either retained by the Procuring Authority, or shared between the Project Company and Procuring Authority, it may be the actions or

inactions of the Procuring Authority or a party related to it that is contributing to the financial distress.

For example, in the construction phase, the Procuring Authority should be aware that the Project Company may encounter additional liquidity issues where there is a 'cash flow mismatch' – for instance, when it has made a claim against the Procuring Authority for significant cost overruns but is still required to pay its contractors. In these circumstances, the Procuring Authority should work with the Project Company to process any claims and payments that are legitimately due to the Project Company as soon as possible, and may assist with a temporary short-term solution where full assessment of the underlying issue will take a long time.

It may also be in the Procuring Authority's interests to assist the Project Company with a short-term solution where the Project Company's cash flow difficulties are caused by a third party or other external event. Recent examples include the events of 9/11, which had a major impact on global air traffic, as did the eruption of the Eyjafjallajökull volcano in Iceland. Escalating tensions in certain areas of the world or airspace embargos could also create difficulties.

In some jurisdictions, applicable laws governing the provision of state aid may limit the assistance that government can give to private entities. Where the Procuring Authority decides to provide some sort of financing, subsidy or other benefit to the project, it must be aware of the applicable laws and procurement rules. Appropriate legal advice should be sought on the issue.

#### EXAMPLE

##### Insurance proceeds delay

The Project Company may have short term cash flow issues due to delay in receiving insurance proceeds, which are available as a result of a natural disaster that has affected the project. Project Companies will typically have reserve accounts and/or liquidity facilities. However, they may still be inadequate. In these circumstances, the Procuring Authority can provide support by lending the Project Company money to get through short-term cash flow issues.

#### F. Seek legal advice in the case of insolvency or near insolvency of the Project Company

In case of insolvency, the Project Company will likely be exposed to insolvency processes and the impact of applicable rules and laws designed to protect the general body of creditors.

When faced with this situation, or a situation where the Project Company might be insolvent, detailed legal advice will be needed to understand the rights and obligations of all parties involved – the Procuring Authority, the Project Company and its directors and staff, the lenders, insolvency practitioners, the courts, the contractors and other relevant creditors.

Once the Project Company has become insolvent, the choices for the Procuring Authority become limited. Legal considerations are key to understanding the Procuring Authority's options when the Project Company enters into insolvency. Insolvency laws differ widely in different jurisdictions. For example, in the common law jurisdictions (such as the UK and Australia), directors' powers are immediately curtailed and an insolvency practitioner takes over the running of the company. The insolvency practitioner has the power to sell or restructure the company with little or no interference from the courts. In other civil jurisdictions, the processes can be heavily court-based, with sales and restructuring needing court approval and public auctions required. In any scenario, the Procuring Authority will be at the mercy of the insolvency practitioner and/or the courts. The lenders may also have additional step-in rights in these circumstances, which will add to the complexities.

#### G. Consider the potentially conflicting interests of the Project Company's directors

When a Project Company is in financial difficulty, it is important that directors' duties are well understood by the Procuring Authority, which will require specialised legal expertise. In most jurisdictions, directors' duties with respect to the Project Company are completely separate from those of the construction company or any other equity investor – they must act in the best interests of the Project Company and not be conflicted by any other interests (e.g. in an equity investor, sponsor or contractor).

This is a challenge in itself, as the directors are typically selected by the equity investors or sponsors and will feel loyalty to their employer,



which might not be aligned to the other stakeholders on the project. There are further challenges in several jurisdictions where directors can be held personally liable for certain company debts and, in some cases, have a fixed period to file for a company's insolvency when there is evidence of it being insolvent.

These circumstances, which are specific to the project finance arrangements affecting Project Companies, add additional layers of complexity that need to be understood by the Procuring Authority when working with directors of the Project Company. Additional challenges will arise when the Procuring Authority has representatives on the board of directors of the Project Company.

### 6.3 Summary data analysis

This section provides a summary of the data analysis related to insolvency. The full data analysis is available in Appendix A (Data Analysis).

The study confirmed that insolvency of the Project Company is relatively rare. The study identified six examples in which insolvency of the Project Company had occurred, in a sample size of 204 projects globally, including examples such as a power plant in Brazil and a trans-national rail link between France and Spain. Previous experience in Australia, the United Kingdom and other regions indicated that Project Company insolvency has been more common in PPPs that are based on user-pay arrangements (as opposed to government-pay, availability-based arrangements), where the revenue generated by the project was significantly below the revenue forecast. It should be noted that the study was limited to projects that reached financial close between 2005 and 2015 (inclusive), and only one project had completed its full operations period by the time of the study. The earliest projects have now reached a maximum of 13 years after financial close, and there may be further insolvencies in the future as the projects continue. This means that the prevalence figures here will be lower than they would be had the study taken place when the projects were completed.

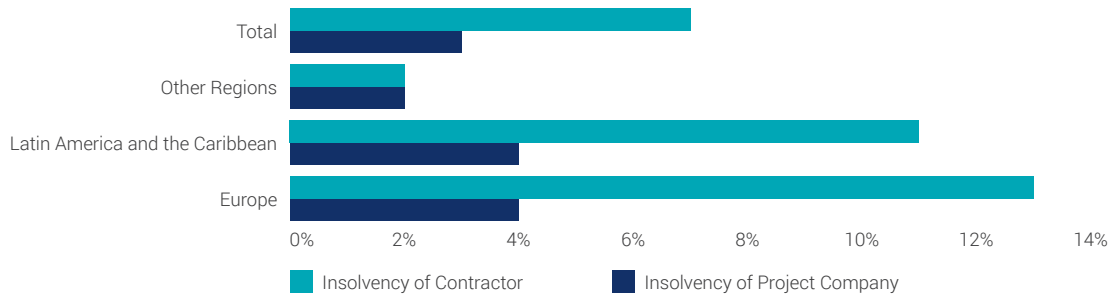
The study found that insolvency of the construction contractor is more frequent than that of a Project Company, albeit still not a common event. The study found 10 examples of contractor insolvency from a sample size of 204 projects in the UK, the Netherlands, Germany, Ukraine, South Africa and Brazil, and another in Mexico, where the contractor plans to file for bankruptcy while it is still liable for repairs on completed construction works. There was also one example of an equity investor in the Project Company going insolvent, and two examples of key suppliers to the project going insolvent.

The insolvency of a contractor will generally be managed by the Project Company without leading to insolvency of the Project Company itself, although the study identified an example in Brazil in which insolvency of the contractor was coupled with eventual insolvency of the Project Company.

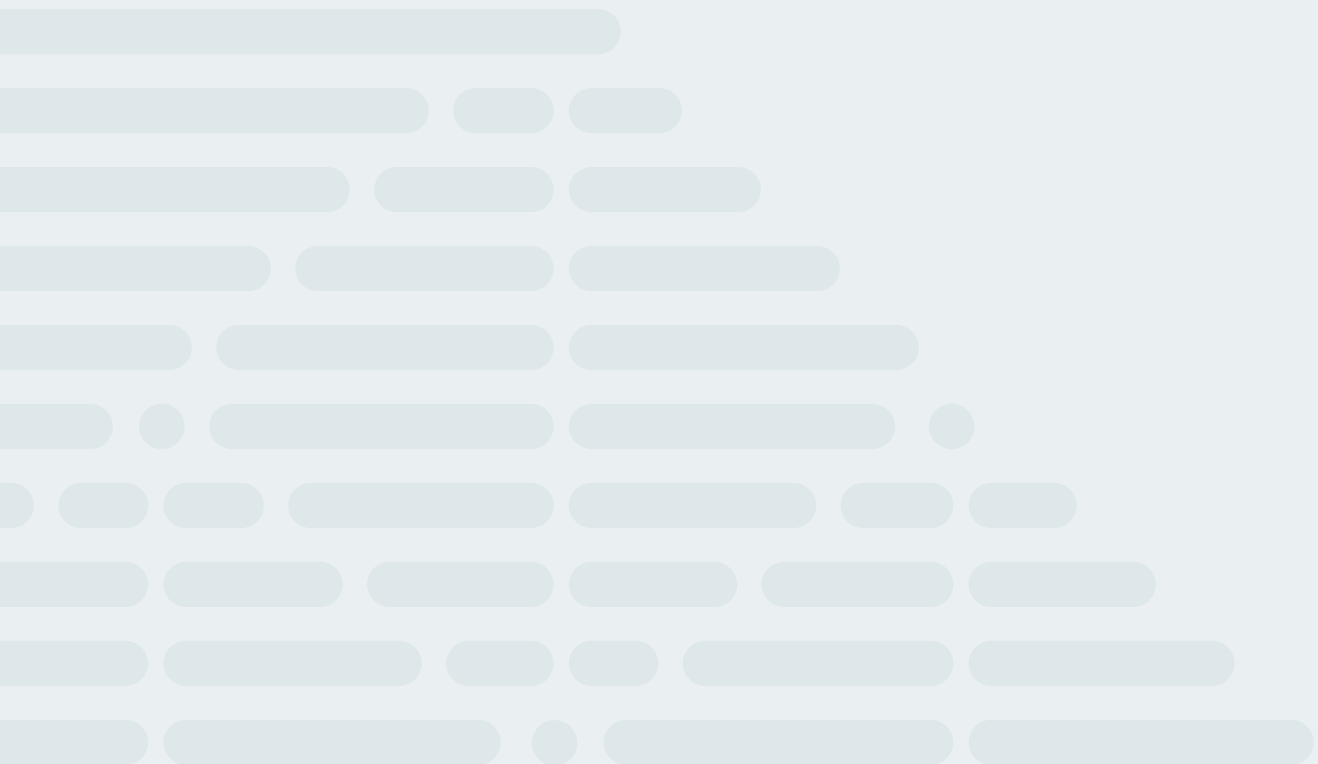
Some markets experienced challenges when equity investors' insolvencies were linked to corruption (e.g. Brazil and Spain), creating the need for a change of ownership and/or leading to increased risk of project termination.

The prevalence of insolvency events in the data collected is shown in Figure 1. It should be noted that the results for individual regions are based on sample sizes too small to enable any conclusions to be drawn on trends or any region specific issues.

**Figure 1: Insolvency events, based on 204 projects with data available**



# Default and termination



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## 7 Default and termination

Early termination refers to the termination of a PPP contract prior to the scheduled end of its contract duration. A PPP contract and the applicable laws will set out the circumstances which could trigger such a termination. An early termination event can typically be triggered by a serious breach of the provisions of a PPP contract by either the Project Company or the Procuring Authority.

An early termination event has the potential to trigger substantial compensation payments by the Procuring Authority to the Project Company. Such an event may leave a government with a half-completed asset, an asset that has no operator, or a reduction in the level of service being provided to end-users. A default can also indicate a failure in the contract management system.

A termination can also be triggered by the occurrence of an event that is not the fault of either party, such as termination due to a prolonged *force majeure* event rendering the parties unable to comply with the PPP contract. It is also common for the Procuring Authority to be entitled to terminate voluntarily at its own discretion.

It is important that PPP contracts are managed in such a way that the Procuring Authority is able to identify early indications of potential default and proactively mitigate the risk of termination, although it should be noted that it may not always be possible to prevent a default. Ultimately, the Project Company is responsible for complying with the PPP contract and there will be times, albeit rare, when the best decision the Procuring Authority can make in the circumstances is to terminate the PPP contract and take back the asset or re-tender the project.

The extent to which issues associated with PPP contract termination may be addressed within the legal framework of a particular jurisdiction (and the nature of the approaches commonly used to deal with these issues) will depend on the legal system the jurisdiction has adopted, the existence of specific laws (including specific PPP laws) and the maturity of the PPP market. This chapter aims to address some of those nuances from a practical contract management perspective, rather than a legal perspective and it does not attempt to address specific legal frameworks.

This chapter focuses on serious breaches of contract and defaults. Other less serious breaches are detailed in other chapters and sections of the reference tool. For example, claims are detailed in

Section 3.4 (Claims), and the Project Company's performance is detailed in Section 3.2 (Performance monitoring). Managing defaults and termination may lead to disputes, which are detailed in Chapter 5 (Disputes).

### CHAPTER STRUCTURE

This chapter provides a background to issues around default and termination of a PPP contract in Section 7.1 (Background) and provides guidance on managing defaults and termination. The key elements to successfully managing defaults and termination are summarised below and detailed in Section 7.2 (Guidance).

- A. Be aware of the rights of both parties and any agreed pre-termination procedures in the PPP contract and under the applicable laws
- B. Monitor potential Project Company defaults to manage termination risk at an early stage
- C. Consider termination and the full financial and non-financial implications of termination
- D. Seek legal advice before issuing a termination notice
- E. When terminating a PPP contract, plan early to ensure service provision is uninterrupted
- F. Where a substitute Project Company is required, consider all potential effects of the substitution
- G. Consider the Project Company's lenders including their potential step-in rights
- H. Consider step-in rights of the Procuring Authority
- I. Monitor and ensure compliance with the Procuring Authority's obligations under the PPP contract and the applicable laws
- J. Monitor the performance of key contractors, whose termination can present a significant risk to a project

Section 7.3 (Summary data analysis) provides a summary of data analysis with respect to default and termination in relation to PPP contracts.

## 7.1 Background

### Early termination

Some common grounds for early termination include default by the Project Company, default by the Procuring Authority, as well as the occurrence of other specific events. The terminology globally for default and termination is not always consistent. For the purposes of this reference tool, the term 'default' refers to a failure to comply with some aspect of the PPP contract which gives the other party the right to terminate the contract prior to its scheduled expiry.

The term 'breach of contract' refers to a failure to comply with some aspect of the PPP contract, though this failure may or may not entitle the other party to terminate the contract.

A PPP contract can be very precise in specifying the events that constitute a default and can be a closed, itemised list of events or an open-ended list with (e.g. a catch-all provision for any material breach). More generic default definitions can be more difficult to implement as they require extensive legal interpretation. What constitutes a default may also be governed by the applicable underlying law in addition to, or instead of, the PPP contract.

Project Company defaults may include performance breaches, breach of applicable safety or environmental standards, breach of insurance obligations, cross-breaches under the loan agreements with the Project Company's lenders (a breach of a term of a loan agreement that triggers a corresponding breach under the PPP contract) or insolvency of the Project Company. Insolvency is detailed in Chapter 6 (Insolvency).

A default will not typically lead to automatic termination. Instead, a default will give the party that is not in breach of the contract a right to terminate, which it may choose to exercise. In several jurisdictions, court intervention is required to make a termination effective.

Termination procedures can include escalation provisions in respect of less serious breaches of contract:

- Persistent minor breaches of contract may lead to a default
- The accumulation of payment deductions above a certain threshold may trigger a default
- The Project Company not completing construction by a certain final extended date for delivery of project that will trigger a Project

Company default (notwithstanding the construction was already delayed) (long stop date)

Procuring Authority defaults can include a failure to make a payment when due, or a failure to comply with some other obligation, such as providing access to land. There are several other examples of breaches and defaults which will depend on the type of project asset and the structure of the PPP.

As detailed in Section 7.2 (Guidance) many defaults will also entitle the party in default to a chance to remedy default before termination is available.

PPP contracts often also provide a list of specific events or causes, known as 'relief events' for which the Project Company is protected against default if these events, outside of the party's control, cause it to fail to be able to perform. For example, a *force majeure* event is typically included as a relief event.

A right to terminate will typically exist however if a *force majeure* event (or another 'relief event') continues for a prolonged period. What constitutes a prolonged period may be set out in the PPP contract. Often both the Procuring Authority and the Project Company will have a right to terminate the PPP contract after a prolonged *force majeure* event.

It is also common for PPP contracts to include a provision for the Procuring Authority to terminate the contract voluntarily, or for the right to voluntarily terminate to be qualified by a 'public interest' test. Similar principles may be addressed in a country's underlying legal system. In either scenario, the practical application of the termination will depend on the PPP contract and/or the underlying legal framework. The financial implications of voluntarily terminating the PPP contract are likely to be similar to the implications of a Procuring Authority default and so will be very costly for the Procuring Authority.

### Termination compensation

When a PPP contract is terminated, compensation may be payable by the Procuring Authority to the Project Company, even where the termination was the result of a Project Company default.

Terminations due to a Procuring Authority default or voluntary termination by the Procuring Authority are typically not favourable for the Procuring Authority, as the financial consequences are substantially worse than in the case of termination due to a Project Company default. Compensation will be based on the principle that the Procuring Authority should not unjustly benefit from the

termination when the termination has occurred due to the Procuring Authority failing to comply with its contractual obligations (e.g. by failing to provide the required land access).

This is justified by the fact that the project assets are transferred back to the Procuring Authority upon termination, and the principle that the Procuring Authority should not unjustly benefit from receiving an asset early, given that the private partners will have contributed capital towards the asset. In the case of termination due to the Project Company's breach of contract, the Project Company's equity investors will typically receive no compensation. Some compensation is, however, typically available to the Project Company's lenders where an asset is being handed back to the government.

Several methods can be used to determine the compensation payment, as set out in the *EPEC Guide on PPP Terminations*<sup>1</sup> and the 2017 version of the *World Bank Guidance on PPP Contractual Provisions*.<sup>2</sup>

This compensation may be provided for in the PPP contract, under the applicable laws or other agreement. In some jurisdictions, the courts will need to intervene to decide on the level of compensation payable.

## 7.2 Guidance

The following guidance outlines the key issues that should be considered when managing defaults and termination in relation to a PPP contract.

### **A. Be aware of the rights of both parties and any agreed pre-termination procedures in the PPP contract and under the applicable laws**

The rights of both parties to terminate the PPP contract need to be well understood by the Procuring Authority. Some examples of defaults are detailed in Section 7.1 (Background); ultimately, however, the Procuring Authority should be aware of the specific termination regime set out in the PPP contract or under the applicable laws so that it can adequately mitigate the risk of project termination.

Termination provisions typically include additional safeguards against termination, such as 'relief events', default cure procedures and other practical procedures (such as periodic reporting and the right for the Procuring Authority to increase monitoring in certain circumstances). These safeguards should be well understood and utilised.

It is typical to allow the defaulting party a chance to remedy breaches of the PPP contract which are capable of being remedied. Some defaults may not be capable of remedy and so will lead to an immediate right to terminate the PPP contract (e.g. insolvency of the Project Company).

For other breaches, the parties will generally be given an opportunity to rectify a default and continue performance under the PPP contract. For example, in the case of a default, a Project Company may be required to submit a remediation plan for the Procuring Authority to review and approve.

Where a remediation plan is required the focus should be on returning to a scenario where the project is providing the service and value for money forecast at financial close. The parties should consult on relevant issues, such as the likely duration of the default and the action to be taken to mitigate its impact. The Procuring Authority should be clear about its requirements and monitor the implementation of the remediation plan, which is typically done in conjunction with a third-party expert.

If the Procuring Authority is not reasonably satisfied that the steps taken to remedy the default as agreed in the remediation plan are adequate, the default will typically lead to a Procuring Authority termination right. Therefore, this process must be followed with the appropriate gravity. Step-by-step

<sup>1</sup> Available at <http://www.eib.org/epec/g2g/iv-project-implementation/41/416/index.htm>.

<sup>2</sup> Available at <https://ppp.worldbank.org/public-private-partnership/library/guidance-on-ppp-contractual-provisions-2017-edition/>.

plans and procedures should be agreed to allow for independent and concurrent verification of the phased implementation of remedial measures, which may be large and complex. Any remedial plans will also be scrutinised by the lenders, as termination of the PPP contract has the potential to impact the lenders substantially.

There is no long-term benefit in the Procuring Authority unreasonably penalising the Project Company or frustrating its ability to remedy the breach and continue performance of the PPP contract. In addition, such frustration may increase the risk of claims being made against the Procuring Authority. Claims are detailed in Section 3.5 (Claims).

### **B. Monitor potential Project Company defaults to manage termination risk at an early stage**

The first step in managing the risk of Project Company default is for the Procuring Authority to be sufficiently aware of – and to monitor the Project Company for – potential defaults. The Procuring Authority should also monitor its own potential defaults; that topic is detailed below under guidance H. 'Monitor and ensure compliance with the Procuring Authority's obligations under the PPP contract and under the applicable laws'.

Such monitoring can include reviewing performance and financial reports, site inspections, notice requirements for potential defaults and other early indicators. In all of these examples the Procuring Authority can receive early warning of potential defaults. A good understanding of the PPP contract and the underlying legal system will help the Procuring Authority to be well aware of the potential implications of any such early warnings. Guidance on performance monitoring is detailed in Section 3.2 (Performance monitoring) and guidance on monitoring financial performance is detailed in Chapter 6 (Insolvency).

The Procuring Authority should not be caught unaware by a Project Company default as long as it appropriately monitors the performance and financial indicators of the Project Company. The Procuring Authority should carry out continual assessments of the likelihood of termination throughout the project. Following the relevant procedures will generally ensure advance warning is received by the Procuring Authority before a default occurs.

### **C. Consider termination and the full financial and non-financial implications of termination**

Once the relevant termination procedures have been followed under the PPP contract or under the legal framework, if a remedial action is not possible or was not followed by the Project Company, the Procuring Authority may then have the right to terminate the PPP contract. This will require the Procuring Authority to provide a termination notice. Such a step is not a minor decision and the government should ensure it has considered the full implications of issuing the termination notice. A decision to issue a termination notice should only be taken after consideration of the financial and non-financial consequences of such an action.

There are several key issues that should be considered:

- The circumstances in which the PPP contract may be terminated ahead of its scheduled expiry
- The compensation payment (if any) that must be made upon termination (either by the Procuring Authority to the Project Company or vice versa)
- The condition of the project when it is 'handed back' following termination, detailed in Section 3.1 (Transitions)
- How to ensure service delivery remains uninterrupted during the termination process (detailed further below in this section)
- The reputational impacts of terminating a PPP contract, including the broader market implications, particularly where equity investors, lenders or contractors are adversely affected

Common termination compensation principles are detailed in Section 7.1 (Background). The compensation calculation may be complex to implement and the Procuring Authority should engage legal and financial advisors for this process. Because the two parties to the PPP contract have conflicting interests in the calculation of termination compensation, there is the potential for disputes to arise.

The Procuring Authority needs to carefully ensure that no unjust enrichment or other claim can be made against it where the project assets have been handed back and the Procuring Authority has not paid adequate compensation.

In a case of potential termination, the Procuring Authority may be required to go to the ministry of finance or central government to request



funds to finance a termination compensation payment (particularly in a scenario where it is not retendering the project). A termination shortly after completion of construction is likely to involve higher compensation amounts, because the Project Company's debt liabilities are typically the highest at this time. The bidders may have also required a government guarantee in order to enter into the PPP contract. In light of these challenges, the Procuring Authority should work with other relevant government agencies at an early stage to ensure there will be funds available to pay any termination compensation. Stakeholder engagement with other government agencies is detailed in Section 3.3 (Stakeholder management).

From a legal perspective, the Procuring Authority should be aware that when a Project Company default arises it may have to use the right to terminate or lose it. For example, in several common law jurisdictions, a right to terminate may have to be exercised or be lost; it cannot be held over the Project Company in perpetuity. The more time that elapses after a default arises, the more likely it is that a court will consider that the Procuring Authority has elected to continue with the contract.

#### EXAMPLE

#### Project Company difficulties in obtaining finance

The Project Company in one of the case studies in Brazil is facing financial difficulties with lower than expected toll revenue, and challenges in raising the required debt finance. The Procuring Authority is considering extending the period in which investment can be completed, as well as whether to take alternative steps such as:

- Terminating the PPP contract and retendering the project
- Replacing the equity investors with new equity investors capable of raising the required debt finance
- Requiring the existing equity investors to commit additional equity.

***For more information, see the Brazil Toll Road Case Study.***

#### D. Seek legal advice before issuing a termination notice

Given the complexities of PPP contracts and termination regimes, and the potential implications related to a termination, the Procuring Authority should seek legal advice confirming that it does have the right to terminate the PPP contract. Any termination compensation payable to the Project Company may also depend on whether the Procuring Authority has properly terminated the PPP contract.

Although examples of some of the procedures the Procuring Authority may need to follow from an operational point of view are set out in this section, the detailed requirements will be specific to a given PPP contract and the underlying legal framework and will need to be followed diligently.

Once a termination notice is issued by the Procuring Authority, it may not be capable of being recalled. In such circumstances - if it is found that the Procuring Authority did not have a valid right of termination - the PPP contract cannot be resurrected. Rather, there would be a potential claim against the Procuring Authority for unjust termination of the contract, and a starting point for termination compensation would be at a much higher level.

In several jurisdictions a termination notice must be preceded by a court proceeding, thus assuring the right of the Project Company to defend the termination. Given the complexities around PPP contracts and termination regimes and the potential implications of getting it wrong, it may still be advisable for the Procuring Authority to first seek a formal declaration that it has the right to terminate even in jurisdictions where a court proceeding is not strictly required.

There are additional restrictions in some jurisdictions which mean that a PPP contract cannot be terminated until the Procuring Authority takes over the project or a new Project Company is awarded a contract to take over the project. This stems from principles of continuity and adaptability of public services, under which public services must be guaranteed by the Procuring Authority and must not be threatened by action or inaction of the relevant private partner.

**EXAMPLE****Inability to meet specifications**

A specific case of default can occur where the Project Company has not been able to meet the specifications agreed in the PPP contract. This is important for projects where there is the use of a new technology which is vital to service provision but the performance of which is not yet fully known (e.g. a waste sorting facility on a waste project). Certain waste projects are encountering this challenge and there is a possibility that the Project Company will simply not be able to provide the service it is required to.

For example, if the winning bidder has 'oversold' its solution and created a specification that no one could obtain with current technology, then from a legal perspective, an impossibility to meet project specifications creates a difficult legal position. Existing standard form PPP contracts are not designed to address such a situation.

**E. When terminating a PPP contract, plan early to ensure service provision is uninterrupted**

A termination should be properly planned before the termination notice is delivered. Once the Procuring Authority has followed the required processes and obtained appropriate legal advice, the Procuring Authority needs to ensure that the implications of issuing the termination notice are clearly understood and the continuity of service for the users will be ensured, including engaging appropriate support to manage the process. Terminating a PPP contract has the potential to interrupt services and for the Procuring Authority to incur significant costs.

The Procuring Authority will have two options in case of a termination. The appropriate option should be decided well before the termination of the PPP contract such that the Procuring Authority can plan the transition and avoid the risk of suffering disruption or interruption in service delivery.

**1. Retendering**

The Procuring Authority is entitled to retender the project to a new Project Company, provided there is market appetite. The amount received from the winning bidder in the retendering may be applied towards paying termination compensation to the original Project Company.

The Procuring Authority will have to comply with the relevant procurement laws in that jurisdiction.

**2. No retendering**

Where the Procuring Authority decides not to retender the project and to take over the asset itself, it will typically still be required to appoint contractors to deliver the services required under the original PPP contract. The short term financial implication of this option will be more severe for the Procuring Authority as it will not receive an amount from the new Project Company.

The method of transferring the project assets, and whether to transfer them straight to the winning bidder (without being handed back to the Procuring Authority), should also be addressed at an early stage and there may be specific procedures required by the underlying legal system.

**EXAMPLE****Cross-border rail termination**

The PPP contract on a cross-border high speed rail project was terminated by the two national Procuring Authorities after the insolvency of the Project Company. A new operator was set up as a joint venture between the two national governments to continue the provision of the rail services.

**F. Where a substitute Project Company is required, consider all potential effects of the substitution**

Where the PPP contract is terminated and retendered, the choice of the substitute Project Company will require the Procuring Authority's approval.

The Procuring Authority must determine that the new Project Company is eligible, including that it complies with the PPP contract, any direct agreement, the applicable laws, regulations and standards; and that it has the requisite track record and reputation, technical expertise and financial resources. For example, the relevant procurement regulations that covered the procurement process prior to financial close may become relevant again, including being subject to retendering requirements.

A range of contingent liabilities will also typically exist for the Procuring Authority depending on what support and guarantee mechanisms are in place,

such as any government guarantees of payment obligations and the agreed risk allocation. These contingent liabilities must be considered, as they may be affected by the structure of the new Project Company (including the new Project Company's debt financing arrangements).

The Procuring Authority may also need to negotiate the duration of any services suspension while a transfer is taking place, the extent of a 'temporary amnesty' or 'wipe clean' mechanism related to any existing payment deductions to be given to the substitute Project Company, criteria for the replacement of any contractors, and a detailed remedial plan for resolving the overall issues.

#### **G. Consider the Project Company's lenders including their potential step-in right**

If termination becomes a real possibility, the Procuring Authority should communicate with lenders at an early stage, while being careful to comply with all applicable laws. For example, giving preferential treatment to a particular lender or class of creditors may breach insolvency laws.

Given the seriousness of a default and potential termination, lenders will closely monitor any event of default. This is broadly positive for the Procuring Authority, as the lenders are incentivised to intervene and help the project achieve its goals. Both the lenders and the Procuring Authority have strong drivers and incentives to want the service provided to the end-user to not deteriorate.

The research highlighted that sometimes the relationship between the Procuring Authority and the lenders was sometimes almost non-existent at the earlier stages of Project Company breaches of contract. The Procuring Authority may therefore not have much visibility of the lenders' involvement and actions at these stages.

In addition, it is common for the lenders to want a chance to step in to cure a Project Company breach of contract, as detailed in Chapter 6 (Insolvency). In these circumstances, there is typically a direct agreement entered into between the Procuring Authority, the Project Company and the lenders. Under this arrangement, the Procuring Authority will need to permit the lenders to take control of the PPP project under the step-in provisions, give the lenders a chance to remedy the breach, and not terminate the PPP contract until the lenders have had the chance to exercise their step-in rights. The direct agreement will typically set out a timeframe during which the lenders will have to cure the contract

breach and the Procuring Authority may be required to go through an additional round of remediation plans with the lenders.

Lender step-in is quite rare in practice because of the lenders' reluctance to take over the role of the Project Company and the complexities associated with the execution of these provisions. In Brazil, lenders are not entitled to step-in to the project to take control without a prior authorisation by the Procuring Authority. In the study no examples of lender step-in were encountered.

#### **H. Consider step-in rights of the Procuring Authority**

The Procuring Authority will typically have the right to step in and take action in order to undertake certain activities of the Project Company when the Project Company is failing to meet its obligations under the PPP contract. The reasons for step-in may be defined and are typically based on protecting the public interest. Procuring Authority step-in is not a common event. In the study only one clear example of Procuring Authority step-in was encountered, where an environmental incident occurred and the Procuring Authority stepped in to address the situation.

The Procuring Authority may have the right to step in to address a breach of contract before it becomes a Project Company default. This may affect any right to terminate the PPP contract that the Procuring Authority would otherwise have had.

The Procuring Authority should step in when it believes it needs to take action that requires an urgent response, such as where there is a serious risk to the health and safety of persons, property, or to the environment. It may also be required to step in to discharge a statutory duty. A Procuring Authority may decide to step in in situations where the Project Company has failed to meet its obligations. However, step-in can also occur where the Project Company is not in breach, but there is some other justifiable reason.

While step-in is clearly justified for certain events (e.g. where there is an overriding public service or national interest issue) there is an argument that for less serious issues the Procuring Authority should not have the right to step-in; it should apply the payment deductions and ultimately terminate for default if it is not satisfied with performance.

Where the Procuring Authority does decide to step in, it should ensure it provides sufficient notice of its step-in, as well as its step-out, should it decide that

its actions are no longer required. As the Procuring Authority will be taking over responsibility of certain functions, it must be aware of the capacity and expertise that will be required by these activities.

In some jurisdictions the approach is that even where a step-in is motivated by a Project Company default, the Project Company should be adequately compensated in terms of its payment, save only for the costs incurred in stepping in and rectifying the issue in question. The logic in this is that, if the Procuring Authority can both step in and apply payment deductions for non-performance, the Project Company is no longer in control of its own destiny and is at the mercy of the Procuring Authority acting swiftly and reasonably.

### **I. Monitor and ensure compliance with the Procuring Authority's obligations under the PPP contract and the applicable laws**

It is important for the Procuring Authority to ensure that it carefully manages any potential default of its own causing, and does not find itself in a situation where it could be assessed to have committed a default in any way. Termination due to a Procuring Authority default, due to the actions of another government agency or due to the Procuring Authority's voluntary election to terminate in the absence of default, are typically the most costly to the Procuring Authority.

The Procuring Authority must monitor and assess the situation as soon as it becomes aware of any potential default which would trigger a termination right for the Project Company. The Procuring Authority obligations under a PPP contract (with which failure to comply may lead to a default) are principally payment obligations and approval rights, rather than detailed performance obligations. However, in some instances where the Procuring Authority retains land acquisition or permitting risk, any failure to fulfil these obligations is likely to render the Project Company unable to meet its obligations and may subsequently lead to a default. The Procuring Authority may also have positive obligations to complete interfacing infrastructure.

The occurrence of a Procuring Authority default, whether notified by the Project Company or not, must trigger an alarm at the highest levels of the Procuring Authority together with immediate action to avoid termination. The Procuring Authority contract management team needs to be well aware of the agreed defaults (whether provided for in the PPP contract, under the applicable laws, or another agreement) such that it can act before the Project

Company serves the Procuring Authority with a termination notice.

Once the Project Company has served a default notice, the Procuring Authority will typically be given a cure period (that is, time in which to rectify the default, where possible) before contract termination can occur. This gives the Procuring Authority a final chance to avoid termination and its associated consequences.

All effort and resources should be applied to carry out whatever mitigation is required, although that mitigation should have started well before notice was served by the Project Company.

Another approach when a Procuring Authority default is inevitable is to work with the Project Company to make the arrangement work through a renegotiation process. Specific guidance on renegotiation is detailed in Chapter 4 (Renegotiation).

#### **EXAMPLE** **Interfacing works**

At the time of signing the PPP contract for the Intercity Express Programme project in the UK, the parties agreed that the Procuring Authority should retain the risk for delays caused by delays in Network Rail delivering interfacing works. Network Rail was classified as an arm's length public body in 2014 and is a separate body to the Procuring Authority. Delay and cost caused by Network Rail's delay in delivering interfacing electrification works did cause delay and cost to the Project Company. This demonstrates the impact third parties can have on an overall program of works.

***For more information, see the Intercity Express Programme Case Study.***

**EXAMPLE****Renegotiation**

The lenders on the Segarra Garrigues Irrigation System project in Spain exercised their rights to stop providing debt to the Project Company when the credit rating of the Procuring Authority dropped below a defined level. This default caused delays to the project and forced the regional government to renegotiate the financing for the project as well as the PPP contract.

*For more information, see the Segarra Garrigues Irrigation System Case Study.*

**J. Monitor the performance of key contractors, whose termination can present a significant risk to a project**

A default with respect to a key contractor under a relevant subcontract (such as a construction contractor default under a construction contract) can present a significant risk to the Procuring Authority. For example, it may lead to a Project Company default under the PPP contract. It is important for the Procuring Authority to monitor these risks, particularly during construction. Termination of a construction contract during construction significantly increases the risk of a project.

The Procuring Authority should identify the risk of potential key contractor default as early as possible and monitor how the risk evolves. The risk register should provide a continuous assessment of the termination risk in terms of its likelihood, severity and potential mitigation measures. For example, the Procuring Authority can monitor the construction contractor's publicly available financial indicators.

The Project Company will typically require key contractors to provide a security package (that is, performance guarantees and/or appropriate agreed compensation, etc.) to mitigate the implications of the termination of a key contract.

The PPP contract may stipulate, in the case of termination of a key contract, that the replacement contractor will be required to be reputable and financially robust, have the requisite resources and experience to complete the works, and willing to agree to a construction contract on similar terms to the original key contract. These attributes will be important to the Procuring Authority to minimise the risk of poor performance by the key contractor.

The Project Company will seek to replace the key contractor as soon as possible to reduce the risk of a default event under the PPP contract, and to minimise any financial implications. This could lead to a choice of replacement contractor that does not meet the requirements of the Procuring Authority, and this process should therefore be managed closely by the Procuring Authority. Working with the Project Company to agree to the appointment of a new contractor will typically be in the best interests of the project and the Procuring Authority.

The ease of replacing a contractor will depend on a number of factors, including:

- The complexity of the construction or operations – for large, complex projects it will be harder to find a suitable replacement
- The market in which the key contractor is required to operate and how many equivalent contractors in that market have capacity
- The stage during which the insolvency has occurred: During the early stages of the construction phase, it may be easier to find a replacement; Conversely, during the operations phase, it may be easier to find a replacement if operations have already been running for a period of time

If the relevant contract has been signed by a joint venture of contractors, tied under joint and several liability, then the other member(s) of the joint venture will take over the obligations of the insolvent contractor. This may make the situation easier, and there is the potential for this problem to be resolved with little input from the Procuring Authority.

contractor. This may make the situation easier, and there is the potential for this problem to be resolved with little input from the Procuring Authority.

#### EXAMPLE

### Construction long stop dates

It is common that a failure by the construction contractor to meet a long-stop date agreed in the construction contract between the Project Company and the construction contractor will constitute a construction contractor default under the construction contract and entitle the Project Company to terminate that construction contract. The long-stop date signifies the final date that the construction contractor can complete the construction works before a default occurs. The Project Company will aim to ensure a construction contract default will not immediately trigger a Project Company default under the PPP contract and will have a corresponding longer long-stop date under the PPP contract to provide time for the Project Company to replace the original construction contractor and complete the construction works before a Project Company default occurs.

Although the long-stop dates may be staggered in this way, the buffer periods may not be long enough to allow the Project Company to terminate and appoint a new contractor and complete the works before the Project Company default occurs. Instead, the buffer period provides useful breathing space for the Procuring Authority to open up dialogue with the Project Company to decide the approach to be taken that will be in the best interests of the project. Note, such discussions will require legal advice, particularly where termination rights are being waived.

#### EXAMPLE

### Insolvent construction contractor

One of the members of the construction joint venture on a project in Europe became insolvent. The remaining members of the joint venture took over the work, which the Procuring Authority monitored carefully.

## 7.3 Summary data analysis

This section provides a summary of the data analysis related to defaults and termination. The full data analysis is available in Appendix A (Data Analysis).

Early termination is not a common occurrence for PPPs. In the research, there were 13 examples of projects which were terminated for various reasons. There was only a single example where the Project Company terminated the PPP contract alone (the Alupar Small Hydro Plant project in Brazil). On two occasions both parties claim to have terminated the PPP contract: in the Manta Port project in Ecuador; and in the ABG Kandla Terminal project in India. In both cases the Procuring Authority argued that the Project Company had failed to invest in the works in which it was required to invest.

Where the Procuring Authority terminated the PPP contract, it was generally before the project was operational and after deciding that the project was not worth continuing. In the Prato-Signa Link project in Italy and the Vengalem Kuttipuram Highway project in India, termination occurred before construction had commenced (very early in the project) after delays to the start of construction. In the case of the Aqaba Port project in Jordan it was decided to expand existing facilities rather than build a new facility. For the Sao Paulo Metro Line project in Brazil the contract was terminated due to a failure by the Project Company to deliver construction on time and a new contract with another Project Company was signed soon after. The Active Perovo Solar Plant project in Crimea, Ukraine, was terminated after the area was annexed by Russia.

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# Glossary



## Glossary

The following definitions have been used for the purpose of the reference tool. Many of the definitions are based on those defined by the APMG Public-Private Partnerships Certification Program,<sup>1</sup> but have been adopted for the context in which they are being used.

### Applicable laws

The laws and legal frameworks that apply to a given PPP contract and project. The applicable laws may depend on the country and jurisdiction in which the project is located, the law of the PPP contract, or some other consideration.

### Arbitration

A form of alternative, non-judicial dispute resolution, where the parties select an impartial third party/panel subject to a written agreement. The exact procedure to be followed may be governed by a country's arbitration laws, by the arbitration rules prescribed by an international body or by another agreement. Arbitration is detailed in Chapter 5 (Disputes).

### Availability payment

Payment made over the lifetime of a PPP contract in return for the Project Company making the infrastructure available and in compliance with agreed performance standards. Non-compliance with the performance standards typically leads to payment deductions.

### Bankability

The ability of a project to be accepted by lenders as an investment under a project financed structure, or the ability of the project to raise a significant amount of debt financing by means of long-term loans under a project financed structure, due to the creditworthiness of the project in terms of sufficiency and reliability of future cash-flows.

### Brownfield project

From a technical/engineering perspective, investments in a project on a site that has previously been used for industrial purposes or has been the site of significant buildings.

From an investor perspective, project investment in an infrastructure asset that was existing before the time of procurement, or that was previously a greenfield project but is in operation at the time the investment is made.

### Case Study

The case studies developed as part of the development of the reference tool and which comprise Appendix B (Case Studies).

### Claim

An assertion, by one of the parties to a PPP contract, of a right to compensation and/or time relief from the other party, in accordance with the terms of the PPP contract.

### Civil law

Civil law is typically a codified system of law which is generally more prescriptive than a common law system. In a civil law system, the judge's role is typically greater and the parties to an agreement typically have less freedom to contract. The system of law becomes relevant to the reference tool as there are common differences in the way certain events are treated in civil law jurisdictions, noting also that every legal system is different.

### Common law

Common law is a system of law used in many jurisdictions, which is generally uncodified. Although common law typically also relies on several statutes, it is based also on precedent set by past court decisions. Parties under a common law system typically have more freedom to contract. The system of law becomes relevant to the reference tool as there are common differences in the way certain events are treated in common law jurisdictions, noting also that every legal system is different.

### Construction contract

An agreement entered into between a principal and a contractor for construction works. In the context of a PPP, the agreement will typically be entered into between the Project Company and the construction contractor for the design and construction of the PPP project assets. Also often commonly known as a 'design & build (D&B) contract', 'design and construction (D&C) contract', or 'Engineering-Procurement-Construction (EPC) contract'.

### Construction contractor

The party that is responsible for the construction works under a construction contract. In the context of a PPP, it is typically the party that is responsible for the design and construction of the PPP project assets. Often also referred to as a "Design and Construction (D&C) Contractor" or "Engineering-Procurement-Construction (EPC) Contractor".

### Construction phase

The period from financial close to the completion of testing and commissioning during which the construction works are completed. On brownfield projects, this includes work such as rehabilitation to existing assets and so may run concurrently with the operations phase. The term 'construction' is also used in the reference tool to describe this phase.

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<sup>1</sup> Available at <https://ppp-certification.com/>.



**Contingent liabilities**

Obligations/liabilities triggered by a discrete but uncertain future event. This reference tool applies this term especially for those liabilities that affect the government under a PPP contract. The types of contingent liabilities that are relevant to governments in relation to PPP contracts are payment obligations under a PPP contract that are subject to the occurrence of certain events, such as termination.

**Contract management manual**

A knowledge management tool for succession planning and transfer of knowledge through the team. It may also provide a guide which highlights the most immediate and critical actions that must be taken by the contract manager when administering the contract.

**Contractor**

A party that is agreeing to perform services for another party under a contract. Common examples in the context of a PPP are construction contractors and operations contractors, though other contractors may be relevant, such as a supply contractor for the supply of a specific part of the project assets or a fuel supply contract.

**Cure period**

A period of time allowed for a party to remedy a default under a contract. For example, the Project Company may have cure periods under a PPP contract to remedy its default under that contract, and the construction contractor may have cure periods under a construction contract to remedy its default under that contract.

**Demand risk**

The risk that actual demand (that is, usage or patronage of an infrastructure project) does not meet the demand forecast at financial close.

**Dispute**

A formal disagreement between the parties to a PPP contract, which is subject to the dispute resolution provisions of that contract.

**Environmental Impact Assessment (EIA)**

The formal process used to predict the environmental consequences, positive or negative, of a project. This is usually carried out by an agency or authority other than the Procuring Authority, and may result in conditions being requested or necessary to meet in the design and construction of the project.

**Equity**

The portion of the financing provided in the form of share capital or other debt that is subordinated to the senior debt provided by the lenders of the Project Company.

**Equity Investors**

Investors who finance the equity portion of a Project Company's financing, typically as share capital or subordinated debt. Another term commonly used is shareholders.

**Financial close**

The point in time at the end of the procurement phase where the PPP contract has been signed, any conditions precedent for financing are met and financing is in place so that the Project Company can commence construction.

**Financing**

The source of money required up front to meet the costs of the project. Financing is typically sourced by the government through surpluses or government borrowing for traditional infrastructure procurement, or by a Project Company raising debt and equity finance for PPPs, and can be a combination of both.

**Force majeure**

The phrase force majeure typically refers to events that are outside of the control of the parties, could not have been anticipated and make it impossible for a party to comply with the PPP contract. Force majeure provisions are common in PPPs and what constitutes a force majeure event may be set out in the relevant PPP contract or in the relevant law (particularly in civil law jurisdictions).

**Funding**

The source of money required to meet payment obligations. In a PPP context, it refers to the source of money over the long term to pay the Project Company for the capital investments and operating, financing and maintenance costs of the project. Funding is typically sourced from taxes (in government-pays PPPs), or from user charges (in user-pays PPPs), or a combination of both.

**Government**

Refers to federal, state, and/or local/municipal government and their respective line agencies and/or ministries.

**Government-pays PPP**

Broadly refers to a PPP in which the revenue of the Project Company is in the form of budgetary payments made by the Procuring Authority, usually linked to performance or use, although this can be an overly simplified definition.

**Greenfield projects**

From an engineering point of view, these are projects to be developed on sites that have not had previous industrial use or significant buildings. From an investor perspective, they are project investments that relate to a PPP that has recently been awarded or is under construction, and where there are significant new structures or very significant upgrades of existing infrastructures.

**Handback**

The transfer of the project assets, and responsibility for those assets, to the government or to a new Project Company or new operator upon the termination or expiry of the PPP contract.

**Independent certifier**

An independent third-party normally appointed by both the Project Company and the Procuring Authority, whose remit is to certify that the construction works comply with the specifications and standards set out in the PPP contract.

**Insolvency**

Insolvency is the inability of a company to meet its financial obligations as and when they become due.

**Key Performance Indicators (KPIs)**

KPIs are designed to allow the Procuring Authority to measure the level and quality of service that is being provided. They are a collection of measurable indicators of performance chosen to reflect how well the Project Company is providing the service that the project was designed to deliver. KPIs are detailed in Section 3.2 (Performance monitoring).

**Lenders**

Institutions that provide lending or debt capital to the project: mainly banks through loans and institutional investors through project bonds.

**Long stop date**

A final date set by the Procuring Authority by which services must commence. Non-commencement of services by this date may lead to termination of the PPP contract. Also referred to as a sunset date.

**Net present value**

The discounted value of an investment's cash inflows minus the discounted value of its cash outflows. To be adequately profitable, an investment should have a net present value greater than zero. Often also referred to by its acronym, NPV.

**Operations contract**

An agreement entered into between a principal and a contractor for operations and maintenance (O&M) works. In the context of a PPP, an agreement entered into between the Project Company and the operations and maintenance contractor for the operations and maintenance (O&M) of the PPP project assets. It also includes a "maintenance contract" and a "facilities management contract".

**Operations contractor**

The party that is responsible for the operations and maintenance works under an operations contract. In the context of a PPP, it is typically the party that is responsible for the operations and maintenance of the PPP project assets, as well as for providing all of the material, labour, equipment (such as engineering vehicles and tools), and services necessary for the operations and maintenance of the project. Also commonly known as the "operations & maintenance contractor".

**Operations phase**

The period from the end of testing and commissioning to the end of the term of the PPP contract, during which the Project Company is responsible for the maintenance, and in many cases the operation, of the infrastructure. It is also referred to as the maintenance phase when there are no operations involved, or the operations and maintenance phase where both are required.

**Output specifications**

The design and construction and service requirements under a PPP that are typically defined on the basis of outputs rather than inputs or prescriptive activities.

**Owners representative**

A third party individual or company that is hired by the Procuring Authority to represent its interest as the owner on site, either in the construction phase, operations phase, or both. For example, during construction owners representative performs on-site inspections, facilitates communication between the Procuring Authority and Project Company and verifies compliance with the output specifications and general standards.

**Performance monitoring system**

A system typically comprising a set of Key Performance Indicators and procedures agreed upon in the PPP contract, primarily for the purpose of determining whether the Project Company is delivering the contracted services according to the service specifications.

**PPP contract**

A long-term contract between a Procuring Authority (government or other public agency), and a Project Company (private partner or commercial partner) for the development and/or management of a public asset or service, where the Project Company bears significant risk and management responsibility throughout the life of the contract, and where remuneration is significantly linked to performance and/or the demand or use of the asset or service. It covers both greenfield and brownfield projects. This definition is deliberately broad. It includes projects where demand risk is passed entirely on to the private partner (also known as 'user-pay' projects or concessions), and projects that are based on availability payments by government irrespective of demand (availability-based projects). It also includes, for example, power purchase agreements where a government entity is the purchaser of the power.

**PPP unit**

A government organization that supports contracting authorities in implementing PPP projects. They are often part of or attached to one of the central ministries, such as the ministry of finance. PPP units are detailed in Chapter 2 (Contract management team set-up and training).

**Project Company**

The company that acts as the counterparty of the Procuring Authority in a PPP. Also sometimes referred to as “special purpose vehicle” (SPV). It is ordinarily a private sector entity however for the purposes of this reference tool, the definition of Project Company may include state-owned enterprises and project companies in which the Procuring Authority may be an equity investor.

**Procuring Authority**

The unit/body/department within a government that is tendering and contracting the project; the public counterpart in the PPP contract. This is usually the same unit or body that promotes the project (the public promoter), for example, the ministry or department of transportation, the ministry of finance, and so on. It also includes “contracting authority” “public party”, “public partner”, “public authority”, and “grantor.”

**Rebalancing**

A mechanism stipulated in many PPP contracts in Latin America which allows for the tariff or availability payment to be changed with the intention of restoring the economic equilibrium of the PPP contract. This adjustment can be made as a response to a PPP contract renegotiation, or as a response to external events such as a change in the rate of inflation. Rebalancing is detailed in Chapter 4 (Renegotiation).

**Right of Way**

A right to a corridor of land typically required in linear infrastructure projects, such as roads or transmission lines.

**Risk**

An uncertain event which, if it occurs, may cause actual project outcomes to differ from expected outcomes.

**Risk allocation**

The allocation of the consequences of each risk to one of the parties in the contract, or agreeing to deal with the risk through a specified mechanism which may involve sharing the risk. For guidance on typical risk allocation arrangements between the Procuring Authority and the Project Company, see the GI Hub’s PPP Risk Allocation Tool.<sup>2</sup>

**Step-in**

The government’s or the lender’s option to assume the contractual responsibilities of the Project Company through managing their contract in cases when the Project Company is not meeting its obligations under such a contract. Procuring Authority step-in is detailed in Chapter 6 (Insolvency).

**Subcontract**

A contract between the Project Company and a third party, providing for performance of part of the Project Company’s obligations under the PPP contract. Common examples are construction contracts and operations contracts, as well as specialist subcontracts sitting under the construction contractor.

**Substantial completion**

The stage at which construction is sufficiently progressed, in accordance with the PPP contract, such that the project facilities can be utilised for their intended use and operations can begin. Substantial completion is typically certified by both the Procuring Authority and Project Company and the independent certifier (if appointed) once the compliance with contractually defined conditions can be verified.

**Termination payment**

A payment made by the government under the PPP contract, following termination of the PPP contract. A termination payment can also be payable to the government in limited circumstances.

**Testing and commissioning**

The process of testing that occurs to signify the completion of the construction of a project to ensure that the Project Company has met all of the preconditions necessary for the project to commence operations, as well as demonstrated that the infrastructure can deliver the services in accordance with the output specifications.

**Unitary payment**

A term for government payments common under a government-pays PPP contract.

**User-pays PPP**

Broadly refers to a PPP project in which the revenues for the Project Company are based on user-payments (for example, tolls for a road), though this can be an overly simplified definition.

**Value for money**

Broadly speaking, to obtain or receive Value for Money (VfM) means that the money spent is worthy, that is, the value of the product or service received equals or exceeds the amount spent. The decision to spend (or invest in this context) is a wise decision as it is creating net value for the payer.

<sup>2</sup> Available at <http://ppp-risk.gihub.org>.

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# Methodology



## Methodology

### A. Approach and methodology

The reference tool has been designed to be based on real-life experience of PPP contract management from around the world, based on both extensive data collection as well as interviews with key stakeholders on the selected case studies. It should be used in combination with the selected case studies and data analytics from global desktop research.

In order to capture data and lessons learned representing the full array of PPP projects across different sectors and regions, the following high-level approach was adopted for developing the reference tool:

1. An overall database of PPP projects was identified, which met the study criteria, defined as:
  - A bespoke definition of PPP, as per the Glossary
  - Global remit comprising 3,736 projects across 137 countries
  - Economic infrastructure, covering transport, power, water and waste
  - Financial close was achieved between 2005 and 2015 (inclusive)
2. A study sample of approximately 250 randomly selected PPP projects was identified to reflect the PPP definition adopted, sector, region and financial close date distribution of the overall database of PPPs.
3. Data collection on the study sample of 250 PPPs was performed according to a template, designed to seek data on the prevalence of contract management issues. The results of the data collection exercise are reflected in Appendix A (Data analysis).
4. The existing literature on contract management of PPPs was examined to develop an understanding of what guidance was currently available, including where there were gaps.
5. Using the findings from the data collection, 25 projects were selected out of the 250 PPPs and stakeholder interviews were completed to gain further insight into key events that occurred on the projects and to extract leading practices and lessons learned on how those key events were managed in order to develop the 'Case Studies'. Appendix B (Case Studies) comprises the published Case Studies. Further interviews were carried out with industry experts and PPP units to gain a broader understanding of the common challenges, such as disputes and renegotiations of PPP contracts.

6. Once a substantial number of Case Studies had been completed and a draft version of the reference tool had been developed, three regional workshops were held, to share the preliminary findings and to gain further insight from PPP practitioners.

The sections below provide greater detail on how the reference tool was developed using the steps summarised above.

The study has some limitations due to the approach adopted and challenges faced during data collection and stakeholder interviews. The limitations are detailed in Section A (Limitations).

### B. Data collection on 250 projects

The objective of the data collection on 250 projects was to ensure:

- Robust identification of issues faced on the projects as part of the Procuring Authority team set up and stakeholder management, routine contract management and non-routine contract management.
- A global representation of sector and region-specific trends and issues faced during PPP contract management.
- The prevalence and timing of issues faced during contract management.
- An insight into key events that had a notable impact on the project and underlying causes of these events.
- An insight into overall performance of the projects.

To meet the objectives of the data collection, 250 projects had to be randomly selected from an overall database containing all relevant PPP projects. This process adopted for the data collection exercise is set out below.

#### 1. PPPs were downloaded from online databases

The online sources used were the World Bank Private Participation in Infrastructure Database<sup>1</sup>, as well as proprietary databases from Inframation News<sup>2</sup>, IJGlobal<sup>3</sup> and InfraPPP<sup>4</sup>.

#### 2. The projects were cleansed and compiled into a Master Database

- A. All PPPs were combined into a single database (the 'Master Database').
- B. Each project was assigned a unique ID. This was

<sup>1</sup> <https://ppi.worldbank.org>

<sup>2</sup> <https://inframationgroup.com>

<sup>3</sup> <https://ijglobal.com>

<sup>4</sup> <http://www.infrappworld.com>

done by removing duplicates, removing additional sections of the same PPP (e.g. project extensions), and removing secondary market financial transactions associated with the project. Where clear, projects from the databases which didn't fit our definition of a PPP were also removed. This cleansing was necessary to ensure the sample wasn't skewed when the Master Database was used to select the random sample, as each project had an equal chance of forming part of the study.

- C. Projects with a transaction value of less than USD 20 million were removed. These were agreed to be too small for the purpose of the study.
- D. The projects were sorted by region, sector and financial close period. The breakdown categories were as follows:

**Region:** UK and Europe, North America, Latin America and the Caribbean, East Asia (including China), South and Central Asia, South-East Asia and the Pacific, Australia and New Zealand, Middle East and North Africa, and Sub-Saharan Africa)

**Sector:** Transport (including rail, roads, airports and ports), energy (including renewable and non-renewable generation, and distribution), water (including supply and distribution) and waste (including solid waste, waste to energy and waste water treatment)

**Financial close (be period):** Period 1 (January 2005 to September 2007), Period 2 (October 2007 to June 2010), Period 3 (July 2010 to March 2013) and Period 4 (April 2013 to December 2015)

The breakdowns of the overall population of relevant PPPs by Region, Sector, and Financial Close period are displayed in Appendix A (Data analysis).

**3. A random sample of 250 PPPs was chosen, as representative of the Master Database**

- A. It was decided to select a sample of 275 projects. This allowed for some leeway (i.e. 10% surplus) when collecting the data in case it proved difficult to gather information on some projects.
- B. The percentage breakdown in the Master Database for each region, sector and financial close period was recorded.
- C. A script in Excel was created which carried out the following:
  - i. Randomly selected 275 projects from the Master Database, creating a 'Target Database'.

- ii. The percentage breakdown for that Target Database was calculated for each region, sector and financial close period.
- iii. The differences between the Master Database percentage breakdowns and the Target Database percentage breakdowns were calculated and the differences added together. For example, the Master Database had 17.2% of eligible projects in Europe and 3.4% of eligible projects in North America. A sample with 15% and 3% of projects in those regions respectively would have a difference of 2.2 + 0.4 + ... = 2.6 + ... for these characteristics.
- iv. The process was repeated 10,000 times, and the Target Database with the smallest difference to the Master Database was selected.

Once this process was completed (including removing the additional 25 projects, as described below), the result comprised the 'Sample Database'. The composition of the Sample Database is shown below.

*Table 1: Composition of the Sample Database by Region*

Region	Percentage of projects	Number of projects
Australia and New Zealand	1.6%	4
East Asia	12.7%	32
Europe	18.3%	46
Latin America & Caribbean	23.5%	59
Middle East, North Africa	6.0%	15
North America	4.4%	11
South East Asia	7.6%	19
South Asia	20.7%	52
Sub-Saharan Africa	5.2%	13
<b>Total</b>		<b>250</b>

**Table 2: Composition of Sample Database by Sector and Financial Close period**

Sector	Percentage of projects	Number of projects
Transport	46.0%	115
Energy	42.0%	105
Water	7.6%	19
Waste	4.4%	11
<b>Total</b>		<b>250</b>

Financial Close (by Period)	Percentage of projects	Number of projects
Period 1	19.6%	49
Period 2	21.2%	53
Period 3	32.8%	82
Period 4	26.4%	66
<b>Total</b>		<b>250</b>

#### 4. A template for data collection developed

Once the Sample Database was selected, a data collection template was developed to capture the topics of interest for the data collection exercise. The template was structured to collect information on key features related to the Procuring Authority team set-up, main challenges associated with routine contract management (e.g. claims, changes, performance monitoring) and major, non-routine contract management events faced on the project in the Sample Database. The data collection template was also designed to capture basic project information, such as location, value, key parties, basic financing structure, revenue source, etc.

The key sections of the data collection templates are set out below.

##### Project ID

As well as being used to identify each project, this section included information such as the location, key parties, value, revenue source, etc.

##### Major Events

This section investigated events such as insolvency, termination and force majeure. The prevalence of these events informed the development of the reference tool itself.

##### Renegotiation

The prevalence and impact of renegotiations is a key theme of the reference tool. For this reason, this section of the template went into more detail

than simply whether the renegotiation occurred, and included questions including why it occurred and what the outcome was.

##### Disputes

The prevalence, management and outcome of disputes is also an important factor in project success, and so this section also went into further detail. Additionally, the process for handling disputes is referred to across the literature as a particular success factor.

##### Contract Management

How to set up the Procuring Authority contract management team is another key theme of the reference tool. Many documents in the literature referred to examples of leading practice in contract management, such as the use of a contract management manual.

##### Project Success

The ultimate aim of the reference tool is to provide guidance that helps to improve the delivery of PPP projects. It is therefore important to investigate elements of project success, including cost and time overruns.

##### Ownership and Financing

Changes in ownership and other secondary market transactions can give additional information.

#### 5. Desktop research was conducted using publicly available information on projects in the Sample Database

The desktop research was conducted by Turner & Townsend offices around the world, using publicly available sources as well as local knowledge. The research was conducted to populate the data collection templates with as much information as possible.

#### 6. Stakeholder interviews were conducted where possible to complete the data collection

As much of the data was difficult to gather from publicly available sources, stakeholders on the projects were contacted and interviewed. The stakeholders came from either the Procuring Authority, the Project Company or in certain instances the central PPP unit or lenders and Procuring Authority's advisors.

#### 7. The Sample Database was reduced in size to 250 by removing 25 projects

25 projects for which it had proven difficult to gather data were selected to be discarded from the Sample Database. This was done carefully to ensure the proportion of projects in each region and sector did not change after these projects were removed.

### C. Development of Case Studies on 25 projects

The objective for developing Case Studies on 25 projects was to demonstrate real life examples of lessons learned from PPP contract management as well as leading practices. As Case Studies were seeking a deeper insight into how the main challenges and key events faced on the project were managed, the approach adopted focused on conducting face-to-face or phone structured interviews with key stakeholders from the Procuring Authority and Project Company. In some instances, the structured interviews were also been conducted with PPP units, lenders and Procuring Authority advisors.

The majority of the 25 Case Studies are shared in Appendix B (Case Studies). Because of the sensitivities of ongoing projects (e.g. some may be experiencing disputes), not all Case Studies are currently available for publishing in full detail. For this reason, a selection of the Case Studies has been anonymised or omitted entirely. However, the fundamental lessons learned from all 25 Case Studies have been incorporated into the reference tool.

The task of developing the Case Studies was undertaken as detailed below.

#### 1. A selection of 25 projects were selected for the Case Studies

The selection process was dependant on two factors: the nature of the challenges identified in the data gathering exercise on the Sample Database, and the willingness of the stakeholders to participate in the research.

A list of projects of interest was compiled and assessed for possibility of gaining access to the relevant people in Procuring Authorities, Project Companies, and other key stakeholders. The initial list contained more than 25 projects in order to mitigate the risk of lack of willingness to participate, or lack of access to the relevant stakeholders.

Contacts within the Global Infrastructure Hub's and Turner & Townsend's global networks were identified and engaged to introduce the research and request input into the selected Case Studies. Some stakeholders responded by suggesting other projects, or were not willing to participate in the research, and the Case Study selection therefore evolved and changed throughout the research. It became clear that the greatest challenge was securing participation of the stakeholders. Most of the Case Studies were drafted and developed with the help of one or two stakeholders. Only a small number of Case Studies had the full support of the Procuring Authority, the Project Company, and the lenders.

#### 2. A questionnaire was created to be answered by the stakeholders

A questionnaire was drafted based on the challenges identified through the data gathering exercise on the Sample Database. The questionnaire, directed to the stakeholders, was structured to facilitate the understanding of challenges found during the data collection, the existence of other challenges not initially identified and to go into detail on how those challenges were managed in practice.

Different versions of the questionnaire were tailored to stakeholders to draw comparisons between their experiences on the same project. The questionnaire was translated where the stakeholders preferred communication in their native language.

The questionnaire was used both as a guide through the interview and a preparation document for the stakeholders. Once an interview was scheduled with a stakeholder, a copy of the questionnaire was sent to them to have the information ready by the time of the interview. This proactive approach significantly reduced the time needed for each interview as the interviewees were well prepared.

#### 3. Structured interviews were carried out with the Procuring Authority, the Project Company and other stakeholders, as appropriate

Interviewing both parties to the PPP contract was important, as it provided the balance and range of views required for the Case Studies. Where possible, lenders and other key stakeholders were also interviewed.

The interviews were conducted mostly through conference calls. Where possible, some interviews were conducted through physical meetings in either Turner & Townsend's regional offices or the relevant stakeholder's own facilities. It was evident that face to face interaction was essential in some regions, such as South America, India, and China. The majority of interviews were conducted in English, with interviews also conducted in Mandarin, Arabic, Spanish and Portuguese as appropriate.

In some cases, where needed, the interviews were undertaken in two or more sittings due to the level of information the stakeholders were providing, or to accommodate the availability of the participants.

The interviews for the Case Studies provided real life experience on many of the challenges commonly faced on PPP projects. However, some events are rare by nature and are not faced commonly on PPP projects. Consequently, regardless of the large sample, real life examples of some challenges were not found (e.g. lender step-in).



To help address the lack of examples and make the guidance in the reference tool as broadly applicable as possible, a range of interviews were conducted with experts in the industry. When engaged, the majority of the industry experts around the world responded to our request with enthusiasm. The interviewed experts included lawyers, project managers, insurers and lenders, experienced dispute and dispute resolution consultants, as well as financial advisors. A substantial legal review of a draft version of the reference tool was also undertaken to pick up nuances in different legal jurisdictions. The legal review included input from legal practitioners with experience in Europe (the UK, a common law country, and civil law countries), Asia, Latin America, Africa and Australia.

#### **D. Consultative workshops**

Once a substantial number of Case Studies had been completed and a draft version of the reference tool had been developed, three regional workshops were held, to share the preliminary findings and to gain further insight from PPP practitioners into their challenges during PPP contract management. The first workshop was in Bogota, Colombia, the second in Singapore, and the third in Rome, Italy, with attendees from regional Procuring Authorities, private sector organisations as well as multilateral development banks. Feedback and additional lessons learned from the workshops were then incorporated into the final reference tool.

#### **E. Limitations**

##### **Limitations to the data collection process**

There were a number of limitations to the data collection process, which will have affected the data analytics results. These were mitigated to the greatest extent possible, however could not be removed entirely. The limitations to the data collection process are set out below.

- Desktop research – publicly available information. The availability of information varied significantly between regions. Procuring Authorities in some regions make project information easily available online, including the PPP contracts themselves, while multi-national bodies such as development banks publish information on the projects they are involved with. However, this is often not the case, especially in developing markets such as India or China, and more so in earlier years. This challenge was to some extent overcome by contacting project stakeholders, but this was also not always possible. The results for each metric are therefore based only on the projects for which firm data was available.
- Desktop research – accuracy of information. In some cases, the accuracy of the information collected was

clear. For example, because it came from the original PPP contract. In other cases it was less clear, with news articles referring to events on a project but limited further information available. This was addressed as far as possible by cross-checking data against other sources as well as with project stakeholders.

- Availability of project stakeholders. It was not always possible to contact stakeholders on the projects for which data was being collected. Where it was possible to make contact with stakeholders, not all of them were willing to participate in the research. In several instances, key stakeholders with the relevant knowledge had left the project, which added to the challenges of data collection.
- Commercial sensitivity. Certain information was commercially sensitive, in particular relating to cost overruns and variations, as well as contract renegotiation and disputes. For this reason, even where access to project stakeholders was available, they were often unwilling to share certain information. In addition, a number of stakeholders (in particular on the Project Company side) were not willing to engage in any interviews due to confidentiality restrictions in the relevant PPP contract. In general, lenders were not willing to communicate any project specific information due to the confidentiality restrictions in their agreements with the Project Company.
- Transparency and availability of data presents a challenge in some regions. In regions where no reliable project data could be collected and particular challenges were faced when identifying the relevant stakeholders and engaging with them, the overall data collection was reduced to a smaller number of projects than identified in the Sample Database.

##### **Statistical analysis**

Given the number of projects in the Sample Database, it is possible to draw conclusions to a certain level of confidence. Confidence intervals are used to understand how well a sample represents the whole population, in this case how well the Sample Database of 250 projects represents the Master Database. A confidence level describes how likely it is that a characteristic falls within a particular confidence interval. For example, a 95% confidence level indicates that the characteristic being investigated will fall within that interval in 19 out of 20 instances. For some specific examples:

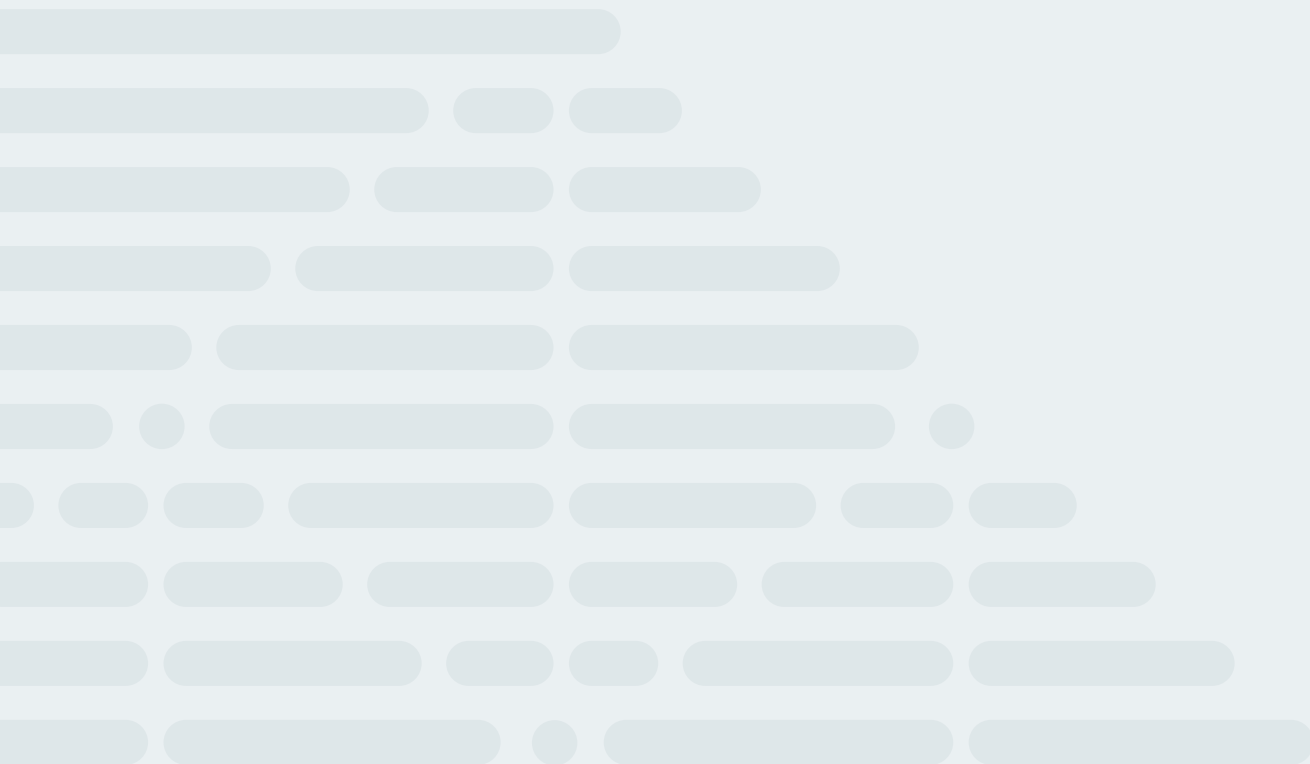
- With the entire Sample Database of 250 projects, the confidence interval will be approximately  $\pm 5\%$  at a confidence level of 95% (calculation not shown here). For example, this means that if 30% of projects are found to have experienced renegotiation in the Sample Database,

it can be said with 95% certainty that between 25% and 35% experienced renegotiation for the entire population of 3736 PPP projects.

- For smaller subsectors of the Sample Database, this confidence interval increases. There are 126 transport projects in the sample, which increases the interval to approximately  $\pm 8\%$ . For example, if 30% of transport projects are found to have experienced renegotiation, it can be said with 95% certainty that between 22% and 38% experienced renegotiation out of the entire population of 3736 PPP projects. The size of this interval shows that it is not reasonable to draw strong conclusions from small sample sizes.

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# Relevant Literature



## Relevant Literature

**APMG International:** *"The PPP Guide"*. The guide is intended to assist PPP professionals in learning best practices in PPP development and management. It is referred to as the book of knowledge on PPPs. The guide is aimed to help PPP practitioners achieve the title "Certified PPP Professional" under the auspices of the APMG PPP Certification Program.

**APMG International:** *"Glossary"*. This is a glossary of terms that are commonly used in PPP projects. Many of the definitions used in this reference tool come originally from the APMG glossary.

**Department of Economic Affairs, Ministry of Finance of India:** *"Guidelines for Post-Award Contract Management for PPP Concessions"*. The PPP Cell under the Infrastructure Division drafted this comprehensive post-award contract management toolkit to assist contract manager in regional governments. The guide provides detailed guidance on all contract management issues, challenges, and best practice.

**EPEC: European PPP Expertise Centre.** *"Managing PPPs during their contract life, Guidance for sound management"*. This document is useful when considering setting up the team and also when considering how to manage service performance

**EPEC: European PPP Expertise Centre.** *"Report on Termination and Force Majeure Provisions in PPP Contracts"*. This document explains different methods for calculating compensation for Procuring Authority default and voluntary termination.

**EPEC: European PPP Expertise Centre.** *"Termination and Force Majeure Provisions in PPP Contracts"*. This document sets out the termination provisions most commonly used across Europe, how they have developed over time and their rationale.

**EPEC: European PPP Expertise Centre.** *"The Guide to Guidance. How to Prepare, Procure and Deliver PPP Projects"*. This guide seeks to identify the "best of breed" guidance currently available from PPP guidelines worldwide and selected professional publications. It was also used to show the different forms of refinancings.

**OECD International Transport Forum:** *"The Renegotiation of PPP Contracts: An Overview of its Recent Evolution in Latin America"*. This document includes a description of the different causes for initiating the renegotiation by the Procuring Authority or by the Private Company.

**The World Bank:** *"Good Governance in Public-Private Partnerships, A Resource Guide for Practitioners"*. This document provides guidance on governance in PPPs, with an emphasis on Latin America, and was particularly useful in understanding approaches to dealing with Project Company financial difficulties.

**The World Bank:** *"Guidance on PPP Contractual Provisions, 2017 Edition"*. This manual is an update on the earlier 2015 edition based on user feedback. The objective of this guide is to assist Procuring Authorities with obtaining a better and more comprehensive understanding of PPP contractual provisions, highlighted also in the 2015 edition.

**UK HM Treasury PPP Policy Note:** *"Early Termination of Contracts"*. The purpose of this note is to set out the budgeting, accounting and fiscal implications of a voluntary termination of a PPP contract by a Procuring Authority, as well as the review and approval process that should be followed.

**UNECE: United Nations Economic Commission for Europe.** *"Public Project Partnership. Contract Management Manual"*. This manual defines international best practice and is intended to provide the foundation for the design, development, and operation of PPP contract management systems by governments. It was mentioned in the transition period from financial close to construction section.

APPENDIX A

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# Data Analysis



## Data Analysis Contents

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# 1 Introduction

As part of the research for the reference tool, data was collected and analysed for a sample of PPP projects. Data collection was aimed to give insight into the prevalence of the contract management issues, any sector- or region-specific trends and the prevalence of underlying causes for any significant events. This section presents the results of the data collection.

The process for collecting data was to first create a Master Database of all PPP projects in economic infrastructure which reached financial close between 2005 and 2015 (inclusive). A random sample of 275 projects was selected, and data was collected on these projects based on desktop research with additional interviews carried out with project stakeholders where possible. 25 projects which had minimal data available were removed from the sample to give a sample database of 250 projects. This is described in further detail in the Methodology. It should be noted that there were a number of limitations to the data collection process, including:

- **Desktop research – publicly available information.** The availability of information varied significantly between regions. Governments in some regions make project information easily available online, including the PPP contracts themselves, while multi-national bodies such as development banks also publish information on the projects they are involved with. However, this is often not the case, especially in emerging markets such as India or China, and more so in earlier years. This challenge was to some extent overcome by contacting project stakeholders, but this also was not always possible. The results for each metric are therefore based only on the projects for which firm data was found.
- **Desktop research – accuracy of information.** In some cases, the accuracy of the information collected was clear, for example because it came from the original PPP contract. In other cases it was less clear, with news articles referring to events on a project but limited further information available. This was addressed as far as possible by cross-checking data against other sources as well as with project stakeholders.

- **Availability of project stakeholders.** It was not always possible to contact stakeholders on the projects for which data was being collected. Where it was possible to make contact with stakeholders, not all of them were willing to participate in the study. In many instances, key stakeholders with the relevant knowledge have left the project, which added to the challenges of data collection.
- **Commercial sensitivity.** Certain information was commercially sensitive, in particular relating to cost overruns and variations, ongoing disputes, as well as contract renegotiation. For this reason, even where we were able to talk with project stakeholders, they were often unwilling to share certain data. In addition, a number of stakeholders, in particular on the Project Company side, were also not willing to engage in any interviews due to confidentiality restrictions in the relevant PPP contract. In general, lenders were not willing to communicate any project specific information due to the confidentiality restrictions in their agreements with the Project Company.
- **Transparency and availability of data presents a challenge in some regions.** In regions where no reliable project data could be collected and particular challenges were faced when identifying the relevant stakeholders and engaging with them, the overall data collection in that particular region was reduced to a smaller number of projects than originally identified as a portion of the overall 250 sample of projects.

For these reasons, the data presented below is limited to those projects for which reliable information could be found. Each chart and table shows the number of projects on which data was available for that chart or table.

It should also be noted that only a single project in the sample has been handed back to the Procuring Authority. This means that the prevalence of events presented here (i.e. renegotiation, disputes, Significant Events, change of ownership and refinancing) is going to be lower than it would be if the projects studied had run for their full contract duration, as events such as renegotiation or disputes, for example, are likely to occur for some projects in the future.

## 2 Procuring Authority team data

Table 1: Prevalence of use of Contract Management Manual by region

Region	No. of Projects with data	No. of Projects with Contract Management Manual	% of Projects with Contract Management Manual
Africa	3	1	33%
ANZ	3	3	100%
East Asia	6	1	17%
Europe	35	12	34%
Latin America and the Caribbean	33	0	0%
MENA	7	1	14%
North America	5	4	80%
SE Asia	5	0	0%
South Asia	16	11	69%
<b>TOTAL</b>	<b>113</b>	<b>33</b>	<b>29%</b>

Our research shows that there is no set formula for the size and structure of the Procuring Authority team; it can vary from a couple of individuals up to over 50 depending on the complexity of the PPP contract and the type of involvement the Procuring Authority wishes to have. However, it is common for the team to be made up of only a small number

of permanent staff (i.e. less than ten, and often less than five), and for external advisors and contractors to be used as necessary. A number of stakeholders interviewed perceived their teams as short staffed, but did not feel that the size of the team hampered effective contract management.



### 3 Renegotiation data

#### 3.1 Prevalence of renegotiation

The prevalence of renegotiation across the entire dataset is shown below in Figures 1 and 2. Figure 1 shows the prevalence of renegotiation in any individual year after financial close (for example 7% of projects had a renegotiation in the third year after financial close). Figure 2 shows the prevalence of renegotiation up to that point in time (for example 20% of projects experienced a renegotiation within the first four years after financial close). It should be noted that the number of projects on which this

information is based reduces for later years. This is because, in order to calculate the prevalence of an event in a certain year, we can only assess projects which have been running for at least that length of time.

It should also be noted that all the projects in this study are ongoing, and may have renegotiations in the future. This data will therefore underrepresent the prevalence of these events.

Figure 1: Prevalence of renegotiation in each year after financial close

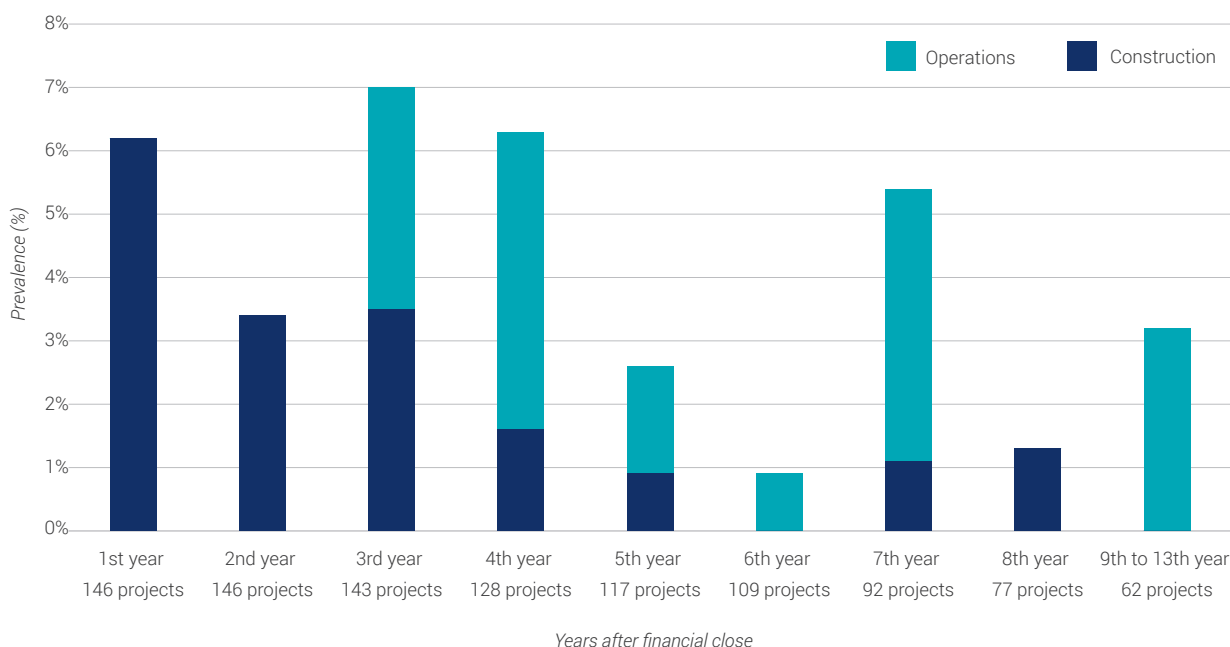
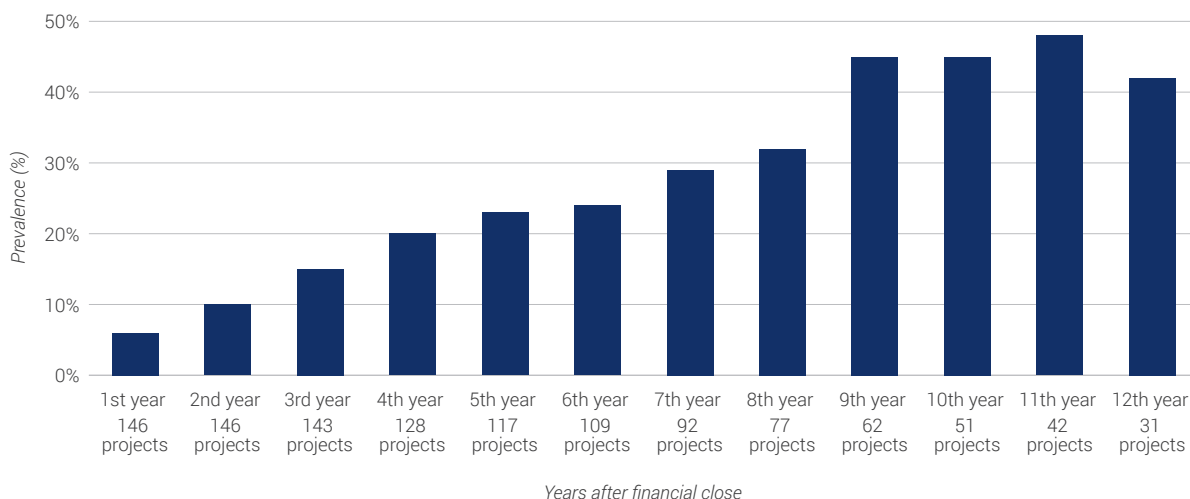
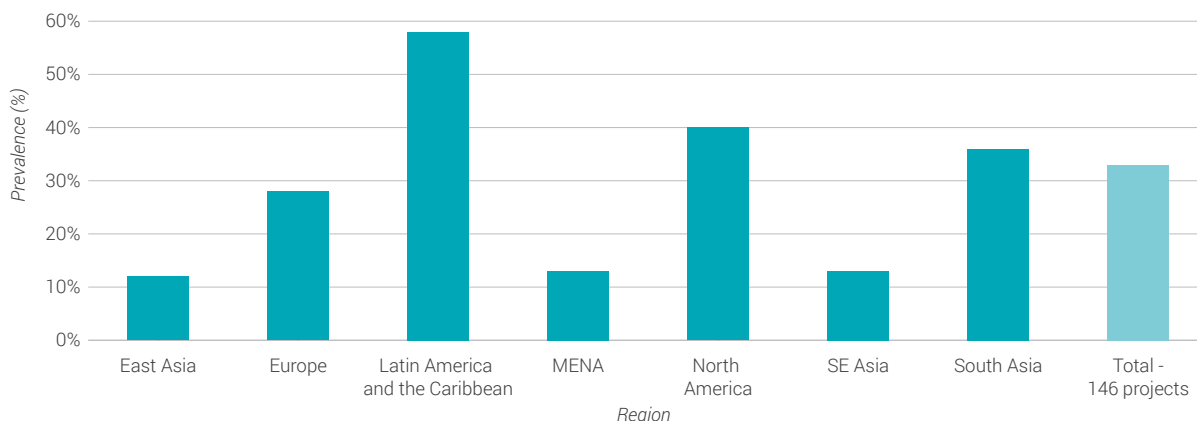


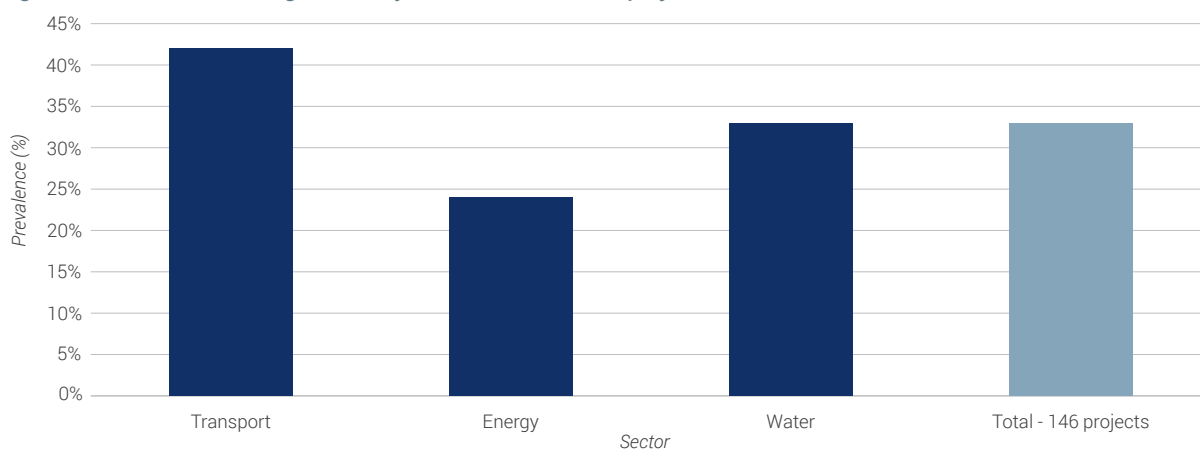
Figure 2: Prevalence of renegotiation, by year N after financial close



**Figure 3: Prevalence of renegotiation by region, based on 146 projects**



**Figure 4: Prevalence of renegotiation by sector, based on 146 projects**



In total, our study found 48 examples of renegotiation out of the 146 projects for which this data was available, which is an incidence of 33%. This included 12 in Europe, 25 in Latin America, five in India and single examples in the other regions. The prevalence of renegotiation in Latin America is partly due to the approach taken in that region with ‘rebalancing’. This approach blurs the distinction between renegotiation and adjustments, which was not distinctly picked up in the data collection process. Consequently, for the purpose of this data analysis, the study results do not differentiate between renegotiation and rebalancing in Latin America.

It should be noted that the prevalence of renegotiation results is heavily influenced by the timeframe that was selected for this research (i.e. reaching financial close between 2005 and 2015).

While all projects in the sample have been running for at least two years, this reduces for each year after, and only 50 projects have been in progress for over eight years. The influence of this is clear in Figure 2, showing the prevalence of renegotiation, by year N after financial close. While only 33% of projects experienced renegotiation in the entire sample, the data indicates that almost 20% of the ongoing PPPs had experienced renegotiation by their fourth year

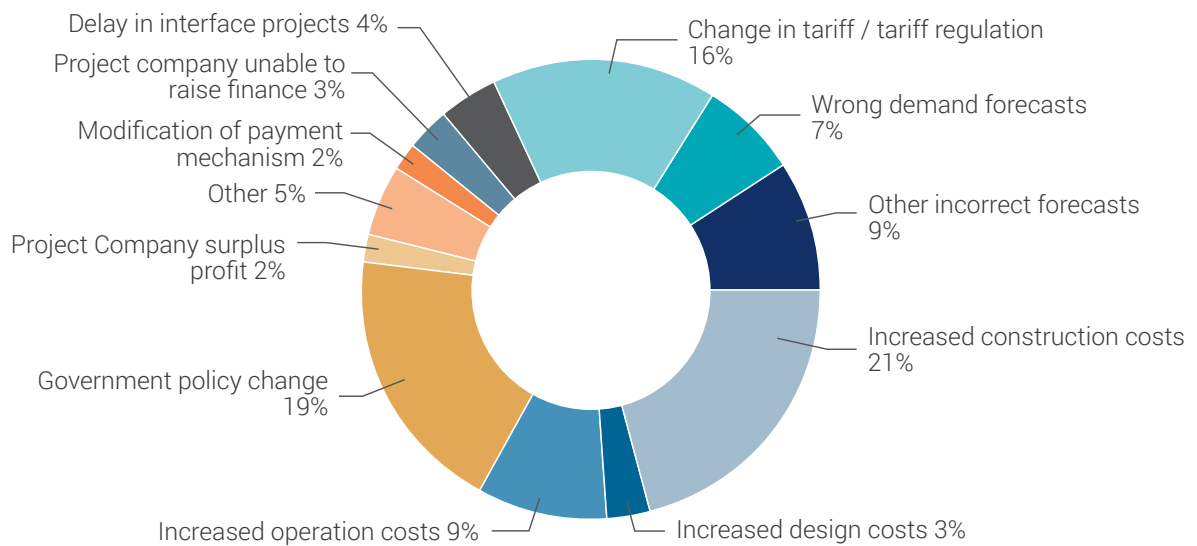
after financial close, and 45% of PPPs by their tenth year after financial close. This suggests that the true prevalence of renegotiation is likely to be higher due to the timescales involved, noting also that renegotiation prevalence does not appear to increase substantially after year nine. The timescales also means that any potential handback issues are not captured in the data.

Had the same set of projects been used for each year after financial close, Figure 2 would have been cumulative. A different set of projects is used for each year (year N) after financial close as not all of the projects have reached year N at the time of completing this study. The prevalence drops off in later years due to the different set of projects.

A large number of renegotiations took place between two and four years after financial close. Our study suggests that, it takes some time for issues or challenges to arise on a project before a renegotiation is initiated. The existing literature suggests that there can be a tendency in some jurisdictions to sign a PPP contract and renegotiate very soon after. Figure 1 shows that renegotiation is more likely in year one than in year two, although given the small number of occurrences involved it is not possible to draw any strong conclusions.

### 3.2 Causes for renegotiation

Figure 5: Cause of renegotiation, based on 48 projects that experienced renegotiation



The causes of renegotiation in our study were varied. In 17 cases it was due to increased costs (two during design, 10 during construction and five during the operational phase). Although increased construction costs and increased operation costs are termed as causes of renegotiation, in reality they were the consequences of an underlying cause which has not been identified during the study. The underlying cause which led to increased construction or operation costs is, at times, related to the Procuring Authority's breach of, or non-compliance with, its contractual obligations (e.g. failure to complete land acquisition, grant site access, secure third party approvals, etc.). Another 18 were due to a change in regulation or policy change, split evenly between regulation and policy changes. Four were due to incorrect demand forecasts, including the Queen Alia International Airport Expansion Case Study, where the actual

volumes were higher than predicted. The remaining instances were due to external factors, such as delays in gaining access to worksites.

The party initiating the renegotiation was split evenly between the Project Company and the Procuring Authority, however we have to be careful drawing any conclusions from this outcome. In some cases a renegotiation was needed due to external changes. For example, on the Perpignan Figueras High Speed Rail Link project between France and Spain, the non-PPP rail project connecting the rail PPP to Barcelona was delayed. In other situations, only one party was been interested in engaging in a renegotiation, such as the Sao Paulo Metro Line project, where the Procuring Authority initiated the renegotiation due to delays in the construction phase.

*Table 2: Outcome of renegotiation by region, based on 146 projects*

Region	Increase in tariff	Decrease in tariff	Change in investment obligation	Change in contract period	Scope change: operat'n	Scope change: constr'n	Other
East Asia		1					
Europe	5	2		3	4	3	3
Latin America	5	7	6	10	2	6	5
MENA						1	
North America	2		1	1			
SE Asia	1						

The most common outcome of the renegotiations in this study was a change in tariff, and there were 13 examples of an increased tariff, mostly in the projects in Europe and Latin America. There were another 10 examples of a decrease in tariff, however six of these eight were in Brazil and another was a similar unilateral reduction in feed-in tariff on a project in Romania. The other contract change was in Portugal where the payment mechanism changed entirely.

A change in scope occurred 10 times in the construction phase and six times in the operations phase. The construction scope changes ranged from reductions in scope on the Baixo Highway in Portugal, to changes in tunnelling works due to ground conditions on projects in Brazil and the Netherlands, to the large increase in investment in the Queen Alia International Airport Expansion Case Study.

It was also common for the contract duration to be extended as a form of compensation for the Project Company. For example, the PR-22 highways in the USA was extended by 10 years. Where the contract duration was extended to account for construction delays, the extension period was much shorter, generally one to two years.

There were eight instances of renegotiation with other results, such as a change to the construction schedule in Brazil, an increased government contribution in Greece and a new project site in Mexico.

## 4 Disputes data

### 4.1 Prevalence and characteristics of disputes

Table 3: Disputes related to KPIs and performance monitoring

Region	No. of Projects with identified causes of dispute	No. of projects with disputes related to KPI or performance monitoring	% of projects with disputes related to KPIs
Africa	1	0	0%
ANZ	2	0	0%
East Asia	0	0	N/A
Europe	10	3	10%
Latin America and the Caribbean	9	1	11%
MENA	0	0	N/A
North America	1	0	0%
SE Asia	1	1	100%
South Asia	6	1	17%
<b>TOTAL</b>	<b>30</b>	<b>6</b>	<b>20%</b>

Figure 6: Prevalence of disputes by region, based on 165 projects



Figure 7: Prevalence of disputes in each year after financial close

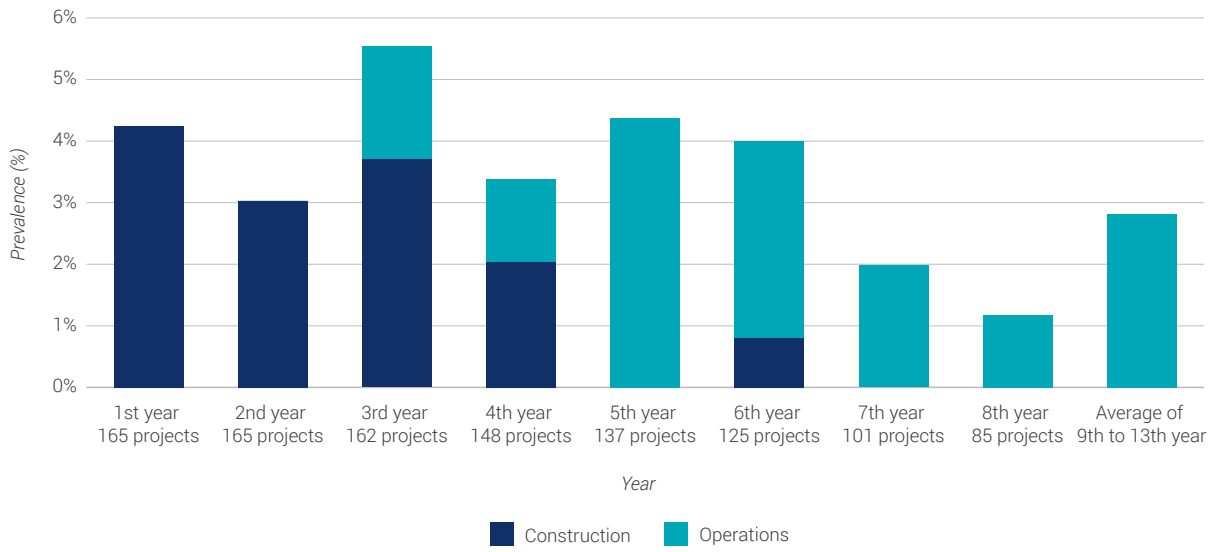


Figure 8: Prevalence of disputes, by year N after financial close

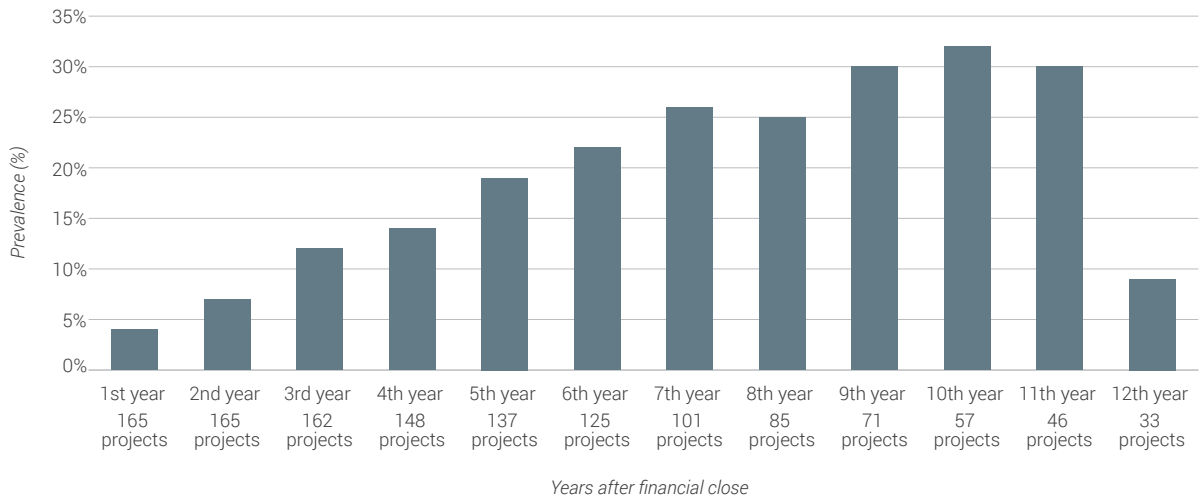
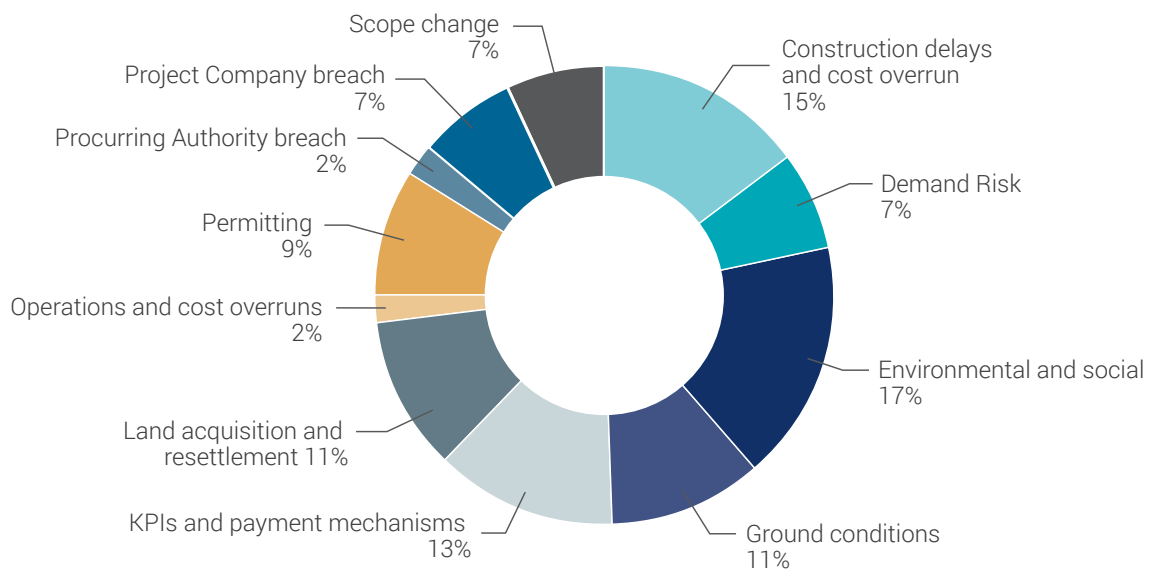


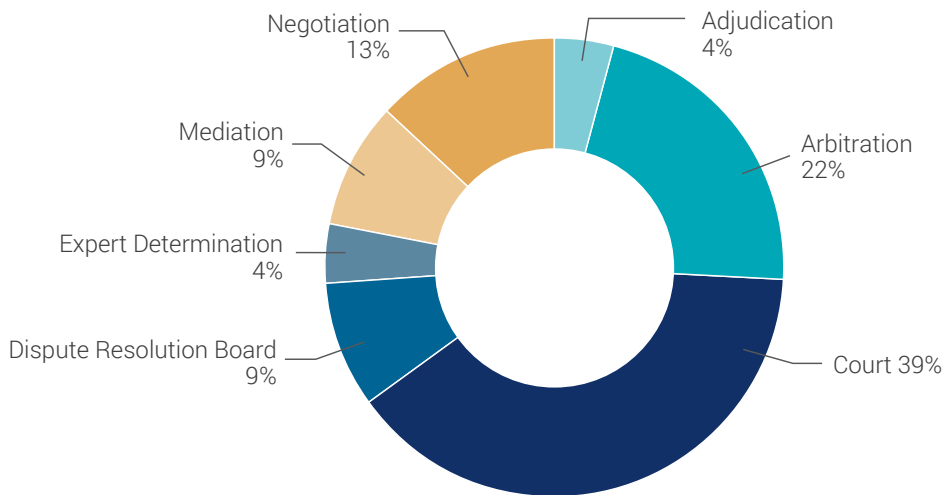
Table 4: Breakdown of party issuing dispute notice

Region	Projects with data available	Served by Both	Served by PA	Served by ProjCo
Africa	1	1	0	0
ANZ	2	0	0	2
East Asia	0	0	0	0
Europe	11	0	2	9
Latin America and the Caribbean	7	0	3	4
MENA	0	0	0	0
North America	1	0	0	1
SE Asia	1	0	1	0
South Asia	6	1	2	3
<b>Total</b>	<b>29</b>	<b>2</b>	<b>8</b>	<b>19</b>

Figure 9: Causes of disputes, based on 30 projects that experienced disputes and causes are available, noting that some projects have multiple causes



**Figure 10: Methods used to resolve disputes, based on 28 projects with resolved disputes**



Contractual disputes are quite common in PPPs during both construction and operational periods. Our research found that a formal notice of dispute was issued by one of the contracting parties on 42 projects out of 165 PPPs studied for which dispute data was available, which is a prevalence of 25%.

While all projects in the sample have been running for at least two years, this reduces for each year after, and only 50 projects have been in progress for over eight years. The influence of this is clear in Figure 8, showing the prevalence of disputes, by year N after financial close. While a formal notice of dispute was only issued on 25% of projects in the entire sample, the data indicates that almost 15% of the ongoing PPPs had experienced a dispute by their fourth year after financial close, and over 30% of PPPs by their tenth year after financial close. This suggests that the true prevalence of disputes is likely to be higher due to the timescales involved.

Had the same set of projects been used for each year after financial close, Figure 8 would have been cumulative. A different set of projects is used for each year (year N) after financial close, as not all of the projects have reached year N at the time of completing this study. The prevalence therefore drops off in later years due to the different set of projects being included.

On average these occurred 4.2 years after financial close, and there was an approximately even split between disputes during the construction and operational phases. 28 disputes have been resolved at the time of writing, out of the 42 projects that had a dispute. The time taken to resolve the dispute was generally within one year, however there were a small number of disputes which took three to four years to resolve.

There was a very large variation in the causes of disputes in our sample. When the dispute notice was issued by the Project Company, the most common reason was an increase in costs for which the Project Company was seeking compensation. This occurred due to unexpected ground conditions, higher than expected maintenance costs of existing infrastructure, and a single dispute regarding the level of payment for a change in scope. There were also disputes relating to revenue forecasts, with either disagreements on how to calculate the payment to the Project Company, or the Project Company arguing that the actions of the Procuring Authority led to reduced demand.

Interviews with stakeholders on several projects studied and our general discussions with key players in the PPP markets do show that disputes often occur due to ambiguous contract drafting, misunderstandings of the intent of risks transferred and the further risks associated with the differing interpretation of complex bespoke terms.

Where the dispute notice was issued by the Procuring Authority the most common reason was the ongoing failure of the Project Company to meet operational requirements, whereas any dispute during construction is typically driven by the Project Company. There were five examples of the Procuring Authority issuing the dispute notice during the operation and maintenance phase, with two relating to road quality and the remaining relating to a failure to provide the investment required and quality outcomes. The other common cause of dispute was delays in the construction phase, which occurred four times.



The other category of disputes which appeared were those which had an underlying cause in actions by a third party. This includes interventions by an environmental regulator, or ongoing protests by local populations. These are worthwhile noting as a reminder that external events have the potential to cause problems if they're not handled well.

The method used to resolve disputes varied across the sample, with methods such as negotiation used in 13% of the cases. There was a high number of disputes solved by going to court, which is partly

due to the fact that in some jurisdictions it is not common to have a series of dispute resolution options. For example, in Spain the right to interpret the contract generally sits with the Procuring Authority, and if the Project Company disagrees with the Procuring Authority then it has no option but to go to court. In one project studied, this occurred twice, with the court deciding in the Procuring Authority's favour both times. Additionally, resolution methods such as mediation and negotiation are more private and therefore less likely to be picked up by our data collection process.

#### 4.2 Dispute resolution mechanisms

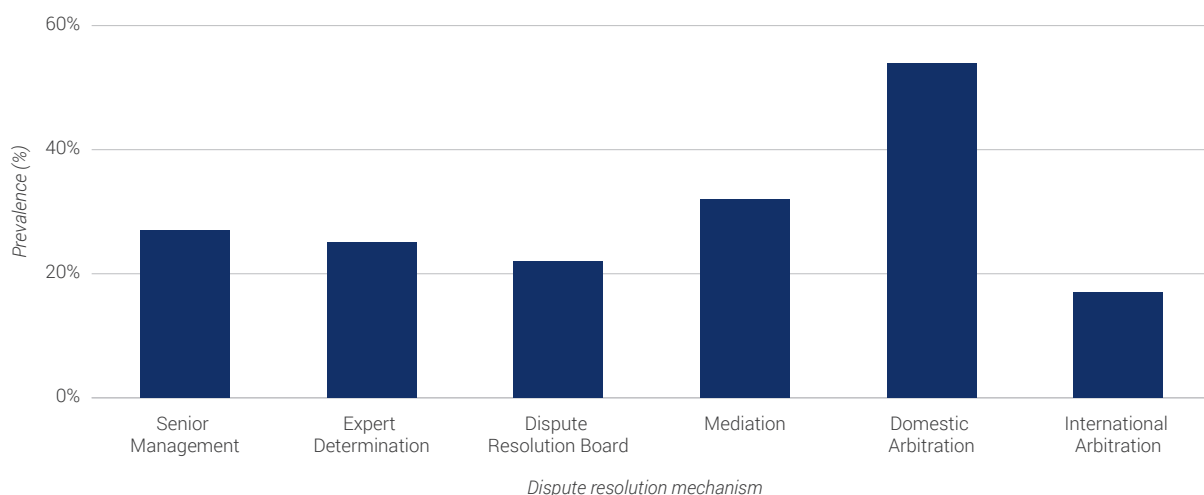
Contract data was found for 115 projects in our sample, and of those approximately 68% included a sequence of dispute resolution mechanisms. The prevalence of each individual mechanism is shown below in Figure 11, domestic arbitration is the clear standout, appearing in over half of contracts, suggesting that it is a common feature across the world.

Dispute Resolution Boards were present in slightly over 20% of contracts. Places such as India, Brazil and Europe tended to have this mechanism slightly more often than not, whereas it was far less common in North America and the Middle East. The breakdown by sector was similar to the overall breakdown.

A defined process to resolve disputes by senior management also appeared in approximately 27% of contracts. There were clear discrepancies between regions for this figure, with no projects in Latin America including this mechanism, while the majority of projects in North America did include it.

Mediation was present in 32% of the PPP contracts, and while it is slightly more common in India and less common in Latin America, there are no other particular trends. International arbitration was less common than expected, which may be a limitation in our data.

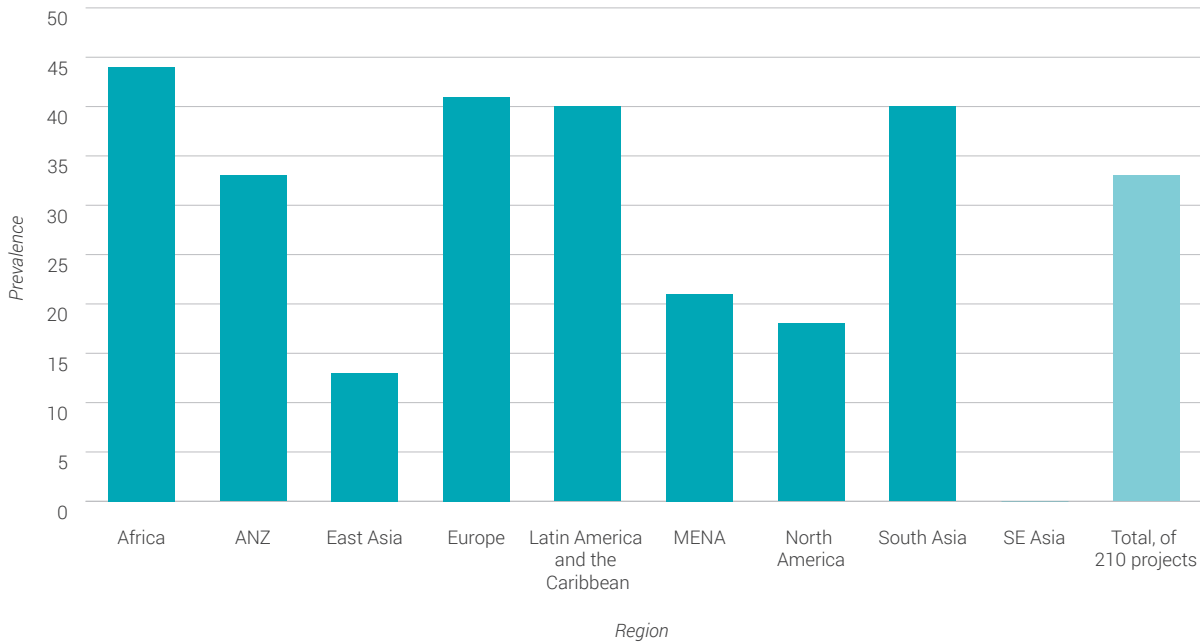
Figure 11: Prevalence of dispute resolution mechanisms explicitly defined in PPP contracts, based on 115 projects



## 5 Other Significant Events data

### 5.1 Overall data

Figure 12: Prevalence of Significant Events by region



For the purposes of this study, a range of events were classified as Significant Events. These were:

- Insolvency, either of the Project Company or a major contractor
- Change of the construction or operations contractor
- Step-in, either by Procuring Authority or Lenders
- Termination of the project, either by the Procuring Authority or Project Company
- Force Majeure events
- Material Adverse Government Actions (MAGA)
- Uninsurable events

The prevalence of these events is shown above. The key events are described in further detail below.

## 5.2 Force Majeure Events

Table 5: Prevalence of Force Majeure Events by region

Region	Projects with data available	Number of Force Majeure events	%
Africa	8	0	0%
ANZ	3	0	0%
East Asia	22	0	0%
Europe	45	4	9%
Latin America and the Caribbean	51	2	4%
MENA	14	2	14%
North America	10	0	0%
SE Asia	9	0	0%
South Asia	31	5	16%
<b>Total</b>	<b>193</b>	<b>13</b>	<b>7%</b>

Our study uncovered seven examples of force majeure in the projects researched. Two of these were related to events that were entirely external to the project; one project is located in Crimea, which was invaded by Russia, while the other one is in Egypt which experienced a revolution during the Arab Spring. Other events were classified as force majeure, however were not entirely unrelated to project risks. The Bajo Almanzora Desalination Plant in Spain experienced flooding which halted operation of the facility, and there is an ongoing dispute regarding whether this counts as a force majeure event. Workers strikes were the cause of three of the force majeure events; Navayuga Quazigund Expressway in India, Bahia Outfall water treatment plant in Brazil, and the Lazaro Cardenas Second Container Terminal in Mexico.

While it is not possible to draw many conclusions on the prevalence of force majeure events with so few examples, five of these events did take place in India, which suggests that PPP projects there do have a higher tendency to suffer from this issue, but may also be a reflection of the number of PPPs in our sample located in India. The Mahan Tori Power Plant had to reduce its operations after its coal allocation was removed by a Supreme Court ruling in 2014, while the Shrinagar Hydro Electric project suffered from flooding. The Procuring Authority on the Talcher II Transmission Line project was not granted the necessary authority to carry out its obligations, which was defined as force majeure. The events also lasted for a long time, with each example lasting for 3-4 years.

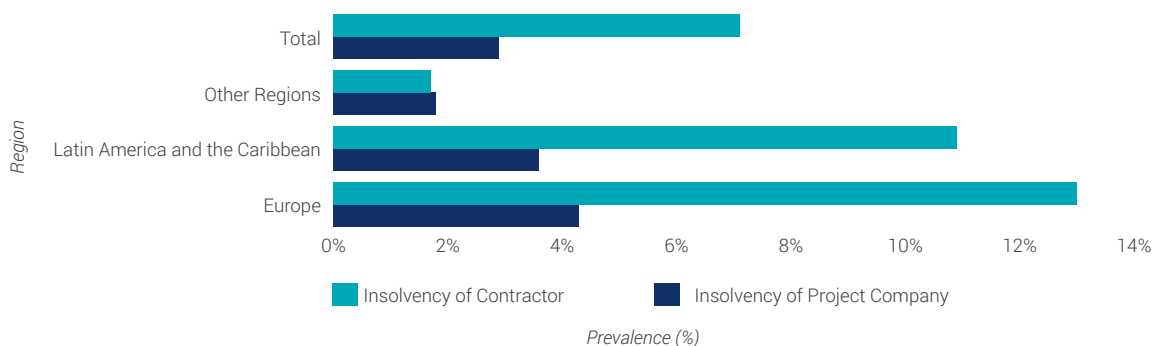
### 5.3 Material Adverse Government Action (MAGA) Events

Table 6: Prevalence of Material Adverse Government Action Events by region

Region	Projects with data available	MAGA Event	%	Causes
Africa	7	1	14%	
ANZ	3	1	33%	
East Asia	21	0	0%	
Europe	44	3	7%	Delays in adjacent projects
Halted by central government	51	2	4%	
Latin America and the Caribbean	48	1	2%	
MENA	14	0	0%	
North America	8	0	0%	
SE Asia	9	0	0%	
South Asia	27	1	4%	Delays in land acquisition
<b>Total</b>	<b>181</b>	<b>7</b>	<b>4%</b>	

### 5.4 Insolvency

Figure 13: Insolvency Events, based on 204 projects with data available



#### 5.4.1 Project Company

Our study found only six examples in which insolvency of Project Company has occurred, spread across a number of regions and including the Perpignan Figueras Rail Link between France and Spain. In all instances, the Project Company was exposed to revenue risk and the projects were either in transport or energy generation.

Netherlands, Germany, South Africa and Brazil, and Mexico.

Insolvency of construction contractors occurred on both availability based and demand based PPPs. Two equipment suppliers on UK waste projects went insolvent. In one case, the insolvency of the construction contractor was coupled with the insolvency of the Project Company, which eventually led to project termination.

#### 5.4.2 Key Contractors

Our study shows 13 projects in which insolvency by either the construction or operations contractor or a major supplier to the Project Company has occurred. This includes seven examples of construction contractor insolvency, in the

There was one example of the insolvency of an equity investor. In case of the Port of Miami Tunnel Case Study, Babcock Brown (as equity investor) collapsed in the Global Financial Crisis in 2008, but was replaced with Meridiam (an infrastructure fund) before financial close.

## 5.5 Termination

Table 7: Breakdown of termination by party

Region	Termination by PA	Prevalence (%)	Termination by PC	Prevalence (%)
Europe	2	4%	0	0%
Latin America and the Caribbean	3	5%	2	4%
MENA	1	7%	0	0%
South Asia	4	10%	1	3%
<b>Total</b>	<b>10</b>	<b>5%</b>	<b>3</b>	<b>2%</b>

Table 7 shows that the Procuring Authority was more likely to terminate the project than the Project Company, however these are small numbers. Our study shows that four projects were terminated due to Procuring Authority default or voluntary termination. The reasons for Procuring Authority termination varied from a case of voluntary termination on a transport project, which appeared to have failed a “public interest” test, an event of the Procuring Authority’s default in Ukraine due to political reasons to two cases of Procuring Authority default due to its failure to provide land and a failure to provide coal on a thermal energy project. Most terminations occurred soon after financial close (within two years), before construction was complete or even started. This suggests there were problems with how the project was set up in the first place.

Where the Procuring Authority terminated the PPP contract, it was generally before it was in operations and after deciding that the project was not worth continuing. In the Prato-Signa link in Italy and Vengalem Kuttipuram highway in India this was after delays in beginning construction, while for the Aqaba Port in Jordan it was decided to expand existing facilities rather than build a new facility. For the Sao Paulo Metro Line project the contract was terminated (due to a failure by the Project Company to deliver construction on time) but a new PPP contract with another Project Company was signed soon after.

## 5.6 Other claims

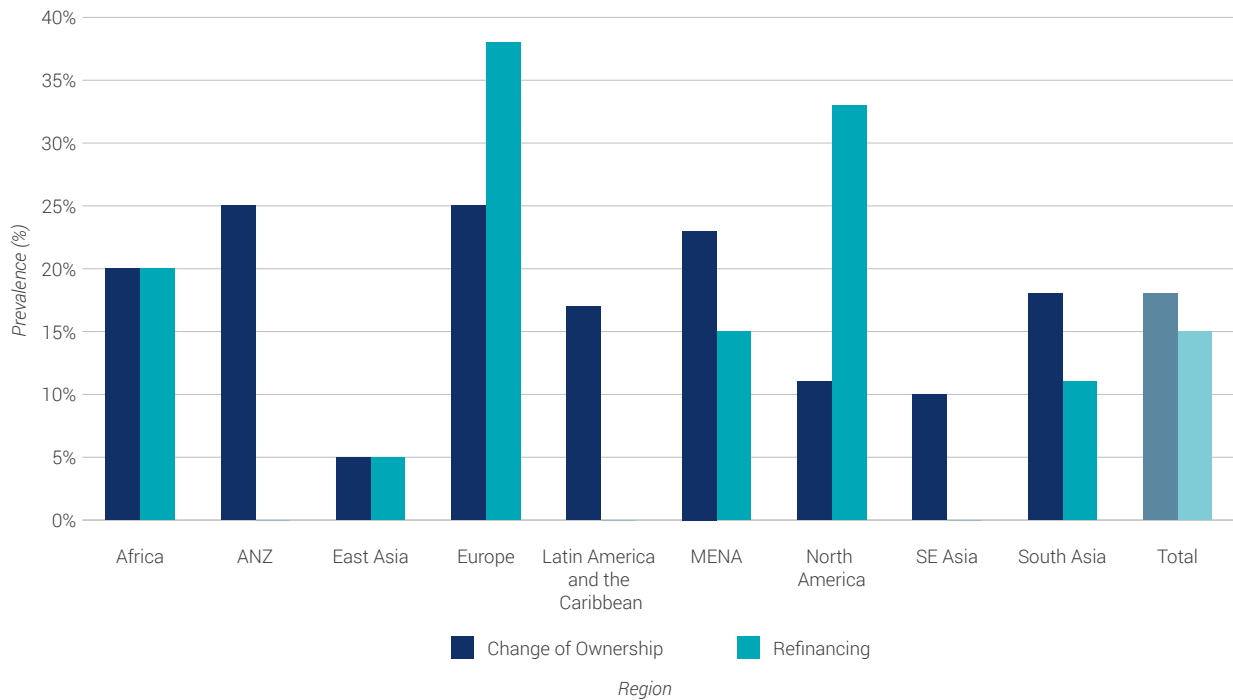
There were seven projects in our sample which had substantial construction phase scope changes where the cost was borne by the Procuring Authority. These were located across North America, Australia and Europe, and were all in the transport sector, however this may be a reflection of the greater availability of data in these regions. The values of these changes were high compared to the capital value of the project, with each example over USD \$5m and one example valued at over USD \$150 million. This again is likely to be reflective of the availability of information; small variations and changes were less likely to be picked up during our data collection process.

As the construction phase changes investigated were substantial, they were all associated with extensions of time, mostly for the entire portion of time delay. The majority of the changes were instigated soon after financial close, with six occurring within the first year.

There were less scope changes during the operations phase found in the study, and most were related directly to changes during the construction phase (i.e. the additional costs were due to different maintenance requirements).

## 6 Change of ownership and refinancing data

Figure 14: Change of ownership, based on 187 projects, and refinancing, based on 172 projects



### 6.1 Change of Ownership

There were 187 projects for which data was collected regarding a change of ownership, and this change occurred in 18% of those projects (where this change required Procuring Authority approval). A third of these occurred in Europe, with substantial numbers in India and Latin America. There was no apparent difference between sectors in likelihood of change in ownership.

It should be noted that data was not collected on the time at which changes in ownership or refinancing occurred. Additionally, the projects in question have not been handed back to the Procuring Authority, and many have not entered into operations. The prevalence of these two events would be higher for projects that have completed their entire contract term.

### 6.2 Refinancing

Approximately 15% of projects in this study had a refinancing of debt which required approval from the Procuring Authority. These figures were clearly dominated by Europe, where three quarters of these refinancings occurred, as would be expected given that it is a large and developed market. Almost all refinancings took place in the transport sector, however it is difficult to know whether this was a result of characteristics of that particular type of project or whether it is reflective of the data collection process undertaken. It may also be an indication that Procuring Authorities are more heavily involved in transport projects, with the energy sector encompassing arrangements such as Power Purchase Agreements where the Authority does not authorise refinancings.

## 7 Global and sample data

As part of the process of selecting projects which to investigate for this research, a Master Database of PPPs (Master Database) was created by combing existing databases available online. This was completed using the criteria that the projects

were in economic infrastructure and reached financial close between 2005 and 2015. The process followed is described in the Methodology. Presented below is some analysis from the Master Database.

*Table 8: Breakdown of master database by region and sector*

Region	Energy	Transport	Waste	Water	Totals	%
Australia and New Zealand	0	32	1	4	<b>37</b>	<b>1.0%</b>
East Asia	281	100	73	42	<b>496</b>	<b>13.3%</b>
Europe	93	423	73	54	<b>643</b>	<b>17.2%</b>
Latin America & Caribbean	511	358	32	79	<b>980</b>	<b>26.2%</b>
Middle East, North Africa	140	68	3	38	<b>249</b>	<b>6.7%</b>
North America	2	117	3	6	<b>128</b>	<b>3.4%</b>
South East Asia	164	56	4	14	<b>238</b>	<b>6.4%</b>
South Asia	317	466	0	7	<b>790</b>	<b>21.1%</b>
Sub-Saharan Africa	114	57	0	4	<b>175</b>	<b>4.7%</b>
<b>Totals (number)</b>	<b>1622</b>	<b>1677</b>	<b>189</b>	<b>248</b>	<b>3736 (100%)</b>	
<b>Totals (%)</b>	<b>43.4%</b>	<b>44.9%</b>	<b>5.1%</b>	<b>6.6%</b>		

*Table 9: Percentage of projects in each region*

Region	Percentage of projects	Number of projects
Australia and New Zealand	1.0 %	37
East Asia	13.3 %	496
Europe	17.2 %	643
Latin America & Caribbean	26.2 %	980
Middle East, North Africa	6.7 %	249
North America	3.4 %	128
South East Asia	6.4 %	238
South Asia	21.1%	790
Sub-Saharan Africa	4.7 %	175
<b>Total</b>		<b>3736</b>

*Table 10: Composition of master database by sector*

Sector	Percentage of projects	Number of projects
Transport	44.9 %	1677
Energy	43.4 %	1622
Water	6.6 %	248
Waste	5.1 %	189
<b>Total</b>		<b>3736</b>

Table 11: Composition of master database by financial close date

Financial close (by period)*	Percentage of projects	Number of projects
Period 1	20.0%	747
Period 2	24.5%	914
Period 3	28.7%	1072
Period 4	26.8%	1003
<b>Total</b>		<b>3736</b>

\*Periods were defined as:

- Period 1 – Jan 2005 to Sept 2007
- Period 2 – Oct 2007 to June 2010
- Period 3 – July 2010 to Mar 2013
- Period 4 – Apr 2013 to Dec 2015

Figure 15: Capital value of projects in master database

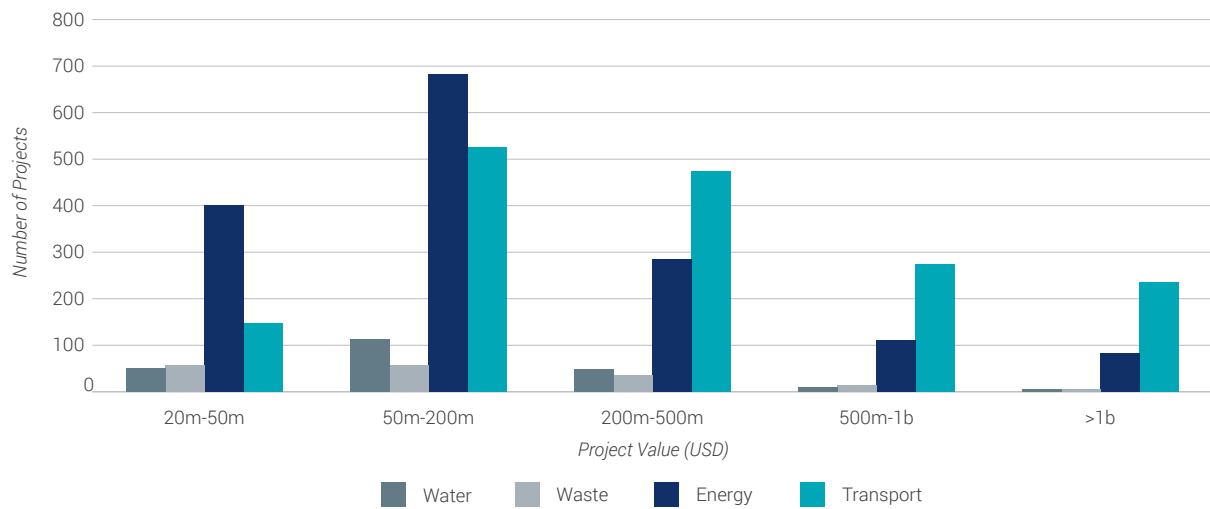
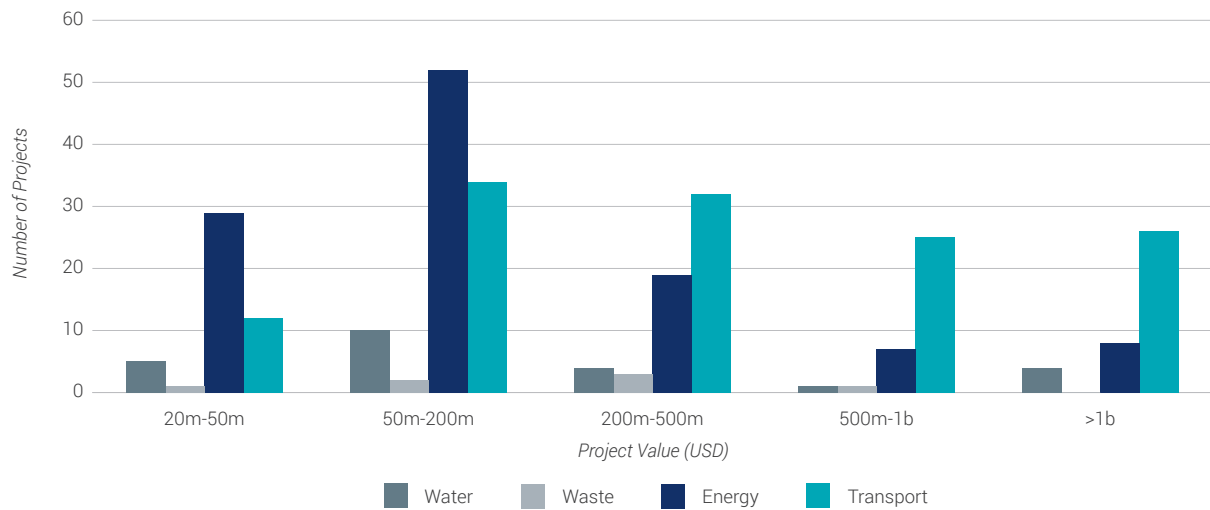


Figure 16: Capital value of projects in sample database





# Case Studies



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## BELGIUM

## Brabo I Light Rail



## OVERVIEW

**Location**

Antwerp, Belgium

**Sector**

Transport – Rail

**Procuring Authorities**

Agentschap Wegen en Verkeer (AWV, the Flemish Road Agency) and De Lijn (the Flemish public transport company)

**Project Company**

Project Brabo 1 NV

**Project Company Obligations**

Design, Build, Finance and Maintain

**Financial Close**

8 August 2009

**Capital Value**

€ 178 million (USD \$254 million – 2009 exchange rate)

**Contract Duration**

38 years (with the Flemish Road Agency),  
28 years (with De Lijn)

**Key Events**

Scope change, refinancing, revocation of construction permit

## SUMMARY

Brabo 1 Light Rail is the first PPP project for public transport in Flanders, Belgium. The project was procured by two Procuring Authorities under two separate contracts: 1) a contract for the extension of the existing light rail network and a substantial tram maintenance depot; and 2) a contract for the comprehensive renewal of associated road infrastructure. The Project Company, Project Brabo 1 NV, is responsible for the design, construction, financing and maintenance of the project, which is based on availability and performance-based payments. The project was delivered without delay and, during its five years of operation, the most significant events were the refinancing in March 2016, revocation of the Project Company's construction permit in 2011 and challenges related to the interface of the project with a separate newly constructed part of the light rail network. In general, the project is perceived as a success by both Procuring Authorities.

The project has a bespoke financing structure associated with the earliest Belgium PPPs, where the Procuring Authorities have a shareholding in the Project Company. One of the two Procuring Authorities, De Lijn, invested in 24% of the Project Company's shares at financial close in 2009 through its investment company Lijninvest N.V., which was set up in 2007. The second bespoke feature of the project is that it includes a separate design, build, finance contract with the City of Antwerp related to the renewals

of the road infrastructure within the municipality. The City of Antwerp was primarily involved during construction, and at construction completion, the milestone payment from the City of Antwerp was used to repay the short-term finance raised by the Project Company. The City of Antwerp also has an obligation to make quarterly contributions for specific maintenance services during the operations phase.

### SUMMARY LESSONS LEARNED

- Contemplating known changes to the scope of work early (even where the costs are not known) makes it helpful to manage once the costs become known.
- Poor document control management can slow down and create inefficiencies during transition periods.
- Inadequate timing for approvals of change orders may lead to delays and create tension in the relationship between the Project Company and the Procuring Authority.
- Building on relationships with all relevant stakeholders can assist in managing issues with permitting in an efficient manner.
- The Project Company may need time to adjust into the operations phase and become fully compliant with its operational KPIs.
- Failure to meet KPIs may require proactive management from both parties to resolve the cause of non-compliance.
- Creating a working group and appointing a financial advisor during a refinancing can assist the Procuring Authority to attain a positive outcome from a refinancing of the Project Company.

### PROJECT INCEPTION

#### Goals and Objectives of the Partnership

In August 2007, the government body responsible for the delivery of the Antwerp Mobility Plan, Beheersmaatschappij Antwerpen Mobiel, launched the tender for the project. The scope of the project consists of 7km of light rail infrastructure in the eastern part of the City of Antwerp and a large tram maintenance depot for 53 trams in Wijnegem, as well as the comprehensive renewal of associated street infrastructure. The aim of the project is to facilitate the connection from the city centre to remote municipalities, in order to reduce the number of cars in the city by improving connectivity and promoting public transport. The project is part of the Antwerp Mobility Plan which was initiated in 2003, consisting of several improvement projects with the aim that, by 2020, half of all journeys in the region were to be made by public transport, bicycle or on foot.

Though the procurement was led by Beheersmaatschappij Antwerpen Mobiel, in May 2009, the Project Company

entered into the two contracts (here collectively referred to as the PPP contract) with the Flemish Road Agency and the Flemish public transport company, De Lijn. The first contract period is 28 years, including three years of construction with the possibility of an extension of 10 more years in relation to the rail network extension and maintenance depot with De Lijn. The second contract period is 38 years, including three years of construction for the renewal of the associated street infrastructure with the Flemish Road Agency.

With construction works to be carried out within a specified time period and within a constrained urban area, the Procuring Authorities' rationale for this ambitious scope was to keep responsibilities in the hands of one party and allow for the allocation of interface risks to the private sector, creating an incentive to manage them adequately. The main advantages were accountability, value for money and nuisance mitigation.

#### The Economic and Political Environment during Inception

At the time of writing this case study, the successes of projects like Brussels Airport Rail Link PPP and Brabo 1 Light Rail PPP have developed into a well-established procurement method for numerous infrastructure projects, which subsequently followed. The project reached financial close during the Global Financial Crisis, in the third quarter of 2009. At that time, there was no policy commitment to PPPs within the central government. The rationale for using the PPP model for infrastructure projects was developed by individual Procuring Authorities on a project-by-project basis.

The economic environment at the time of financial close made it very difficult for the project sponsors to arrange a long-term debt facility. As such, the project was financially closed and subsequently constructed under a 10-year loan tenor. As a consequence, the project had to be refinanced within the contract period. The Flemish Government also assisted the Project Company in mitigating against this refinancing risk by guaranteeing access to finance after five to ten years, in the event commercial refinancing was not possible at appropriate pricing.

### MANAGEMENT OF THE PPP CONTRACT

In order to understand the complexity of this project, it is important to realise that the project has two Procuring Authorities. The first Procuring Authority is De Lijn, which is responsible for the rail infrastructure and the exploitation of public transport within Antwerp and Flanders in general. The other Procuring Authority is the Flemish Road Agency, which is responsible for the provincial infrastructure connecting the different municipalities in Flanders. The final relevant government body is the City of Antwerp, which is responsible for the infrastructure of the city (streets and pavements).

During the tender process, De Lijn took the lead. In combination with the Flemish Road Agency and the City of Antwerp, a steering board was created to represent their joint interests during the construction phase. De Lijn also became involved in the Project Company as an equity investor with 24% of the Project Company's shareholding.

### Construction Phase

Other than an issue with the construction permit, the construction period progressed without significant issues. The key construction contractors during the construction period were Heijmans for the road infrastructure, Franki for the tram depot and Frateur de Pourcq for the rail infrastructure.

One issue that occurred during construction was a situation in which the Project Company's construction permit was revoked on 15 May 2011 because of public objections to the proposed developments. On 27 September 2011, a new permit was issued with some additional conditions. The equity position of De Lijn proved beneficial when the approval was revoked by the court. Together with the private equity investors in the Project Company, De Lijn worked as a partner to resolve the issue. Although construction works were suspended on the light rail section affected by the revoked permit, other works subject to different permits continued. In the end, the delay of four months did not have any material impact on the overall completion and timing of the project.

The project's construction progress was monitored by an independent certifier until completion was achieved.

### Operations Phase

Transition from construction to operations was challenging due to the loss of knowledge on the public sector side and difficulties associated with accessing data and information from the construction period. According to the Procuring Authority, a better document management system could have prevented this.

The key operations contractors are Heijmans, Franki and Frateur de Pourcq. The operations and maintenance activities are carried out in line with the operational model that was based on the financial model agreed at financial close. The Procuring Authority has access to the operational model in order to review it on an annual basis and check the actual maintenance expenditure is recorded correctly and in line with the forecasts.

The overall operational performance of the project has been good and there have been minimal deductions to date. Failures are minor and there have been no critical issues for the purposes of the KPIs. There was an issue with excessive noise due to the use of the light rail. The mitigation, however, was proactively managed by both parties. Data was collected during noisy periods and

appropriate mitigations (such as adding a lubrication installation on the tracks) were developed and implemented.

### Performance Monitoring and KPIs

Within the project, the KPIs agreed upon were overall considered to be relatively generic compared to other similar projects. The KPIs are divided into critical (24 hours to remedy, always a penalty) and non-critical (more remedial time, only a penalty after not meeting remedial deadline).

Due to the generic nature of the identified KPIs, the Procuring Authority and Project Company had more discussions about the intention and applicability of payment deductions in the initial years of the operations period. However, after two years, an operational understanding of KPIs was developed and a working solution was found by both parties. The Project Company uses software to monitor KPIs, to which the Procuring Authority has no access. The Procuring Authority reviews and validates performance failures and payment deductions recorded in the Project Company's quarterly reports and through their own data.

### Change Management

The protocol for change orders is prescribed in the PPP contract and the change procedure itself is considered well-defined and robust. However, the timelines for reviews and approvals are considered too tight.

In total, the project has been subject to several variations during operations to date (most of which were minor). One variation, however, was a key event related to rail interfaces and it is discussed in detail below under the heading "Key Events".

With regard to the changes noted, the total number is considered low for a project of this size. Most of the changes were requested by the Procuring Authority.

### ROLE OF GOVERNMENT

The roles of the Procuring Authorities differ depending on the Procuring Authorities' and other relevant government bodies' interests and jurisdictions in the project. During the construction phase, De Lijn took the lead in the relationship with the Project Company, whereas the Flemish Road Agency's interests are represented through the steering board which oversees the entire project. This board consists of two members from De Lijn, two members from Beheersmaatschappij Antwerpen Mobiel and five members from the Project Company. Beheersmaatschappij Antwerpen Mobiel and De Lijn have both been equity investors since 2009.

For the contract with De Lijn, operational issues are addressed during contract management meetings held quarterly between De Lijn, the Flemish Road Agency and the Project Company. In the event that operational issues need

to be escalated, a steering board meeting between all the shareholders on both the Procuring Authorities' and Project Company's side becomes the relevant forum. In addition, De Lijn also runs a quarterly internal steering committee meeting for all De Lijns' PPP projects, where matters of high importance are discussed on a project level, as well as an overall portfolio level.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

The relationship between the Project Company and the Procuring Authorities is good. To date, there have been no significant disagreements or disputes.

During the operations phase, the Project Company receives a unitary payment based on the availability and performance standards from the Procuring Authorities, which is subject to payment deductions. The financial relationship with the City of Antwerp was based on a milestone payment once the construction was completed. Additional to the availability payments, the Procuring Authorities contribute to maintenance costs specified in the contract.

### Team Set-Up and Staffing

During the operations phase, De Lijn has one contract manager and two technical staff.

### Communications

During construction, the parties used a SharePoint to manage documents and data. Its use during the operations phase was limited to management activities, such as financial and corporate reports, and monitoring.

The meetings during the operations phase are performed on several levels. As needed, technical people meet to discuss daily issues of a technical nature. Contract managers from the Procuring Authorities and the Project Company meet quarterly to discuss commercial matters, such as KPIs, performance failures, etc. Also, on a quarterly basis, the shareholders from the Procuring Authorities and Project Company meet at a steering board level to deal with any escalated issues as applicable. Overall, the frequency of meetings is considered adequate.

Although performed on a regular basis, audits of the project's performance are not published.

## KEY EVENTS

### Change Order

There was one major change order, which was anticipated at financial close. The value of the change was estimated at € 2 million. Because of the expansion of the light rail network of Antwerp, some technical changes to the existing

network had to be accommodated, to allow for interfaces with the newly constructed parts of the network. As a result of this change, the use of the rail infrastructure built within the scope of this project has also increased.

The costs associated with the change were borne by the Procuring Authorities and consisted of a fixed investment part to cover the capital cost of the change, whereas the increased maintenance costs are paid through higher availability payments. The amount of this payment was subject to commercial negotiations.

The key issue was based on higher usage than anticipated, which would lead to more wear and tear and increased maintenance costs. This change, however, was anticipated in the contract drafting but at financial close it was not possible to devise a formula which would estimate the impact on the asset condition and forecast the costs needed to provide additional maintenance.

This issue was therefore managed by increased (independent) monitoring to assess the asset deterioration due to the increased frequency of use. The higher than anticipated usage will then be quantified, which may result in agreement between the parties on the value of the availability payment.

### Refinancing of Senior Debt

Another key issue was the refinancing of senior debt. Due to the financial crisis at the time, the Project Company did not succeed in raising long term debt financing at financial close. As a result, a refinancing was completed in 2016 and new debt was raised for the remainder of the contract period.

De Lijn took the lead in the refinancing, as part of the overall refinancing that it was leading across its portfolio of projects. De Lijn and the Project Company created a working group for the refinancing and hired an external financial advisor. The equity position of De Lijn was particularly beneficial during the refinancing in terms of sharing risk and the project was also joined by a new lender. It took eight months to refinance.

## LESSONS LEARNED

### Contemplating known changes to the scope of work early (even where the costs are not known) makes it helpful to manage once the costs become known.

Although an increased use of the rail infrastructure and different rolling stock was anticipated at financial close, there was no relevant data available to forecast the costs associated with increased maintenance. The fact that the contract provided an option to allow for increased use made it possible to devise a formula later, which would, through carefully designed monitoring of asset deterioration, estimate the impact on the asset condition and forecast the amount of additional costs needed to provide additional maintenance. As such, there were no significant issues

related to the payment mechanism when the project scope was linked to the wider light rail network of Antwerp and some sections of the project were subject to greater usage and therefore more maintenance. The joint efforts of both De Lijn and the Project Company to assess the financial impact were perceived as exemplar by De Lijn.

**Poor document control management can slow down and create inefficiencies during transition periods.**

The transition from construction to operations was perceived as challenging by the Procuring Authorities due to staff turnover and an inadequate document control system. This made the transition slow and inefficient. It is therefore of critical importance that a document and information management system is carefully designed, adopted from financial close and continuously and consistently used throughout the contract duration.

**Inadequate timing for approvals of change orders may lead to delays and create tension in the relationship between the Project Company and the Procuring Authority.**

The protocol for change orders is prescribed in the PPP contract and the change procedure itself is considered well defined and robust. However, the timelines for reviews and approvals are considered too tight. Inadequate timings may lead to delays and create tension in the relationship between the Project Company and the Procuring Authority. A workable solution acceptable by both parties is needed as soon as the protocol for change orders is found to be deficient. This should preferably be agreed to before the contract is signed.

**Building on relationships with all relevant stakeholders can assist in managing issues with permitting in an efficient manner.**

One issue that occurred during construction was a situation in which the Project Company's construction permit was revoked because of public objections to the proposed developments. A new permit was, however, issued a few months later. Together with the Project Company, De Lijn worked as a partner to resolve the issue. Although construction works were suspended on the part of the light rail section affected by the revoked permit, other works subject to different permits continued. In the end, the delay of four months did not have any material impact on the overall completion and timing of the project.

**The Project Company may need time to adjust into the operations phase and become fully compliant with its operational KPIs.**

As a result of the generic nature of the identified KPIs, the Procuring Authority and Project Company had more discussions about the intention and applicability of payment deductions in the initial years of the operations period.

However, after two years, an operational understanding of KPIs was developed and a working solution was found by both parties.

**Failure to meet KPIs may require proactive management from both parties to resolve the cause of non-compliance.**

The overall operational performance of the project has been good and there have been minimal deductions to date. Failures are minor and there have been no critical issues for the purposes of the KPIs. There was an issue with excessive noise due to the use of the light rail. The mitigation, however, was proactively managed by both parties. Data was collected during noisy periods and appropriate mitigations were developed and implemented.

**Creating a working group and appointing a financial advisor during a refinancing can assist the Procuring Authority to attain a positive outcome from a refinancing of the Project Company.**

Due to the financial crisis at the time of financial close, the Project Company did not succeed in raising long term debt financing. As a result, a refinancing was completed in 2016 and new debt was raised for the remainder of the contract period.

De Lijn took the lead in the refinancing as part of the overall refinancing that they were leading across its portfolio of projects. De Lijn and the Project Company created a working group for the refinancing and hired an external financial advisor. The refinancing took eight months to complete.

## BRAZIL

# Hydropower Plant



*Stock image from Turner and Townsend*

## OVERVIEW

### Location

Brazil

### Sector

Energy – Power Generation

### Procuring Authority

Agência Nacional de Energia Elétrica  
(ANEEL, the Brazilian Electricity Regulatory Agency)

### Project Company Obligations

Build, Operate and Transfer

### Financial Close

Between 2005 and 2010

### Capital Value

Above BRL 500 million  
(about USD \$250 million – exchange rate  
at the time of financial close)

### Contract Duration

35 years

### Key Events

Delays in start of construction due  
to environmental licensing challenges

## SUMMARY

The Procuring Authority signed a PPP contract with the Project Company for this hydropower project in the early 2000s. However, due to challenges faced by the Project Company in securing the permits needed for construction, the project did not reach financial close until five years later. The plant has a generating capacity of above 70 MW. As per the PPP contract, the Project Company built the plant with the right to operate it until the expiry of the PPP contract, with a provision to extend the operational timeframe, before transferring the asset to the government.

This project was one of the early energy generation PPPs awarded in Brazil. The construction was delayed due to difficulties in obtaining environmental permits. The Procuring Authority consequently allowed, through a renegotiation of the PPP contract, additional time for the Project Company to complete construction. The lessons learned from this early hydropower PPP project and other projects awarded at the same time have been incorporated in the later Brazilian energy PPP contracts.

## SUMMARY LESSONS LEARNED

- Where there is a significant risk that the Project Company is not able to obtain the necessary licences, the Procuring Authority should have plans in place on how to handle resulting delays.



- Where approval is needed from an external body, such as an environmental regulator, it is advantageous to engage with that body as early as possible, preferably before financial close.
- A clear understanding of the Project Company's financial performance is important for effective management of the operations phase.
- Policies to reduce demand risk on Project Companies can provide a more sustainable investment environment for PPPs and increased private sector participation.
- Public perception of environmentally sensitive projects, such as hydropower plants in Brazil, can impact the long-term success of the sector.
- In a liberalised market, policies can be put in place to incentivise continuous innovation in energy efficiency from the private sector.
- Having a Procuring Authority contract management team that sits across several contracts can increase efficiencies.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The project was part of a wider programme of adding 2,607 MW to the generation capacity in Brazil. The projects awarded so far are expected to generate BRL 3.9 billion (USD \$2 billion) of revenue for the Brazilian government over their contract life. With an estimated total investment of BRL 4.8 billion (USD \$2.4 billion), the hydroelectric plants were built in ten States spread across five Brazilian regions: Rio de Janeiro, Minas Gerais, Santa Catarina, Paraná, Tocantins, Goiás, Rio Grande do Sul, Bahia, Mato Grosso and Pará, benefiting a population of about 19 million.

### The Economic and Political Environment during Inception

In the early 2000s, there was a big push from the Brazilian government to increase the generation capacity of its energy infrastructure. Coupled with new reform policies being introduced in the country, foreign investors became more confident about their investments in Brazil. The new government's reforms assisted in increasing the country's GDP, and as a result, more foreign investments started to flow into the country as it became an attractive emerging market.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

The Project Company has responsibility for the full design and construction of the asset, according to the specifications set out in the PPP contract. In addition

to the Procuring Authority's specifications, the Grid Operator, Operador Nacional do Sistema Elétrico, has its own requirements for the Project Company to meet.

The Procuring Authority only approves the compliance of the basic design with the specifications of the PPP contract, and is not responsible for securing the required construction permits for the Project Company. Acquiring the necessary permits, such as the environmental licences, caused delays for the Project Company, which are described in further detail under the heading 'Key Events' below.

Once construction began on the project, it proceeded smoothly and was completed about two years after financial close.

The Grid Operator had further specifications which the Project Company also had to meet. These are designed to protect the grid from damage, facilitate a smooth integration of the plant into the grid and guarantee safe operation during the operations phase, and the Grid Operator was therefore also involved in the commissioning of the project. After the approval of the Grid Operator was reported to the Procuring Authority, permission for the project to enter operations was given.

### Operations Phase

Since the start of operations, no major challenges have been faced during the operations phase. There is no power purchase agreement (PPA) or other offtake agreement with the Procuring Authority, and the Project Company is therefore responsible to sell the energy generated freely in the market (e.g. to large industrial consumers) to generate revenue. This arrangement led to a lack of revenue certainty for the Project Company, as it was relying on a small number of contracts with large industrial users. In later contracts, the Procuring Authority has introduced a clause which specifies the percentage of energy to be sold to regulated utility providers through PPAs, which increased the revenue certainty for the Project Companies.

### Performance Monitoring and KPIs

Other than during testing and commissioning, the Procuring Authority did not closely monitor performance during the construction phase. The PPP contract set key milestones that the Project Company was required to achieve, which were:

- Obtaining environmental licences;
- Start of construction;
- River flow detour;
- Start of electromechanical assembly
- Start of commissioning
- Start of commercial operation

Failure to achieve the milestones can result in payments due to the Procuring Authority, the liability for which is guaranteed by a performance bond provided by the Project Company. If there are any issues or failure in meeting the milestones, the Procuring Authority could undertake site visits to investigate the causes.

The Procuring Authority's role in the monitoring of the project reduces after the testing and commissioning phase is completed. When the power plant entered into service, the Grid Operator took over the performance monitoring of the Project Company from the Procuring Authority. The operations are monitored in real time and the associated performance monitoring reports are made available on the public domain. The Procuring Authority continues to be responsible during the operations phase for the monitoring of the Project Company's compliance with the contract terms and any breaches could lead to liabilities for the Project Company for agreed compensation payable to the Procuring Authority.

### **Payment Mechanisms**

The Project Company has no access to revenue prior to completion of construction and availability of the asset, so no payment mechanism is set for the construction period.

The Project Company's winning bid for the project was significantly above the set minimum bid of about BRL 300,000. The investment fee payable to the Procuring Authority of approximately BRL 2 million is broken down into annual fees, adjusted for inflation, which are paid in monthly instalments. In addition to the investment fees paid to the Procuring Authority, the Project Company is required to pay usage fees to transmission line operators to connect to the grid. The PPP contract allowed for these fees to be reduced if the generation drops below 30GW, which has occurred a number of times on the project.

Although not specific to the PPP contract, it is important to highlight some additional fees/taxes that the Project Company is required to pay. All PPP contracts in Brazil are required to pay taxes that are dedicated to fund the Procuring Authority's operations in regulating and inspecting the market. In addition, there is a "wire-charge" mechanism, where all Project Companies are required to set up a fund where one percent of their annual revenue is deposited. This fund is then used to pay for investments in energy efficiency and Research and Development (R&D).

The management of the fund is the responsibility of the Project Company. However, proof of the deposits is required to be presented to the Procuring Authority, and all R&D or efficiency projects carried out by the fund are submitted to the Procuring Authority for review. If it is found that the projects do not meet the Procuring Authority's requirements of what counts as R&D, the Project Company will have to reinvest the money spent.

### **Project Company Change of Ownership**

The Project Company went through a variety of changes in ownership guided by changes in the equity investors' legal structure and ownership. The changes had to be reviewed and approved by the Procuring Authority. The Procuring Authority does not believe they had a detrimental impact on the performance of the Project Company. When granting its approval for a change of ownership in the Project Company, the Procuring Authority's main concern was to ensure that the new equity investors were financially stable and technically capable to continue the operations of the project.

## **ROLE OF GOVERNMENT**

### **Facilitating Access to Low Interest Financing**

Since the 1940s, the Brazilian government has been supporting local development by providing flexible financing to developers. The main development bank in Brazil is the National Bank for Social and Economic Development (BNDES) which was founded in 1952. It offers loans at more favourable rates than commercial lenders.

The senior debt loan for the project was provided by BNDES. As BNDES is willing to take on more risk than private commercial banks, its financing solutions provided better and more attractive interest rates. The solutions provided by the bank made the project commercially feasible for the Project Company.

## **RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY**

### **Team Set-Up and Staffing**

The Procuring Authority generation team is a large team within the organisation, responsible for 200 large (greater than 30 MW) and 1,000 small hydropower projects. There are 40 people dedicated to administering the contracts and managing events such as changes and renegotiations, as well as 50 staff responsible for routine monitoring and operations. The Procuring Authority's team manages all contracts, and no dedicated teams are established for each individual project. The Procuring Authority believes it is adequately staffed, given its responsibilities.

### **Training and Development**

There is an annual training programme provided by the Procuring Authority to all its employees upon joining the organisation. The programme covers a wide range of skills considered key to successful management of PPP contracts. Thereafter, individual offices provide their own training programmes designed in line with specific staff requirements. These training programmes can be delivered either by experienced internal staff or by external training providers. Quite often, seminars, workshops and dedicated

courses are provided by international market leaders and institutions such as the Council on Large Electric Systems (Cigré), universities and equipment producers.

The Procuring Authority does not use a contract management manual. The required contract management skills are typically developed from on-the-job training and from experience and knowledge gained from completed and ongoing projects and academic publications.

### Communications

The relationship between the Procuring Authority and the Project Company is seen as transparent. The Procuring Authority recognises the importance of a good relationship with the Project Company and its positive effect on the success of the project. It was noted that transparency allows the Procuring Authority to help solve challenges faced by the Project Company.

The official communication between the parties is done through formal letters. However, more recently the Procuring Authority has introduced regular quarterly management meetings with Project Companies on all large contracts.

### KEY EVENTS

#### Delays in environmental permitting

The project faced significant delays due to environmental permitting. Delays to the start of construction, often for more than a year, were a major issue faced by many of the hydropower plants procured at the same time as this hydropower project. At this time, the Procuring Authority did not require an environmental assessment to be submitted with the bid, and the Project Company in question would find it difficult to get the required environmental licence in the time allowed after the contract award.

The licensing process is rigorous and requires significant research, and the requirements from the environment agencies also varied between national and state governments and from state to state. Additionally, as environmental permitting did not commence prior to signing of the PPP contract, the first time the licensing body saw the proposed design was when the Project Company submitted its application, after contract signature. This procedure increased the risk of delays, and a number of power plants were cancelled entirely. In this project, the PPP contract was not terminated, and the Project Company was given the additional time needed to obtain the required licences.

### LESSONS LEARNED

**Where there is a significant risk that the Project Company is not able to obtain the necessary licences, the Procuring Authority should have plans in place on how to handle resulting delays.**

It is common for energy generation plants in Brazil to encounter difficulties in obtaining the necessary permits or licences. If this risk has been transferred to the Project Company, the Procuring Authority needs to have a plan in place for managing the impacts of the delay, in particular, when it is due to factors outside the Project Company's control.

**Where approval is needed from an external body, such as an environmental regulator, it is advantageous to engage with that body as early as possible, preferably before financial close.**

Environmental licensing is a common challenge for project companies in Brazilian energy PPP projects. On the projects awarded at a similar time to this hydropower PPP contract award, five out of ten awarded projects failed to start construction and were subsequently terminated. To address this, the Procuring Authority has updated its procedures to require that the first of three stages of the environmental approval process is completed before the project is awarded. The new procedure is summarised below:

- The first stage is a design competition. Designers submit concept designs to the Procuring Authority, along with supporting environmental and social impact assessments;
- These concept designs are passed to the environmental regulator. The regulator's response states whether the project is feasible or not from an environmental point of view;
- If the regulator agrees that the concept design is feasible, the design receives the Procuring Authority's approval and the approved design goes ahead to procurement;
- If the regulator states that the concept design is not feasible, the designer is given an opportunity to submit re-designs addressing the issues of non-compliance and the procedure starts again;
- The second stage is the auctioning of the approved design. Bidders assess the proposed project design and submit their bids to obtain the right to build and operate the project and sell the generated energy. One of the bidders might include the original designer of the approved design but not necessarily. In the case the original designer is not part of the winning bid, the winning bidder is then required to reimburse the costs of the design development.

- Once the procurement phase is complete, the Project Company is still responsible for going through the remaining two stages of the environmental licensing process and the Project Company covers the costs associated with such environmental licensing.

**A clear understanding of the Project Company's financial performance is important for effective management of the operations phase.**

It was highlighted that the Procuring Authority did not have a clear view on the Project Company's financial performance. It was not clearly understood what the reasons were for the changes of ownership other than it was due to legal restructuring. Not having a clear view of the financial health and performance of the Project Company can put the Procuring Authority at risk of sudden insolvency of the Project Company.

Currently, the Procuring Authority is planning to include regular financial monitoring of the Project Company's performance in its remit. This will give the Procuring Authority the ability to assess the Project Company's financial difficulties and place itself in a position where it can better manage them.

**Policies to reduce demand risk on Project Companies can provide a more sustainable investment environment for PPPs and increased private sector participation.**

On early Brazilian PPP generation contracts, the Project Company was responsible for securing contracts to supply end users with electricity. This model did not provide high revenue certainty for the private sector as the market for large end-user contracts is not easy to forecast.

To remedy this issue and reduce the risk profile on Project Companies in energy PPP contracts, the Procuring Authority introduced a policy for future projects that provides a guarantee of a certain percentage of the generated energy to be bought by regulated utility providers. On new hydropower PPP projects, the Project Company signs two contracts; the first is the PPP contract, and the second is a PPA contract, which has a starting date approximately five years after the start date of the PPP contract. If the Project Company completes construction before the PPA start date, it can sell its electricity on the free market. Thus, in addition to allowing approximately five years to complete construction before the start of the PPA, this policy improved the revenue certainty for Project Companies, as regulated utility providers have more certain future demand.

**Public perception of environmentally sensitive projects, such as hydropower plants in Brazil, can impact the long-term success of the sector.**

The Procuring Authority noted that hydropower plants do not currently have a good reputation with regard to environmental impact, and that there are many stakeholders who wish to be involved in the discussions on future expansion of the sector. The Procuring Authority has responded to these concerns by improving its plans for the future development of hydropower plants, for example, by assessing what combination of plants would be a 'best fit' for a particular river and by involving environmental regulators at preliminary studies and planning for each individual project. How a central government addresses the energy needs at its national level is beyond the scope of this reference tool, however this example emphasises how stakeholder views can impact the direction and policy development of a sector.

**In a liberalised market, policies can be put in place to incentivise continuous innovation in energy efficiency from the private sector.**

The wire-charge mechanism generated substantial funds for investment in energy efficiency and research and development, which may not have occurred in a liberalised market without regulatory enforcement. The mechanism is therefore a tool that regulators can use to drive the private sector's involvement in improvement in the energy market.

**Having a Procuring Authority contract management team that sits across several contracts can increase efficiencies.**

The Procuring Authority generation team is a large team within the organisation, responsible for 200 large (greater than 30 MW) and 1,000 small hydro power projects. There are 40 people dedicated to administering the contracts and managing events such as changes and renegotiations, as well as 50 staff responsible for routine monitoring and operations. The Procuring Authority's team manages all contracts, and no dedicated teams are established for each individual project.

## BRAZIL

# Piracicaba 440/138kV Substation



## OVERVIEW

### Location

Piracicaba, Sao Paulo, Brazil

### Sector

Energy – Transmission

### Procuring Authority

Agência Nacional de Energia Elétrica,  
ANEEL (the Brazilian Electricity Regulatory Agency)

### Project Company

CPFL Transmissão Piracicaba S.A.

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

25 February 2013

### Capital Value

BRL \$109 million  
(USD \$53.5 million – 2013 exchange rate)

### Contract Duration

30 years

### Key Events

Delays in governmental permitting

## SUMMARY

The 440/138kV Piracicaba substation is a small facility situated in the inland region of Piracicaba in the state of Sao Paulo, Brazil, and is designed to connect 440kV high-voltage transmission lines that run through the state to the local grid. The project's entry into service was delayed due to permitting issues and, as a result, the Project Company submitted a request to extend the contract duration to take into account these delays. The Procuring Authority did not to grant an extension. The less complex contract led the Procuring Authority to recognise that smaller and less complex contracts could offer advantages in simplifying contract management.

## SUMMARY LESSONS LEARNED

- Optimising contract size and complexity is a key factor for effective contract management.
- Permitting can have a major impact on the construction duration, even for small-scale projects.
- Annual training across a programme of PPP projects can be an effective way to deliver structured training to contract management teams.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The goal of the construction of the Piracicaba substation is to connect the local grid to the national grid as part of a wider objective to improve the reliability of electricity services in Brazil. The facility is a step-down substation, meaning that it is designed to connect the 440kV high voltage transmission lines to the low voltage 138kV local grid. The substation is composed of two sectors: i) the first sector, or step, is the 440kV input lines into the substation and ii) the second sector, or step, is 138kV input lines into the local grid. As in all energy projects in Brazil, the goal of the partnership with the private sector is to further improve the reliability of the electricity grid by benefiting from the private sector expertise and transferring the construction risk to the Project Company.

### The Economic and Political Environment during Inception

The project was procured after the effects of the Global Financial Crisis had subsided, and before the economic challenges started in 2014. Brazil ended 2013 on a positive note with GDP growth exceeding economic forecasts, although the country was still suffering from mounting debt. Consequently, in mid-2014, when the global market sentiment turned against emerging markets with high external and fiscal imbalances such as Brazil, the economy experienced a steep downturn.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

Risks related to financing, design, construction and environmental permitting are generally transferred to the Project Company in Brazil, and the Procuring Authority is then responsible for monitoring the construction progress and the Project Company's performance. The Project Company took on responsibility for the design and construction of the asset according to the specifications set out in the PPP contract.

The Procuring Authority approves compliance of the design to the specifications of the PPP contract, and the Project Company is then responsible for securing the required construction permits and environmental permits to deliver the substation. The Project Company is also required to comply with the requirements of the national grid operator, Operador Nacional do Sistema Elétrico (the Grid Operator), as well as the owner of the high-voltage transmission lines.

The construction phase was agreed to be completed in 22 months, which included the time needed to obtain the required permits. However, obtaining the required permits took longer than anticipated, resulting in a 194-day delay. As a result, the Project Company incurred additional costs due to construction delays until the project entered operation.

The PPP contract has a fixed 30-year term (encompassing the construction and operations phases), and so any delays in construction reduce the length of the operations phase without an extension of time to the contract duration. In response to the delays during the construction phase, the Project Company requested that the contract duration be extended such that the operations phase remained of the length originally envisioned at commercial close. This was not accepted by the Procuring Authority, and the claim is now closed.

### Testing and Commissioning

The Grid Operator was involved in the commissioning of the substation, and was responsible for ensuring compliance by the Project Company with the Grid Operator's specifications and procedures. This is to protect the grid from damage and facilitate a smooth integration into the grid, as well as guaranteeing safe operation during the PPP contract period. The owner of the high-voltage transmission line was also involved in the testing and commissioning of the project.

No issues or disputes were faced during the testing and commissioning of the substation. The process was smooth and final approval was given by the Procuring Authority and Grid Operator to start commercial operation in July 2015.

### Operations Phase

The operations start date envisaged in the PPP contract was 25 December 2014. However, due to the delays faced in the construction phase, operation did not start until 7 July 2015. Since the start of the commercial operation of the project, no technical issues have been faced, and the Project Company has been receiving its availability payments. The Procuring Authority considers this project a success.

### Performance Monitoring and KPIs

#### Construction

The PPP contract sets key milestones that the Project Company is required to achieve. The key milestones, as set out in the PPP contract are:

- Start of Construction
- Start of Electromechanical Assembly
- Start of Commissioning
- Start of Commercial Operation

Failure to achieve the milestones can result in agreed compensation becoming payable to the Procuring Authority as well as the potential calling upon performance bonds.

The management and monitoring of the contract during the construction phase was done through management

meetings and a software system called SIGET (Sistema de Gestão da Transmissão / Transmission Management System) which tracks the main milestones during the development from financial close to commercial operation. Management meetings are usually held quarterly and, if necessary, site visits and inspections are performed.

Both the Procuring Authority and the Project Company have access to the SIGET software. The Project Company is required to update the project development progress data on a monthly basis to provide the Procuring Authority with visibility over the progress.

### **Operations**

The Procuring Authority's more active role in the monitoring of the project ends with the commissioning phase. Its role in the monitoring of the project is then scaled back to an oversight role whereby the Procuring Authority intervenes only if and when necessary. When the transmission line entered into service, the Grid Operator took over from the Procuring Authority the performance monitoring of the Project Company. The operation is monitored in real time and the associated performance monitoring reports are made available on the public domain.

### **Payment Mechanisms**

The payment mechanisms on Brazilian transmission PPP contracts are uniform across the projects and are availability based. The payment mechanism is such that no revenue is available to the Project Company until the asset is complete and the substation is in operation. This incentivises the Project Company to complete the construction phase in the agreed time.

The Project Company's base transmission revenue is set in the PPP contract, where it is referred to as the "allowed annual revenue" (RAP). The RAP is adjusted annually to take into account inflation, deductions and any other additional revenue (for example authorised expansion of the facilities). The RAP is broken down into monthly payments, and then further reviewed every five years to take into account any scope changes requested by the Procuring Authority, any instances of force majeure and certain other changes.

Deductions to the RAP are calculated using a mechanism referred to as the "PV". The deductions are calculated on the basis of duration of any unavailability of facilities, revenue of the facilities which are out of service, and also take into account whether the outages were planned or unplanned. The deductions are adjusted monthly and their annual cumulative total is limited to 12.5% of the RAP.

The Grid Operator (rather than the Procuring Authority itself) is responsible for paying the Project Company the RAP. The issuing of monthly bills to the users of the facility is also the responsibility of the Grid Operator, which takes

demand risk, and any non-payment of power bills should not affect the Project Company's revenue. The risk of non-payment of bills is low, as there is a large number of payers, and these groups are incentivised to pay their bills as failing to do so would result in a withdrawal of service.

## **ROLE OF GOVERNMENT**

### **Facilitating Access to Low Interest Financing**

The National Bank for Social and Economic Development (BNDES) was created to drive economic development in Brazil by providing attractive financing solutions for eligible projects. BNDES supports credit access and executes the Federal Government's credit policies for national or regional social and economic development. BNDES provided financing to the Project Company at improved rates, which contributed to strengthening the commercial viability of the project.

### **Land Acquisition**

The Project Company on substation projects is required to own the land, and land acquisition can be a challenge. In order to address this challenge, the government provides Procuring Authorities with the administrative power to expropriate land for public utilities and provide appropriate indemnification from the government.

The Procuring Authorities are empowered through an administrative act known as the Declaration of Public Utility. This act facilitates land acquisition for the purpose of the utility projects, preventing unnecessary delays to projects considered vital to providing a public service. The Project Company must own the land for substation projects, as opposed to transmission line projects where right of way is typically sufficient.

## **RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY**

### **Team Set-Up and Staffing**

The Procuring Authority's team is relatively small, and made of permanent ANEEL staff. The team consists of approximately three people at any given time. When needed, the team is supported by state lawyers and external financial advisors.

### **Training and Development**

There is an annual training programme provided by the Procuring Authority to its employees. The programme covers a wide range of skills considered key to successful management of PPP contracts.

While a training programme is provided, there is no contract management manual. The training is mainly provided based on experience and knowledge gained from completed and ongoing projects. Seminars, workshops and

dedicated courses are provided by international market leaders and institutions such as the Council on Large Electric Systems (Cigré), universities and equipment producers.

### Communications

The relationship between the Procuring Authority and the Project Company is transparent. The Procuring Authority recognises the importance of a good relationship with the Project Company and its positive effect on the success of the project. The Procuring Authority recognised that transparency in the relationship helps in solving challenges faced by the Project Company.

The official communication between the parties is done through formal letters. However, there are management meetings with the Project Company held every three months on this project, and every other contract managed by the Procuring Authority.

### KEY EVENTS

#### Construction Delays

Since the Procuring Authority considers the permitting period part of the overall construction period agreed in the PPP contract, the delays in the permits directly affect the construction duration. In the Piracicaba substation project, some governmental permits took longer than anticipated resulting in a 194-day delay to the start of construction. As per the PPP contract, the operations phase duration is automatically shortened by the length of these construction delays in the absence of a corresponding extension of the PPP contract.

The Project Company attempted to keep the original duration of the operations phase despite the construction delays as part of a claim for additional cost and time overruns during construction. The claim submitted by the Project Company was considered by the Procuring Authority.

The dispute resolution process on energy projects in Brazil is as follows:

- The Procuring Authority has absolute administrative authority in accepting or rejecting a claim;
- If the Project Company is not satisfied with the Procuring Authority's decision, the dispute is typically escalated straight to the judiciary.

This claim did not go beyond the first stage of the dispute resolution process. The Procuring Authority rejected the Project Company's claim and did not extend the contract duration of the PPP contract. The Project Company decided not to contest the decision, and as of the writing of this case study, this claim is resolved and considered closed.

### LESSONS LEARNED

#### Optimising contract size and complexity is a key factor for effective contract management.

The PPP contract is relatively small compared to other contracts managed by the Procuring Authority, such as transmission lines which tend to cover vast areas. The Procuring Authority highlighted that the size of the contract in this particular case had the advantage of being less complex and therefore easier to manage and less resource intensive. The Procuring Authority sees optimal complexity of the contract as one of the contributing factors for effective contract management, and it has therefore put plans in place to scale down future PPP contracts as appropriate, to ensure more effective contract management.

#### Permitting can have a major impact on the construction duration, even for small-scale projects.

This small-scale electricity substation project offered many advantages from the ease of contract management point of view. However, the project still suffered more than six months of delay to the start of its operations as a result of the delays related to governmental permitting issues. The risk associated with governmental permits should not be underestimated on a project of any scale.

#### Annual training across a programme of PPP projects can be an effective way to deliver structured training to contract management teams.

There is an annual training programme provided by the Procuring Authority to its employees. The programme covers a wide range of skills considered key to successful management of PPP contracts. All the seminars, workshops and dedicated courses are provided by international market leaders and institutions such as the Council on Large Electric Systems (Cigré), universities and equipment producers.



## BRAZIL

# 500kV Tucuruí-Jurupari Transmission Line



## OVERVIEW

### Location

Tucuruí to Jurupari, Brazil

### Sector

Energy – Transmission

### Procuring Authority

Agência Nacional de Energia Elétrica  
(the Brazilian Electricity Regulatory Agency)

### Project Company

Linhas de Xingu Transmissora de Energia Ltda.

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Commercial Close

10 October 2008

### Capital Value

BRL 926.4 million  
(USD \$423.2 million – 2008 exchange rate)

### Contract Duration

30 years

### Key Event

Dispute – caused by permitting delays, insolvency of Project Company's parent company

## SUMMARY

The Procuring Authority, Agência Nacional de Energia Elétrica or ANEEL, signed a PPP contract in 2008 with the Project Company, Linhas de Xingu Transmissora de Energia Ltda., to design, build, finance, operate and maintain a transmission line between Tucuruí and Jurupari in Brazil. The transmission line project is a large scale high-voltage transmission project that runs through the Amazon forest. The line runs through six municipalities, and connects three substations to the national grid.

Challenges related to environmental permitting, environmental conditions, adverse site conditions, tropical weather and protests during the construction phase of the project caused significant delays and have had a substantial impact on the Procuring Authority's approach to future PPP contracts with respect to estimating construction timelines for transmission projects. The Procuring Authority has since introduced additional clauses in its transmission line PPP contracts in order to better manage the risks which caused the delays in the Tucuruí to Jurupari project. The project is a good example to demonstrate how lessons learned during PPP contract management can inform the structuring of future similar projects.

## SUMMARY LESSONS LEARNED:

- Lessons learned during PPP contract management can and should inform the structuring of future similar projects, such as relating to environmental permits.
- The financial stability of the Project Company should be monitored as it could provide an early warning of future risks.
- Annual training across a programme of PPP projects can be an effective way to deliver structured training to contract management teams.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The transmission line connects three substations (Tucuruí Substation (500/230kV), Xingu Substation (500/230kV) and Jurupari Substation (500/230/69kV)) to the national grid as part of a wider objective to connect a number of isolated cities to the national grid, improve the reliability of the national grid and reduce fossil fuel power generation. The line runs through the difficult terrain of the Amazon and covers a linear distance of approximately 527 kilometres. The construction of such a large project through difficult terrain like the Amazon carries with it significant risks, such as environmental permitting, adverse site conditions, tropical weather and protests. These types of energy transmission projects in Brazil are often delivered in partnership with private partners transferring risks such as environmental permitting, financing and construction to the private partner. This project is an example of this type of a contract.

There have been two other similar PPP contracts signed under the broader objective, which cover more than 900 km of transmission lines and five additional substations.

### The Economic and Political Environment during Inception

The project was procured at the beginning of the Global Financial Crisis in 2008. As a result, the auction was delayed in the hope that financial conditions would improve. However, when it became evident that there is no short-term solution to the effects of the Global Financial Crisis, the auction process was re-initiated, and the PPP contract awarded.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

The risks related to financing, design and construction and environmental permitting in relation to the transmission lines are generally transferred to the Project Company. The Procuring Authority is responsible for monitoring the construction progress and the Project Company's performance. The Project Company is responsible for the

design and construction of the asset according to the specifications set out in the PPP contract. The Procuring Authority approves compliance of the design to the specifications of the contract and the Project Company is then responsible for securing the required construction permits and environmental permits to deliver the transmission lines. The Project Company is also required to comply with the requirements of the national grid operator, Operador Nacional do Sistema Elétrico or "ONS" (Grid Operator).

The construction phase was agreed to be completed in three years, which included the time needed to obtain relevant environmental permits; the PPP contract assumed one year for securing environmental permits. However, the time for obtaining the required environmental permits took longer than anticipated, resulting in 754 days of delay on top of the original contemplated duration of 365 days. 570 days of this delay were due to environmental permitting issues, and 184 days were due to other issues such as environmental conditions, adverse site conditions, tropical weather and protests. These delays and how they were managed is covered in more detail below under the heading "Key Events".

The payment mechanism, as explained further below under the heading "Payment Mechanism", prescribes that the Project Company is not entitled to any revenue until construction has completed. As a result, the Project Company had to take on additional costs due to the construction delays, until the transmission line started operation.

The contract has a term of 30 years. This means, subject to any successful claims brought by the Project Company, delays in the construction "eat into" the operations phase having the effect of automatically reducing the duration of the operations phase. The Project Company has brought claims for economic and financial rebalancing with respect to the delays with the aim of extending the term of the contract (and as a consequence, extending the operations phase) and also seeking additional compensation. These claims are discussed in more detail below under the heading "Key Events".

### Testing and Commissioning

The Grid Operator was heavily involved in the commissioning of the transmission line. The Grid Operator was responsible for ensuring compliance of the Project Company with the Grid Operator's specifications and procedures. This is to protect the grid from damage, facilitate a smooth integration into the grid and guarantee safe operation during the PPP contract period.

No issues or disputes were faced during the testing and commissioning of the lines. The process was smooth and final approval was given by the Procuring Authority and the Grid Operator to start the commercial operation of the transmission line on 12 June 2013; except for two transformers (500/230kV) and a Static Volt Ampere Reactive Compensator in the Jurupari Substation, which

were approved some months later. The last facility to enter operation was the second transformer in Jurupari Substation, which entered operation on 8 November 2013.

### Operations Phase

The operations start date in the PPP contract was agreed as 16 October 2011. However, due to the delays faced in the construction phase, complete operations did not begin until 8 November 2013. Since the start of the commercial operation of the lines, no technical issues have been faced, and the project is considered to be a success by the Procuring Authority.

Since the start of the operations phase, the Project Company has been receiving payments as per the PPP contract. Additional to base transmission payments, the Project Company is allowed to generate revenue from other sources by providing transmission related services to other parties, on the condition that the profits are shared with the grid users. The grid users are all producers and consumers connected to the national grid; the producers being power plants with a capacity of over 30 MW, and the consumers being distribution companies and customers with loads of 5 MW or more.

Transmission related services include allowing other parties to benefit from the optical ground wire cables and providing operation and maintenance services to third parties. The details of the available third party service revenue and the revenue sharing arrangements with respect to that third party service revenue is further explained below in the payment mechanism.

### Performance Monitoring and KPIs

The PPP contract sets key milestones that the Project Company is required to achieve. The key milestones as set out in the PPP contract are:

- Start of Construction
- Start of Electromechanical Assembly
- Start of Commissioning
- Start of Commercial Operation

Failure to achieve the milestones can result in amounts becoming payable to the Procuring Authority as well as the potential calling upon of performance bonds.

The management and monitoring of the contract during the construction phase was done through management meetings and a software system called SIGET (Sistema de Gestão da Transmissão / Transmission Management System) which tracks the main milestones during the development from financial close to commercial operation. Management meetings are usually held quarterly and, if necessary, site visits and inspections are performed.

Both the Procuring Authority and the Project Company have access to the SIGET software. The Project Company

is required to update the project development progress data on a monthly basis to provide the Procuring Authority with visibility over the progress.

The Procuring Authority's more active role in the monitoring of the project ends with the commissioning phase. Its role in the monitoring of the project is then scaled back to an oversight role whereby the Procuring Authority intervenes only if and when necessary. When the transmission line entered into service, the Grid Operator took over from the Procuring Authority the performance monitoring of the Project Company. The operation is monitored in real time and the associated performance monitoring reports are made available on the public domain.

### Payment Mechanisms

The payment mechanism is such that no revenue is available to the Project Company until the asset is complete and the transmission line is in operation. This incentivises the Project Company to complete the construction phase in the agreed time.

The Project Company base transmission revenue is set in the PPP contract, where it is referred to as the "allowed annual revenue" (RAP). The RAP is adjusted annually to take into account inflation, deductions and any other additional revenue (for example authorised expansion of the facilities). The RAP is broken down into monthly payments, and then further reviewed every five years to take into account of any scope changes requested by the Procuring Authority, any instances of force majeure and certain other changes.

The deductions to the RAP are calculated using a mechanism referred to as the "PV". The deductions are calculated on the basis of duration of any unavailability of facilities, revenue of the facilities which are out of service, and also take into account whether the outages were planned or unplanned. The deductions are adjusted monthly and their annual cumulative total is limited to 12.5% of the RAP.

The Grid Operator (rather than the Procuring Authority itself) is responsible for paying the Project Company the base transmission revenue. The issuing of monthly bills to these users is also the responsibility of the Grid Operator, which takes demand risk, and any non-payment of power bills should not affect the Project Company's revenue. The risk of non-payment of bills is low, as there is a large number of payers, and these groups are incentivised to pay their bills as failing to do so would result in a withdrawal of service.

Additional to base transmission payments, the Project Company is allowed to generate revenue from other sources by providing transmission related services to third parties, on the condition that the profits are shared with the grid users in the form of reduced bills in the following months. The payment for the transmission related services

provided also comes from the users and beneficiaries of the transmission line, specifically power generating companies, distribution companies as well as certain consumers of power (such as industrial users).

## ROLE OF GOVERNMENT

### Facilitating Access to Low Interest Financing

There are two Brazilian development banks, the National Bank for Social and Economic Development (BNDES) and Banco da Amazônia. Banco da Amazônia is a public commercial bank focused on supporting development in the Amazon by providing attractive financing solutions for the eligible projects. Unlike the BNDES, Banco da Amazônia is a commercial bank where the government is the majority shareholder.

The senior debt loan for the Tucuruí-Jurupari transmission line was provided by Banco da Amazônia. As Banco da Amazônia is willing to take on more risk than private commercial banks, its financing solutions provided better and more attractive interest rates. The solutions provided by the bank made the project commercially feasible for the Project Company.

### Right of Way

Right of Way can be a major challenge for transmission line projects such as this one. In order to address this challenge, the government provides procuring authorities with the administrative power to expropriate land for public utilities, if necessary. The relevant law facilitates Right of Way for the purpose of the utility project, preventing unnecessary delays to the project and other projects considered necessary to provide a public service. Ownership of the land is maintained by the previous owner, and payment for this right with some use restrictions is approximately 30% of the value of the land. The Project Company is required to purchase land needed for the substations only.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

### Team Set-Up and Staffing

The Procuring Authority's team consisted of approximately three technical people, as engineers, at any given time. When needed, the team is also assisted by specialists and supported by state lawyers and external financial advisors.

### Training and Development

There is an annual training programme provided by the Procuring Authority to its employees. The programme covers a wide range of skills considered key to successful management of PPP contracts. All the seminars,

workshops and dedicated courses are provided by international market leaders and institutions such as Cigré (the Council on Large Electric Systems), universities and equipment producers.

While a training programme is provided, there is no project specific contract management manual. The relevant contract management training is mainly provided based on experience and knowledge gained from completed and ongoing projects and academic publications.

### Communication

The relationship between the Procuring Authority and the Project Company is fairly transparent. The Procuring Authority recognises the importance of a good relationship with the Project Company and its positive impact on the success of the project. It was pointed out that transparency allows the Procuring Authority to help to solve challenges faced by the Project Company.

The official communication between the parties is done through formal letters, as required by the Brazilian administrative system. There are also management meetings held every three months.

## KEY EVENTS

### Dispute – Construction Delays

The construction phase faced a two year delay due to multiple reasons including delays related to environmental permitting and associated conditions, adverse site conditions, tropical weather and protests. The majority of the delay was due to the environmental permitting taking significantly longer than expected. As a result of the delays, the revenue earning period was reduced since the contract period was fixed (subject to any successful economic and financial rebalancing claims).

Before the full entry into operations, the Project Company submitted a formal claim to the Procuring Authority for economic and financial rebalancing. The Project Company claimed a loss of BRL 418 million, which would have required an increase of 45% in the RAP to cover. The requested compensation and rebalancing was based on several claims, including in relation to: 19 months of delay to obtain environmental permits, additional construction costs caused by work stoppage due to tropical weather, compliance with additional environmental conditions, delays due to social protests and cost overruns on the erection of the towers crossing the Amazon river and interfacing issues with the Belo Monte power plant. In addition, the Project Company was also requesting a contract renegotiation with respect to the profit share mechanism on the PPP contract with respect to third party services and from the sale of carbon credits.

After reviewing the basis of the petition, the Procuring Authority concluded that responsibility for construction delays was with the Project Company as it had agreed to take on the construction risks when signing the PPP contract. The Procuring Authority also decided to continue with the requirement to share profits earned from third party services; however, it was agreed that the Project Company is not obligated to share its profits from carbon credit trading.

As the parties could not reach an agreement on all claims, the Project Company escalated the dispute to court in accordance with the dispute resolution mechanism defined in the contract. As of the writing of this case study, the dispute is still in court.

### **Insolvency of Project Company's Ultimate Parent Company**

On 4 July 2017, the Project Company's ultimate parent company, Isolux Corsan, filed for bankruptcy in its home country, Spain. This triggered the sale of some of its subsidiary companies around the world. Isolux Corsan, at the time of writing this case study, had retained some Brazilian subsidiaries which are still in operation.

The Project Company, Linhas de Xingu Transmissora de Energia Ltda., which is an indirect subsidiary of Isolux Corsan, is a Brazilian company set up in order to qualify for Brazilian transmission contracts which requires it to operate exclusively in electricity transmission. The sell-off of Isolux Corsan's subsidiaries is still underway and so it is likely a change of ownership of the Project Company will occur at some stage.

## **LESSONS LEARNED**

### **Lessons learned during PPP contract management can and should inform the structuring of future similar projects, such as relating to environmental permits.**

The project highlighted an important issue with the typical timeframes that the Procuring Authority had previously set for the construction phase of its PPP contracts. Allocating the full risks related to delays caused by environmental permitting to the Project Company may not be appropriate, as the requirements can vary significantly from one administration to another. The Procuring Authority recognised that the timelines it prescribed for project companies to acquire permits and complete construction works may not always be appropriate.

New PPP contracts now define the environmental permitting as a shared risk and allow more time for permitting. The project is a good example to demonstrate how lessons learned during PPP contract management can inform the structuring of future similar projects.

### **The financial stability of the Project Company should be monitored as it could provide an early warning of future risks.**

In this project, the Project Company has a great deal of freedom to manage its business without the involvement of the Procuring Authority. Financing arrangements, project costs and detailed financial performance information are not shared with the Procuring Authority. This has not presented any major issues so far; however, when a Project Company or its shareholders are in financial distress, the Procuring Authority feels that its ability to provide support and ensure the success of the project is limited by the lack of knowledge.

Here, the ultimate shareholder of the Project Company is currently the subject of insolvency proceedings and the Procuring Authority will find itself in a difficult position if that were to affect the Project Company. The Procuring Authority may not have the same opportunity to prepare for, or mitigate against the risks associated with such an event because of the lack of detailed information on the financial position of the Project Company.

### **Annual training across a programme of PPP projects can be an effective way to deliver structured training to contract management teams.**

There is an annual training programme provided by the Procuring Authority to all its employees across a programme of projects. The programme covers a wide range of skills considered key to successful management of PPP contracts. Thereafter, individual teams/offices provide their own training programmes designed in line with specific staff and project requirements. These training programmes can be delivered either by experienced internal staff or by external training providers. Quite often seminars, workshops and dedicated courses are provided by international market leaders and institutions such as the Council on Large Electric Systems (Cigré), universities and equipment producers.

## CHINA

# Qiaoxi District Central Heating



## OVERVIEW

### Location

Qiaoxi District of Zhangjiakou Municipality,  
Hebei Province, the People's Republic of China

### Sector

Energy – Heat Supply

### Procuring Authority

Finance Bureau of Qiaoxi District,  
Zhangjiakou Municipality

### Project Company

Zhangjiakou Yuantong Huashen Heat  
Company Limited

### Project Company Obligations

Operate, Maintain, Finance and Transfer

### Financial Close

28 September 2015

### Capital Value

RMB ¥415 million  
(USD \$62 million – 2015 exchange rate)

### Contract Duration

25 years

### Key Events

Transition of operations staff to Project Company

## SUMMARY

The Qiaoxi District Central Heating project was procured as the second stage of a two-stage scheme to improve the heating supply in the Qiaoxi District of the Zhangjiakou municipality, Hebei Province of China. The first stage covered the majority of the construction required for the improvements, which included installing new boilers as well as decommissioning old boilers. This case study is focused on the second stage of this scheme, which comprises the PPP contract (described as a Transfer-Operate-Transfer contract) for the operation, maintenance and financing of the boilers, the associated hot water pipe network and the heat exchange stations, as well as the installation of two additional heating boilers during the contract period. The Finance Bureau of Qiaoxi District is the Procuring Authority, and Zhangjiakou Yuantong Huashen Heat Company Limited is the Project Company. The operations phase of the project started successfully at the end of October 2015.

## SUMMARY LESSONS LEARNED

- It is important to focus on the needs and concerns of project employees, especially when staff are transferred to the Project Company.
- Opposition from local communities due to unexpected costs should be resolved appropriately, with such measures to be fully considered at the project planning stage.
- Detailed arrangements and adequate preparation in advance of the transition between financial close and operations is vital to ensure utility services are delivered as scheduled by the PPP contract.
- By government having an equity interest in the Project Company, it can typically appoint both a member of the board of directors and the head of the supervisory committee of the Project Company, giving it a greater level of monitoring and influence over the project.
- The experience of the private sector can help government staff to gain valuable skills and training in PPP contract management.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

Zhangjiakou has favourable conditions for central heating, as the municipality is relatively concentrated and much of the infrastructure is already in place. However, the management and operations of the services had historically been poor. A lack of maintenance and monitoring of the heating boilers led to increasing levels of sulphur dioxide pollution, and the operations of the service had become increasingly inefficient. Not only had the installation of boilers been poorly planned in the past, but local users had also independently installed their own small boilers. Zhangjiakou Hengfeng Heating Company (ZHH), the state-owned enterprise which had been operating the service for five years, had also accumulated significant debt, mainly due to uncollected pipeline installation fees and user charges.

In 2009, the regional government initiated a central heating improvement initiative, split into two stages. The first stage covered the majority of the construction works, which included the installation of eight new 70MW heating boilers, the supporting hot water pipe network, and the construction or transformation of 79 heat exchange stations. 290 small boilers in the district were also shut down. The second stage covered the operations, maintenance and financing of the outputs of the first stage, and is being delivered under the PPP contract, which is the focus of this case study.

In 2014, the Finance Bureau of Qiaoxi District initiated a competitive bidding process for the project. In 2015,

Beijing Yuantong Heat Company Limited (BYHC), a private company specialising in heat supply and management, was selected as the preferred bidder and subsequently set up the Project Company. ZHH, acting as the representative of the government, signed the PPP contract with the Project Company. The arrangements under the PPP contract include the transfer of assets from ZHH to the Project Company, which is then responsible for operations and maintenance for a period of 25 years and, after that, the assets are transferred back with no cost to the government.

The ownership of the Project Company is 90% by BYHC and 10% by the Qiaoxi District government. Under the PPP contract, the Project Company will provide improved heat supply services with an extended coverage to new areas, undertake management and maintenance of the central heating facilities, and install two additional heating boilers during the contract period.

### The Economic and Political Environment during Inception

In 2014 and 2015, the Ministry of Finance of China and the National Development and Reform Commission of China issued a series of guidelines to promote better cooperation between government and commercial entities. These emphasised that the involvement of commercial entities brings in expertise in managing risks throughout the project lifecycle, with additional improvements in technology and efficiency. There was a perception that there was a lack of competitive market pressure in infrastructure delivered by the government, as well as a lack of expertise within government organisations.

The use of the PPP model was chosen to strengthen management practices and improve project efficiency and its consequent profitability. Raising private finance from commercial entities would also help the government to free up capital for other utility projects. The involvement of commercial entities was intended to promote technology transfer and help improve the skills of government employees. This would also help the government improve management of future infrastructure projects.

## MANAGEMENT OF THE PPP CONTRACT

### Transition from financial close to operations

The main challenge the Project Company faced in the transition from financial close to operations was to ensure that the heating services continued uninterrupted. The risks involved were related to sudden weather changes, which had the potential to suddenly increase demand on heating services. The Project Company prepared itself for this by arranging for the storage of additional fuel, and by a number of BYHC's experienced maintenance employees from other municipalities providing assistance in commissioning equipment and pipelines in advance, and this was all completed two weeks ahead of schedule.

The Procuring Authority saw the benefit of developing a detailed plan in advance to assist in the asset transfer to the Project Company at financial close. During the tender process for the project, bidders including BYHC and its competitors had prepared to employ the relevant technical, financial, and legal expertise to carry out its due diligence and investigate the condition of the existing assets. This allowed it to undertake important work before financial close and helped ensure that there was no interruption in the services during the transition.

### Operations Phase

The first challenge that the project faced was the transition of staff who had previously been employed by ZHH prior to the transfer of responsibilities to the Project Company. The Project Company addressed the concerns of these staff in a number of ways, including by carrying out training and introducing a performance-based incentive scheme. This is described in further detail under the heading 'Key Events' below.

The beginning of the operations phase was successful, with the Project Company able to provide central heating for a longer period of time than what was available in preceding years, and the number of user complaints regarding heat supply dropping by 80%. The indoor average temperature in the district increased from 19.3°C to 21.4 °C, and the percentage of users who paid their bills increased from 80% to 93%. The area covered by the central heating service has increased by 20% due to the construction of the additional boilers, and the Project Company is expected to meet its 2020 coverage goal. After one heating operation period in 2015-2016, coal, electricity and water consumption were 80%, 50% and 70% respectively of the equivalent consumption figures over the same period in 2014-2015. It is estimated that 20% of the Project Company's revenue increase is due to cost savings as a result of reduced energy consumption.

### Performance Monitoring and KPIs

The PPP contract states that the Project Company is fully responsible for maintaining a high standard of heat supply services, and that it must take any necessary actions if an emergency were to occur. The primary performance indicators are that the temperature of at least 98% of the relevant households should meet the relevant heating standard, and that user satisfaction should not drop below 98%. There are termination rights in certain circumstances for the Procuring Authority should the Project Company not meet these standards.

The government began planning for the first interim review in September 2017 to cover the first two years of operations. With well-designed assessment criteria, the interim review will be conducted by a third party and focus on the management of the Project Company.

### Payment Mechanisms

The income of the Project Company comes from user tariffs for the heating supply, central heating pipeline connection fees, and other operational revenues. The level of tariffs as well as its adjustment is set by the Zhangjiakou Municipal Government, based on national, provincial and local regulations and policy.

### Community and Stakeholder Engagement

Engaging with local communities has been an ongoing challenge for the project, particularly because users were required to remove their old and failing boilers. The users were unhappy about being required to bear all of the pipeline installation fees after this removal and put up significant resistance. Eventually this was resolved with the Project Company, the government and the users agreeing to share the expenses.

### ROLE OF GOVERNMENT

In 2014, the Ministry of Finance of China listed the project as one of the first 30 projects of the national demonstration programme of PPP projects, which gained the attention of more competent heating companies than ever before, enhanced its bankability and drove more competition in the bidding process. The application for the project to be listed in the national demonstration programme had been initiated by the Financial Bureau of Qiaoxi District and then reviewed and submitted by the Financial Bureau of Zhangjiakou Municipality, and subsequently by the Financial Department of Hebei Province to the Ministry of Finance of China.

As the local government does not have the relevant technical and managerial expertise in improving district heating project's efficiency and cost-savings, it relies on the 'know-how' and technical and managerial credentials of specialised market players in the respective field. The PPP contract management has been carried out smoothly at the time of writing the case study.

### RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

#### Team Set-Up and Staffing

The Procuring Authority exercises influence and monitoring by the virtue of its equity investment in the Project Company, and consequently its presence in the governance structure of the Project Company and its right to veto decisions on health and safety and environmental issues, as described below.

The Project Company governance structure consists of a shareholders' committee, a board of directors and a supervisory committee. The State-owned Assets Operation and Management Centre of Qiaoxi District of Zhangjiakou



Municipality (authorised by the Qiaoxi District government) and BYHC form the shareholders' committee, the highest authority of the Project Company that exercises the rights and responsibilities in accordance with the Company Law of China. The committee chooses the members of both the board of directors and the supervisory committee. Remuneration matters of members of both the board of directors and the supervisory committee also rest with the shareholders' committee.

There are five members of the board of directors, at least one of which must come from the government of the Qiaoxi District. Each member of the board of directors, including the Chairman, has one vote each when decisions need to be made. There are certain items, such as health, safety and environmental protection, where the government member has veto power. The supervisory committee consists of three members, one of whom must come from the government of the Qiaoxi District and act as the head of the supervisory committee. By the government of the Qiaoxi District having representatives on each committee and board, the Procuring Authority is able to monitor the performance of the Project Company, as well as play a role in making key decisions in relation to the project.

The training for the Procuring Authority staff is primarily 'on the job' training, with employees learning from the technical expertise of BYHC. This was emphasised as operations began, as it was an effective way to improve relations between the Procuring Authority and the management of BYHC. There is no structured training programme in place for Procuring Authority staff.

### **Communications and Information Management**

The PPP contract states that the Project Company is obliged to provide information on its website, including a user safety manual, heating services and account information, as well as a complaint procedure. The Procuring Authority and Project Company staff are co-located and there are regular project meetings.

## **KEY EVENTS**

### **Transition to operations phase**

The most significant challenge that the project faced was the transition of staff who had previously been employed by ZHH prior to the transfer of responsibilities to the Project Company. The Project Company was required under the PPP contract to continue to employ all staff, and to ensure the employment conditions were compliant with national standards. Although this had been agreed, the ZHH staff were nonetheless anxious about the change. These concerns were related to differences in management style which they might not be able to adapt to, their long-term career development, as well as the pay and benefits they would receive.

The Project Company managed these concerns in a variety of ways. It focused on communication at management-level, as well as conducting training to enhance the employees' relevant technical skills. In addition, the Project Company introduced an incentive scheme to strive for continuous improvement in service performance and enhance employee morale. This scheme consisted of, for example, measuring the water and energy consumption of each heat station and calculating the cost savings achieved by the reductions in its water and energy consumption over a period of time. Those cost savings were then shared with the staff at the relevant station. There were also bonuses paid to the staff of the station which achieved the greatest savings. In addition, it was agreed in the PPP contract that Project Company employees' salaries should be higher than the average level of the whole central heating sector of the Zhangjiakou Municipality, and that employees protected by specific employment regulations, e.g. veterans, should be offered a long-term employment contract if they do not violate the rules of the Project Company.

## **LESSONS LEARNED**

**It is important to focus on the needs and concerns of project employees, especially when staff are transferred to the Project Company.**

The PPP contract required that the Project Company retain the employees of the existing operators, who were understandably anxious about the change. The Project Company addressed staff concerns by introducing 'on the job' training, as well as an incentive-based performance regime. By focusing on the concerns of the staff, the Project Company was able to motivate them to continue providing a high-quality service.

**Opposition from local communities due to unexpected costs should be resolved appropriately, with such measures to be fully considered at the project planning stage.**

Small boilers, which had been installed by users over the preceding years, needed to be removed as they were inefficient and causing pollution. Initially, such users were expected to bear all the new pipeline installation fees, however after resistance, the government agreed to share the costs. Any unexpected costs are unlikely to be welcomed by the local community, and this must be taken into account when project planning takes place.

**Detailed arrangements and adequate preparation in advance of the transition between financial close and operations is vital to ensure utility services are delivered as scheduled by the PPP contract.**

The Project Company was required under the PPP contract to provide heating services no later than the regular date of commencement of heating in the district. Between this date and financial close being reached there was only about one month for the Project Company to prepare for the transition to operations, one third of the usual time required. By arranging for the storage of additional fuel, and by a number of BYHC's experienced maintenance employees from other municipalities providing assistance in advance, the Project Company was able to carry out the transition without interruption to the services.

**By government having an equity interest in the Project Company, it can typically appoint both a member of the board of directors and the head of the supervisory committee of the Project Company, giving it a greater level of monitoring and influence over the project.**

There are five members of the board of directors, at least one of which must come from the government of the Qiaoxi District. Each member of the board of directors, including the Chairman, has one vote each when decisions need to be made. There are certain items, such as health, safety and environmental protection, over which the government member has veto power. The supervisory committee consists of three members, one of whom must come from the government of the Qiaoxi District and act as the head of the supervisory committee. With the government of the Qiaoxi District having representatives on each committee and board, it is able to monitor the performance of the Project Company, as well as play a role in making key decisions in relation to the project.

**The experience of the private sector can help government staff gain valuable skills and training in PPP contract management.**

The training for the Procuring Authority staff is primarily 'on the job' training, with employees learning from the technical staff of BYHC. This was emphasised as operations began, as it was an effective way to improve relations between the Procuring Authority and the management of BYHC. There is no structured training programme in place for Procuring Authority staff.

## COLOMBIA

## Barranquilla Airport



## OVERVIEW

**Location**

Barranquilla, Colombia

**Sector**

Transport – Airports

**Procuring Authority**

ANI (Agencia Nacional de Infraestructura)

**Project Company**

Grupo Aeroportuario del Caribe SAS

**Project Company Obligations**

Design, Build, Finance, Operate and Maintain

**Financial Close**

September 2015

(credit agreement signed in March 2016)

**Estimated Capital Value**

COP \$345 billion

(USD \$144 million – 2015 exchange rate)

**Contract Duration**

15 years (can be extended up to 20 years to reach contractual Net Present Value (NPV))

**Key Events**

Concentration of construction activities during a relatively short initial period, challenges with KPIs during construction

## SUMMARY

The Barranquilla Airport PPP consists of the expansion and operation of the airport in one of the major cities on the Atlantic coast of Colombia. It involved substantial construction works, including remodelling of the terminal and rehabilitating the runway while the existing airport was still in operation. As this project was the first airport PPP following the passing of the PPP law in 2011, the Procuring Authority adopted lessons learned from this project to inform future procurement. The project has been successful, with the first and most important phase of construction due to finish by the end of 2018. There have been a number of challenges relating to KPIs and their application during the operations phase while construction has been ongoing; and the parties have been able to overcome the challenges by working together.

## SUMMARY LESSONS LEARNED

- For brownfield projects which are in operation during construction activities, operational KPIs should be tailored to reflect the difficulties of operating during construction as opposed to during the steady operational phase.
- Provision in the PPP contract setting out a process to adjust the KPI methodology may be useful to facilitate agreed adjustments based on review by all parties.

- Workshops and continued coordination between staff involved in structuring and those joining after contract award are useful in ensuring knowledge transfer.
- It is beneficial to provide adequate incentives for the Project Company to complete construction on time.
- Heavy concentration of construction activities during a limited period, especially when carried out on an operational asset, requires well-planned management and monitoring to overcome the intrinsic challenges associated with uneven distribution of capital works.
- Lessons learned from contract management should inform future procurement.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

Barranquilla is a major economic centre on the Atlantic coast of Colombia, with a major port and links to other regional centres. It has experienced substantial growth in recent years, and it was recognised that the transport infrastructure needed to improve to meet growing demand. As the largest airport in the Atlantico department of Colombia, with traffic of 2.6 million passengers a year, it was also recognised that the quality of Barranquilla Airport needed to improve to reach international standards and better serve the region. Barranquilla Airport serves domestic and international travellers with direct routes to Miami and Panama. For this reason, the decision was made to redevelop the airport using a PPP contract, with construction and operations to take place concurrently for the first three years.

The construction work to be delivered includes the improvement of the domestic and international terminal, as well as the construction of a corporate terminal. The runway was fully rehabilitated and repaved as part of the PPP scope.

### The Economic and Political Environment during Inception

The Colombian economy has been expanding since the early 2000s, with exports including petroleum, coffee and flowers becoming a major component of economic growth. Colombia has a long history of private sector involvement in infrastructure, and the Procuring Authority, ANI, was created in 2011 as part of the central government's goal of improving infrastructure provision in the country.

The PPP law was passed in 2011, while the history of concessions in Colombia has been longer and was based on the existing concessions law which predates 2011.

This PPP law sets the guidelines that should be used by any governmental agency when contracting under a PPP scheme. This law was based on international

best practices, as well as on lessons learned from Colombia's long experience of managing concession contracts. The new legal and institutional framework enabled Colombia to structure and procure an important number of PPP projects in the past few years with the ambition to close its transportation infrastructure gap and improve its competitiveness.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

Achieving financial close was challenging for the Project Company, partly due to the fact that it was the first airport PPP contract signed by ANI according to the 2011 PPP law. From the Procuring Authority's point of view, a first financial close was reached in September 2015, however the contract did not stipulate the requirement to have a signed credit agreement between the project company and its lenders. To achieve this contractual milestone, the Project Company was not required to have committed financing in place; instead, it needed a letter of credit from its selected lenders to show their willingness to finance the project, which was not binding. In this case, the main lender is CAF, the Latin American development bank, who took some time to complete its due diligence, in particular on the project's social and environmental impact. Financing was finally agreed in March 2016, and in the meantime, the Project Company had to fund the project's operations using solely equity.

There were a number of challenges which arose during the construction phase of this project. The most significant of these was related to the airport master plan. Normally this would be made available to bidders during the procurement phase, to allow them to develop an understanding of the state of the airport at that point in time. On this project, an up-to-date master plan was not available, and therefore had to be developed during the pre-construction phase. The master plan was necessary in order to finalise the design and its completion led to, among other changes, a change of the cargo terminal location, the terminal expansion size and the location of the Maintenance, Repair and Overhaul area (MRO). Those changes did not have construction time or cost implications. The delay in developing and approving the master plan is currently the subject of a claim by the Project Company seeking a time extension, and at the time of writing, this claim was being assessed by the Procuring Authority. The time extension would allow the construction to be completed without breach of contract by December 2018.

At the time of writing the case study, construction is ongoing, and is due to finish at the end of 2018. There have been some delays, with certain elements which had been due to be completed in June 2018 but are now due to finish

in December 2018; however, this has not extended the final completion date of the contract.

The other challenge during construction was related to the large amount of construction work which needed to be completed in a relatively short period of time, and which had to take place while the airport was fully operational. The capital expenditure for the project was divided into eight periods, the first of which covered the three years between financial close and June 2018. 60% of the capital works (by value) were to be completed in this period, which covers only 20% of the overall project timeframe. This also required the development and installation of important provisional facilities, which was costly.

### Operations Phase

As this was the first airport PPP project in Colombia that was based on the PPP law passed in 2011, KPIs linked to revenue were introduced for the first time. Previous concessions did not have similar KPIs, which consequently created some challenges for the Project Company in terms of its ability to adapt to the new performance standards. For example, the same KPI measurements were applied during both the full, steady-state operations and the construction period. The Procuring Authority considers that in future PPP contracts, the KPI measurement methodology should be differentiated between construction and operation in order to take into account the challenges of operating and expanding the airport at the same time. This is explained further under the heading "Performance Monitoring and KPIs".

### Performance Monitoring and KPIs

The Project Company's performance on the Barranquilla Airport is monitored in such a way that it only receives full operational revenue when it meets the relevant KPIs. The Procuring Authority developed these KPIs by investigating best practice around the world before developing the PPP contract, however there have been some challenges relating to the measurement of KPIs during construction. The performance measures are the same for the entire contract duration, even though for the first three years there are construction works occurring at the same time as operations of the airport.

A second challenge with the performance monitoring of this project was related to the KPI assessing client satisfaction. As the measure for satisfaction was based on customer surveys, the parties felt that it was not appropriate to link revenue to this kind of qualitative measure and that the KPI should be based solely on factors that the Project Company can control. The Procuring Authority and Project Company worked together to find solutions to these challenges that were acceptable to both parties.

The contract allowed for a revision of the methodology used to measure the KPI in order to adapt to the reality of the project. The review involved the Procuring Authority, the Project Company and the monitoring party (see more details below). An agreement was reached between the three parties.

To carry out its monitoring of the project, the Procuring Authority appointed an independent project monitoring party to be "its eyes and ears on the ground" in terms of checking that the contract is executed and complied with. The project monitoring party measures KPIs, reviews documentation submitted by the Project Company and submits monthly reports to the Procuring Authority. A risk register was created during the procurement phase, and the project monitoring party assists by reviewing it as part of its regular updating. The Procuring Authority is based in Bogota, and visits the project on a regular basis, however the project monitoring party is on site every day. The appointment of the project monitoring party is only with the Procuring Authority, and not with the Project Company.

### Payment Mechanisms

The primary form of income for the Project Company is revenue from the operations of the airport, and there are no subsidies from the Procuring Authority or government. The Project Company income includes regulated revenues, such as airport-related taxes, as well as non-regulated income from airport operations. At the time of writing, the Project Company's revenue is roughly in line with expectations.

The payment mechanism during construction is such that the Project Company only receives half of the revenue it earns during the construction phase, with the other half being held in an escrow account until construction is complete. The Procuring Authority sees this as a key to success, as it provides a strong incentive for the Project Company to complete construction on time. In previous brownfield projects, the Procuring Authority realised that operational revenue was being used to finance construction, and this was delaying progress. Incentivising prompt financing and construction was particularly important for the Barranquilla Airport, given the fact that a lot of construction work was due to be completed in a relatively short period of time. As this can result in significant financing costs for the Project Company, following a new law passed in 2018, future contracts will allow for more regular milestones permitting a more progressive release of revenue as the construction advances.

The PPP contract has a defined mechanism for the Procuring Authority to allow for an extension of time. The Project Company can request, and pay for, an additional three months to complete the construction.

Once this period has expired, the Project Company can present its case for an additional 60 days to complete any remaining, non-essential works. In the case of certain one-off events, the Project Company can also request a time relief in case of delays. There is no provision in the PPP contract for economic rebalancing; if any changes regarding the economics of the project are needed, they will have to be effected through contract renegotiation.

## ROLE OF GOVERNMENT

ANI, as the Procuring Authority representing the interests of the government, played a leading role during the pre-feasibility of the project, procurement and ongoing contract management. Created in 2011, the agency supervises “the end to end” project process, from planning and structuring to contract awarding, contract management and handback. This extended scope of work has allowed for greater accountability and continuity and an efficient process of continuous improvement. The Procuring Authority made efforts to learn from international best practice and is continuously evaluating the procurement process and contract management, implementing improvements based on lessons learned from projects in execution.

Even though many pre-construction activities are the Project Company’s responsibility under the current contract, the Procuring Authority supports the Project Company in certain pre-construction activities such as environmental licensing and land acquisition. This has allowed for smooth execution and has helped to avoid delays.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

### Team Set-Up and Staffing

The contract management team consists of three people with technical backgrounds (i.e. contract manager, relationship manager and performance manager) who oversee two PPP projects. These people manage the relationship between the project monitoring party and the Project Company and review all reports and claims that are submitted to the Procuring Authority. They come from a technical background and have a good understanding of airport operations, as well as PPP contracts. The Procuring Authority also has central support teams which provide advice and assistance to all contract management teams within ANI on specific matters, which require legal, social, environmental, financial and risk expertise.

The three contract managers who work on this project all joined at contract award. To assist with knowledge transfer, workshops were carried out with these employees,

representatives from the ANI central knowledge teams and the people who structured the PPP contract (the ANI structuring team and an external consultant appointed to advise on contract structuring). This assisted in passing on knowledge from those who knew the background and intricacies of the contract to those who were going to be in charge of managing it. The external consultants involved in the structuring worked hand-in-hand with the Procuring Authority for six months after contract signing; those advisors also provide ad-hoc support now, as and when necessary.

Given the challenges associated with knowledge transfer, the Procuring Authority is contemplating extending the support from the external consultant beyond the typical six months which is current practice.

### Training and Development

In addition to training and participation in local and international workshops, the ANI team in charge of airport contract management is attending cross training sessions with Aerocivil agency’s personnel to transfer knowledge and share experiences.

### Communications

There is a management committee that meets every 15 days to discuss issues that arise and to help develop solutions. The parties represented in these discussions are the Procuring Authority, Project Company and the project monitoring party, as well as the airport authority when relevant. The Procuring Authority representatives are the contract managers, as well as others from support teams when required based on the topic of discussion. The Procuring Authority sees this process as useful, as it is agile and every party is present.

## KEY EVENTS

In an attempt to complete construction works promptly within an operational airport, construction was concentrated in the first three years of the contract period, in terms of both the intensity and quantum of works as well as the capital value. This uneven distribution of capital works created challenges for both parties in terms of managing and monitoring the works.

The parties agreed that the KPIs adopted from international leading practice should have been differentiated during construction and operations. A solution to this issue was adopted through an agreement to review the methodology to measure KPIs in order to reflect the reality of construction and operations being carried out at the same time. For example, the measurement of customer satisfaction was adjusted during construction.

The parties have worked together to overcome the challenges and have agreed on a solution that meets their respective objectives.

## LESSONS LEARNED

**For brownfield projects which are in operation during construction activities, operational KPIs should be tailored to reflect the difficulties of operating during construction as opposed to during the steady operational phase.**

It is challenging for the Project Company to meet operational KPIs while carrying out construction works concurrently. For this reason, it is preferable for the KPI measurement methodology during the construction phase to be adapted to the challenge that this period presents for the project.

**Provision in the PPP contract setting out a process to adjust the KPI methodology may be useful to facilitate agreed adjustments based on review by all parties.**

As outlined above, the contract allowed for a revision of the methodology used to measure the KPIs in order to adapt to the situation faced when operating the project. The review and agreement reached involved the Procuring Authority and the Project Company, as well as the appointed monitoring party.

**Workshops and continued coordination between staff involved in structuring and those joining after contract award are useful in ensuring knowledge transfer.**

To assist with knowledge transfer, workshops were carried out with new staff joining after contract award, representatives from the ANI central knowledge teams, and the ANI team and consultants that structured the contract. The external consultants involved in the structuring, also worked hand-in-hand with the Procuring Authority for six months after contract signing and provide continued support, as and when necessary.

**It is beneficial to provide adequate incentives for the Project Company to complete construction on time.**

The Procuring Authority learned lessons from previous projects where the Project Company failed to carry out construction at the required rate of progress. For the Barranquilla Airport project, the Project Company does not receive its full revenue until construction is complete, and the Procuring Authority sees this incentive mechanism as an important factor in ensuring that construction progresses in accordance with the programme agreed in the contract.

**Heavy concentration of construction activities during a limited period, especially when carried out on an operational asset, requires well-planned management and monitoring to overcome the intrinsic challenges associated with uneven distribution of capital works.**

Carrying out construction activities on an operational asset is always a challenge due to the constraints of the working environment, disruptions created by construction activities and all associated impacts on health and safety, the environment, the level of service, etc. The objective is therefore to advance the majority of the construction works as much as possible, which then leads to uneven distribution of capital works. In this case, 60% of the value of the capital works was scheduled to be completed in period one, out of the total eight periods. This created particular challenges in terms of managing and monitoring the progress of construction works. To manage this situation, ANI increased the typical meeting frequency of the management committee from once a month to every two weeks. While the pressure to complete construction works as soon as possible will still lead to a heavy concentration of works during the first period, even in future contracts, the contracts are now structured to allow for tailored KPI methodologies for construction and operations and for a mechanism to adjust the contract if necessary to overcome the challenges emerging from unevenly distributed construction works.

**Lessons learned from contract management should inform future procurement.**

Lessons learned from PPP contract management should form a virtuous cycle with the project initiation and procurement where one phase is informing the other. The Procuring Authority in this case evaluated its future PPP procurement on the basis of lessons learned on KPIs and construction activities from this project. This becomes particularly important when a PPP project is the first of its type to be launched following a particular law. Although in this case the Procuring Authority adopted international leading practices, it became evident that it is important to adapt the KPI methodology to the local environment and carefully consider local practices, as practices which work well in some regions may not be successful everywhere and adaptations may be necessary.

JORDAN

# Queen Alia International Airport Expansion



Image: "Aerial view of the terminal after completion" by KRISTIN HOOVER, courtesy of Foster and Partners- Photographer Nigel Young / CC BY-NC-ND 3.0

## OVERVIEW

### Location

Zizya (30 km south of Amman), Jordan

### Sector

Transport – Airports

### Procuring Authority

Ministry of Transport – Project Management Unit

### Project Company

Airport International Group

### Project Company Obligations

Built, Operate and Transfer

### Financial Close

15 November 2007

### Capital Value

JOR 695 million  
(USD \$982 million – 2007 exchange rate)

### Contract Duration

25 years

### Key Events

Renegotiation, significant changes of scope

## SUMMARY

The Queen Alia International Airport in Jordan was expanded and renovated as part of efforts of the Jordanian Government to improve tourism and promote Jordan as a travel hub. The project encountered a range of challenges relating to the initial design, as well as the challenges associated with the expansion of an operational airport. The scope changes in the project required a renegotiation of the PPP contract, resulting in a financial contribution from the Procuring Authority, which was complemented by higher than expected traffic volumes and associated project revenue.

The project also highlights how a dedicated project team helps protect the project from ongoing political changes, and how continuity of knowledge is secured through retention of key staff. The project is a good example to highlight the importance of involving end users at an early stage and the challenges in changing the workforce culture, from public to private service delivery.

## SUMMARY LESSONS LEARNED

- Early involvement of stakeholders may avoid having to undergo significant changes in scope, resulting in delays and cost overruns.
- Setting up a dedicated project team may help to mitigate risks from political and institutional changes.



- Involving end users in the construction works can streamline the progress of construction and facilitate a fast transition from one stage to another.
- Flexibility and commitment of the Procuring Authority to deal with unforeseen circumstances can have a significant positive impact on the overall success of a project.
- Early and robust transition planning will make transition phases more efficient.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

Prior to this project, Queen Alia International Airport was handling 5.5 million passengers a year, despite having a design capacity of only 3.5 million. It was ranked as one of the worst airports to visit in the world, with outdated structures and poor customer experience. This situation led the government to decide to upgrade the airport and increase its capacity, with recognition from the outset that customer experience was an important factor in the success of the project.

### The Economic and Political Environment during Inception

Two years before financial close and one year before the tender was announced, the Jordanian government adopted a comprehensive ten-year national agenda. It was an ambitious plan to build the country's economy through political and financial reforms, which included promoting partnerships between the public and private sectors and enabling the private sector to play a major role in the local economy. Development of physical infrastructure was a pillar of the agenda.

The aim to facilitate partnerships between public and private sectors combined with the physical infrastructure pillar facilitated the involvement of the private sector in driving the economy. The aviation sector was restructured by privatising the operation of airports and forming the Civil Aviation Regulatory Commission. As a result, the Queen Alia International Airport PPP was planned and announced for tendering.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

Construction was planned in two stages. Stage one included building the main terminal and its nine gates, followed by stage two, which was to complete the entire footprint of the building with additional gates. In total, the design of the airport included 25 gates. Only 17 gates would have a passenger access bridge installed, with the rest put on hold until demand required their installation.

There were many challenges faced during the construction phase. These were primarily due to the multiple scope

changes which were required starting two years after financial close, and have resulted in a delay of over a year and cost overruns of circa USD \$260 million. The reasons behind these changes could be summarised as: inadequate initial design, which was missing important elements, and various change requests initiated by the Procuring Authority. The resulting delays, coupled with the sooner than forecasted increase in passenger numbers, led to a decision to accelerate stage two. It was also decided to complete the expansion in one go, instead of gradually expanding it over the coming years. The overall cost overruns of circa USD\$260 million include the scope changes referred to under the heading "Renegotiation" below and other cost overruns which are not detailed in this case study due to sensitivities.

In total, close to 200 variations (i.e. smaller-scale changes) were implemented which were initiated by the Project Company, with the total cost borne by the Procuring Authority approaching USD \$10 million.

The site itself presented challenges, as the old terminal was small in size and had to be kept operational during construction, which eventually led to a change in the approach to construction. The original plan was to operate new gates, while construction of the terminal was still going, allowing passengers to use the new gates once they had been completed. Due to the updated design of the new terminals, this was not possible, and the entire structure needed to be completed in one go. This would have meant passengers would have had to move through a live construction site, which presented an unacceptable safety and security risk. It was therefore decided to implement a partial terminal opening, which added two years to the construction programme.

Once construction was complete, all parties were involved in the testing and commissioning of the assets with the independent certifier present. The hand-over process was described by the Project Company as conventional, and there were no unexpected issues.

### Transition from Construction to Operations

Managing the transition from construction to operations was an excellent example of successful transition management. Commencement of the operations phase was originally to be initiated and completed overnight. However, in order to prepare for this transition, the Project Company formed the "Operational Readiness and Airport Transfer" (ORAT) team two years prior to the services commencement.

In these two years, meticulous planning was undertaken and comprehensive training was provided by the Project Company, while the Procuring Authority was closely involved in the planning of the process. Continuity and transfer of knowledge was a key objective of the ORAT team, and with the short transition window, there was pressure to ensure all parties were familiar with the new

asset on the first day of operations. The two years of planning and training paid off, and there were no issues faced during the transition.

### Operations Phase

While the operations phase of the project has not faced any major difficulties so far, the biggest challenge for the Project Company was the transformation of the airport working culture from public sector to private sector service delivery. This required careful and soft introduction of changes, and in general, the Project Company has been successful in managing the transformation. It deals with a large range of stakeholders, including multiple government agencies as well as airlines, ground handlers and retailers. One way to consider the operation of an airport, to quote a Project Company's representative, is that the operator has to act like "a conductor of an orchestra". Overall, the operations phase is considered to be successful by both the Procuring Authority and the Project Company.

One notable incident occurred where an airline was late in its payments to the Project Company, which was then forced to notify the Procuring Authority that it would not be able to meet its investment payments on time. The Project Company felt this should have been taken into consideration when addressing the delay in payment of investment fees, as it was a delay by the user. The Procuring Authority acted positively in this regard to reach a conclusion in favour of the Project Company.

### Performance Monitoring and KPIs

The Procuring Authority did not contribute to the cost of the construction. The Project Company assumed the risk for timely completion and was incentivised to complete construction on time, as any delays would trigger agreed damage payments. The Procuring Authority's Project Management Unit (PMU) was continuously involved in the construction phase, with engineers making daily site visits and inspections to monitor the progress on the ground. The Project Company was required to provide monthly reports showing the construction cash flow, progress, and any issues faced. There was also an independent monitor and certifier, paid for by both parties.

The operational KPIs for the project were agreed prior to financial close. The KPIs are mainly sourced from the International Air Transport Association codes and manuals, and additional payments to the Procuring Authority apply should the KPIs not be met. The Project Company submits a quarterly report to the Procuring Authority which covers customer satisfaction, financial performance, and operational performance.

The KPIs are primarily directed towards customer experience as a driver of improvements, however rankings from international agencies such as the Airport Service

Quality Awards are also understood to be indicators of performance. The KPI regime has clearly lined up the incentives of the two parties successfully, with the Project Company encouraged to provide a high level of service as a way of increasing its revenue.

### Payment Mechanisms

The PPP contract between the Procuring Authority and the Project Company sets out the investment fees at 54% of the gross revenue earned, paid to the Procuring Authority on a quarterly basis. Additionally, the Procuring Authority transferred the collection of the "departure tax" to the Project Company, which is then to be counted as part of the gross revenue to be shared. There was no payment mechanism during the construction phase.

The revenue and financial performance is calculated through quarterly reports submitted by the Project Company. As of the time of the interview for this case study, the annual income for the Procuring Authority was USD \$120 million from direct tax and USD \$130 million in investment fees.

## ROLE OF GOVERNMENT

### Government Support and Procuring Authority

The government played an important role in the success of this project, and it was emphasised that the decisiveness and leadership of relevant government officials have contributed in effective management of the project challenges. The Project Company felt that it is enabled to enjoy the freedom to operate the airport in the way it considered most appropriate in order to manage its risk and to introduce its culture of efficiency and transparency to the airport, whilst the Procuring Authority's decision-making system was perceived as an enabler.

One example of support from the government was that the civil defence fire code was updated in order to accommodate the project's design. The designers introduced innovative fire suppression systems, which at the time were not covered by the fire code. When the adequacy of the system was proven, with reference to its use in other modern state-of-the-art airports, the code was updated to allow the use of such systems.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

### Team Set-Up and Staffing

The Procuring Authority has created a dedicated team for this project after financial close. The Project Management Unit (PMU) was formed to represent the Ministry of Transport (MOT) and manage concessions on its behalf. The team has 14 people working at any given time and is located in offices within the airport. The team has the relevant legal, financial and technical/engineering expertise.

The Project Company's staff count is significantly higher as they operate the airport themselves. However, there is a technical team of 20 under the Chief Technical Officer who reports to the CEO.

The Procuring Authority was mainly responsible for facilitating the relationship between the Jordanian government and the Project Company. Its main concern was to ensure the interests of all parties are protected fairly, and most importantly, the successful delivery of the project. This helped the Project Company to avoid managing a number of government stakeholders, as the PMU would, in case of any issues, voice its concerns to the regulatory and permitting agencies and facilitate their resolution.

### **Training and Development**

There was no training programme set for the Procuring Authority. All training was provided when needed under the discretion of the head of the PMU. Additionally, the Project Company provided joint training for its staff and the PMU staff on the operation of the new facilities.

### **Communications**

The Project Company has more than one point of contact with the government. In addition to communicating with the Procuring Authority, the Project Company also has to communicate with multiple ministries for permitting and compliance. This creates a complicated communication system, which has to be carefully managed.

A particular challenge faced by the Project Company is that since financial close, there have been 12 different Ministers of Transport. This has been somewhat mitigated by the fact that the head of the PMU remained the same until recently, which allowed for the development of a strong relationship between the Procuring Authority and the Project Company. While it was difficult to deal with frequent changes in ministers, the decision to form the PMU has paid off by isolating the project from many of the disruptive effects of the changes in the ministry.

## **KEY EVENTS**

### **Scope Changes**

There were multiple scope changes within the variations which have been submitted through the life of the project to date. The first scope change was initiated in 2009 and the latest was initiated in 2014. The reasons for the changes can be grouped into three categories.

### **Inadequacies in the project design agreed at financial close**

When the project entered the construction phase, it was discovered that some sections in the airport had not been considered in the original design. This can be attributed to not involving end users (in this case end users may refer

to airlines, security, customs, etc.) in the design process. Different end users from airlines to local authorities had specific needs which were not met by the original design, making the scope correction unavoidable.

### **Constraints of working in an operational airport**

The project was an expansion of an existing airport. The design overlapped with the existing operational assets, making it difficult to build while the airport was operational, and the old structure was limited in space. Construction works therefore needed to be adapted to mitigate safety and security risks. In most cases, the expansion was performed in stages, where a section would be completed and opened for use before moving to another one.

### **Changes in the traffic profile (passengers and aircraft)**

The airport expansion was planned in two phases, with the first phase to expand the airport to a capacity of nine million passengers a year, and the second phase to expand to a capacity of 12 million passengers a year. However, the forecast traffic volume growth and type of traffic forecasted to use the airport proved to be too conservative. The airport was starting to be used as a hub, thus seeing larger wide-body aircrafts coming in which were not considered in the original design. These developments in the traffic profile required the addition of gates and improvements to make the gates suitable for heavy jets.

### **Renegotiation**

The Project Company initiated a renegotiation of the PPP contract three years after financial close to address various scope changes and the acceleration of the stage two development. As part of the renegotiation settlement, the parties agreed that the Procuring Authority is to contribute USD \$50 million and the Project Company is to take USD \$150 million in additional debt. The contribution from the Procuring Authority was structured as 10 voluntary quarterly deductions from the annual investment fees. As for the loans, the lenders decided to refinance the original debt by both increasing the amount of loan and changing the interest rate. The original loan was already four years old and was priced on the basis of a different risk profile, thus a review of the rate and the loan tenor was done to reflect the changed risk profile. It was therefore possible for the Project Company to take on the additional debt and receive more attractive financing terms. This was also helped by the fact there was an increase in the expected revenue due to the early delivery of stage two.

The government contribution required the approval of the Council of Ministers, which is the Ultimate Administrative Body in the Jordanian government. The recommendation for the contribution was submitted by the PMU to a steering committee formed for the project, which elevated the request to the Council of Ministers.

## LESSONS LEARNED

### **Early involvement of stakeholders may avoid having to undergo significant changes in scope, resulting in delays and cost overruns.**

End users and other stakeholders should always be involved in projects of this scale. When a PPP project is planned, the Procuring Authority and the Project Company should identify the end users to understand their needs and activities. This is particularly important where there are a range of stakeholders, which, in the case of an airport, include airlines and retailers, as well as passengers. This will avoid having to undergo significant changes in scope, resulting in delays and cost overruns.

### **Setting up a dedicated project team may help to mitigate risks from political and institutional changes.**

The Jordanian Ministry of Transport (MOT) decided to form a dedicated project team for the Queen Alia International Airport expansion. The benefits of this decision were most evident when the MOT was undergoing unusually frequent changes in ministers. With the PMU being separate from the MOT and concentrated on the airport, the disruptive effects of those frequent changes were avoided. The PMU staff remained the same, ensuring continuity of knowledge and contract management. Additionally, most of the decision-making was within its remit, other than high-level strategic decisions which required escalation to the MOT. This limited the potential decision-making delays caused by the changes in the MOT. This example shows how setting up a dedicated team to deliver and manage the project helps mitigate risks from political and institutional changes.

### **Involving end users in the construction works can streamline the progress of construction and facilitate a fast transition from one stage to another.**

Expanding an operational airport presented a significant challenge in the construction phase. The process was carried out by delivering the expansion in small packages around the original structure, with operations shifting from one section to another by having contractors and end users alternate between each stage. Involving end users (represented through services such as customs, security, airlines, etc.) in the construction works helped them become ready when the time came to move their operation to a different section of the airport. This process streamlined the progress of construction and facilitated quick transition from one stage to another.

### **Flexibility and commitment of the Procuring Authority to deal with unforeseen circumstances can have a significant positive impact on the overall success of a project.**

The Procuring Authority was able to proactively manage changes and variations initiated on the project. While some variations could have been avoided, the government has shown the willingness to act as an enabler. When the Procuring Authority requested variations to accommodate its needs, it was fully prepared to take up the costs associated with them and facilitated the approval from the government.

Another notable incident occurred when an airline was late in its payments to the Project Company, which was then forced to notify the Procuring Authority that it would not be able to meet its investment payments on time. The Procuring Authority acted flexibly in this regard to reach a workable conclusion with the Project Company.

### **Early and robust transition planning will make transition phases more efficient.**

The parties understood the challenges of transition phases from an early stage, and careful planning started two years before the transition from construction to operations. The effective transition management, as well as early planning and training, ensured good transfer of knowledge from the construction team to the operations team and helped overall readiness for service commencement, which, in turn, enabled a timely and smooth commencement of the services operation.

## THE PHILIPPINES

## Daang Hari-SLEX Link Road



## OVERVIEW

**Location**

Muntinlupa to Cavite/Las Pinas, Philippines

**Sector**

Transport – Roads

**Procuring Authority**

Department of Public Works and Highways

**Project Company**

Ayala Corporation

**Project Company Obligations**

Build, Transfer and Operate

**Commercial Close**

3 April 2012

**Capital Value**

Php 2.23 billion  
(USD \$54.35 million – 2012 exchange rate)

**Contract Duration**

30 years

**Key Events**

Variation due to interface with other projects,  
delays due to land acquisition issues

## SUMMARY

The Daang Hari-SLEX Link Road, locally known as Muntinlupa-Cavite Expressway, is a 4km 4-lane toll road project. The project is a build-transfer-operate PPP and has been operational since 24 July 2015 with no material issues during the operations phase. The challenges faced in this project started early in the construction phase, where a variation had to be introduced to ensure its success. In addition to the variation, challenges were faced in acquiring land for the project, causing delays in the construction phase. The effectiveness of the parties in dealing with these challenges highlights the benefits of effective contract management in infrastructure projects. This case study is also an example of the positive role PPP units can have in advising procuring authorities. At the time of conducting this case study, the Daang Hari-SLEX Link Road project has been operational for two years.

## SUMMARY LESSONS LEARNED

- Potential interface issues with other projects should be considered during the project development and evaluation phase.
- Training of the Procuring Authority's contract management team by a national PPP unit can benefit the team by providing visibility of all challenges faced nationally in PPPs.

- Land acquisition should be dealt with at an early stage (preferably before or during the bidding stage) as it carries significant risk of additional costs and delays.
- Independent consultants may act as a mediator to prevent disputes as they offer an impartial evaluation of any issues, which can then be presented to the parties for agreement.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The PPP contract is for 30 years and has a provision allowing for an extension of up to 20 years (50 years in total from commencement of construction). According to the Procuring Authority, the objectives of the project were to benefit commuters, motorists and the general public, and to deliver strategic benefits to the region such as:

- Providing an alternative route to/from Metro Manila/Cavite
- Improving the regions' competitiveness as an investment destination
- Decongestion of the traffic in Cavite, Las Piñas, and Muntinlupa
- Reducing travel time by an average of 45 minutes from Daang Hari to Alabang Interchange
- Providing new access to the National Bilibid Prison (NBP) property, which is intended to be redeveloped into a mixed commercial, residential, and institutional estate

### The Economic and Political Environment during Inception

As of April 2012 when the PPP contract was signed, the Philippines central government was ambitious in promoting privately financed projects to improve the country's infrastructure. The PPP unit, known as the "PPP Center", was formed by the central government to promote and drive the development of PPP projects in the Philippines. It champions the country's PPP program and aims to create an enabling environment for private investment in local infrastructure projects. In addition to enabling and promoting infrastructure investment, the PPP Center advocates policy reforms to improve the legal and regulatory frameworks governing PPPs in order to de-risk projects such as the Daang Hari-SLEX Link Road project.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

The Procuring Authority was responsible for acquiring the land necessary for the project at no cost to the Project Company. The Procuring Authority granted the Project Company the exclusive rights and obligations with respect to undertaking the construction works. The Project Company was responsible for bearing the costs relating to construction.

As a sufficient amount of land was made available for construction, the Project Company commenced the works immediately upon contract signature. However, there was a delay in construction completion due to a major variation and challenges related to the acquisition of remaining land which had not been acquired as of commencement of construction. The variation delay was due to the process of redesigning the road for the inter-connection and inter-operation with another expressway. The details of the variations and land acquisition delays are further explained under the heading "Key Events" below.

### Operations Phase

The Daang Hari-SLEX link road has been operational since 24 July 2015. The project was designed for a daily capacity of 126,000 unit cars. Following the transition to operations, monthly traffic volume reports are submitted by the Project Company to the Procuring Authority. At the time of writing this case study, no issues or challenges had been faced during the operations phase.

### Performance Monitoring and KPIs

For the construction phase, an independent consultant was employed by both the Procuring Authority and the Project Company to review, monitor, and certify the milestones. Throughout the construction phase, the Procuring Authority regularly monitored, inspected and evaluated the quality of the works undertaken by the Project Company to ensure that the road was designed, constructed and equipped in accordance with the contract requirements.

In the operations phase, the Project Company is required to comply with the minimum Key Performance Indicators (KPIs) for operation and maintenance stipulated by the Procuring Authority. There are over 15 KPIs for the expressway operation and over 15 KPIs for road maintenance. Some of the KPIs include; ensuring that queuing length of 10 vehicles at the toll gates does not exceed 20 minutes during peak hours, and maintaining the transaction capacity of the toll plaza at a minimum of 400 vehicles per hour per lane for manual or mixed booths, and 900 vehicles per hour per lane for the express gates.

Other KPIs include:

- Permanent presence of the traffic safety and control system (i.e. patrol system, security surveillance system, immediate response to accidents or vehicle breakdown, etc.)
- Regarding road quality, surface roughness should not exceed three units based on the international roughness index (IRI)
- In cases of road damages, the repair of pavements or markings should not exceed the prescribed time

The KPIs are monitored by both the Project Company and the Procuring Authority during the operations phase with no involvement of an independent consultant. However, the final approval of compliance with KPIs is the responsibility of the Procuring Authority. Penalties apply for the Project Company if the KPIs are not met. So far, the KPIs seem to be working well and there have not been any complaints on the functionality of the KPIs from the Project Company or the Procuring Authority.

Minimum performance standards and specifications are generally monitored by the Procuring Authority. The Toll Regulatory Board also conducts monitoring activities for compliance with regulations on toll systems and facilities. While the Project Company is currently meeting all the agreed KPIs, it can be noted that during the defects liability period, i.e. the one-year period after construction completion during which the contractor must remedy defects as identified by the Procuring Authority prior to the acceptance of construction works, a few KPIs (i.e. road roughness and repair of the road drainage system) were not complied with. All these performance failures have since been corrected.

### Payment Mechanisms

There are no investment fees payable to the Procuring Authority during the operations phase of the toll road and no minimum traffic demand guarantee was given by the Procuring Authority. The agreement allows the Project Company to use the toll revenue collected as the primary source of income to recover the cost of its investment. Poor performance leads to fines levied on the Project Company. The fines are issued based on the monthly performance reports submitted by the Project Company.

The toll rates are assessed in each direction at the toll barrier, based on the class of vehicle. In accordance with the law, all toll rates include a 12% Value-Added Tax. The toll rate is reviewed periodically every two years and is adjusted to reflect current economic conditions. The adjustment is made based on a specified formula and is tied to the Consumer Price Index in the Philippines. Since the Project Company has taken construction and demand risk, it is not allowed to implement a toll adjustment on its own to cover construction cost overrun or lower than forecast traffic volume. Approval for the toll adjustment must be granted by the Toll Regulatory Board, a government regulatory body on toll expressways.

It is worth noting that any wrongful disallowance in toll rate adjustments may result in remedies, such as compensation from the Procuring Authority of revenue foregone by the Project Company as a result of disallowance. The reason for this is that decisions made by the regulatory authority are influenced by multiple factors, including political and economic factors. Thus, the Procuring Authority guarantees to provide a remedy for foregone revenue if toll rate

adjustments were disallowed when the Project Company had a valid reason to request the adjustment. The remedies can be in the form of direct payments or an extension of the operations period.

In addition to the toll revenue, the Project Company is allowed to develop areas in the land available within the corridor to provide commercial services for the users of the toll road. The Procuring Authority is entitled to receive 5% of the revenue generated from commercial services and activities by the Project Company.

### ROLE OF GOVERNMENT

The central government of the Philippines provides support to local governments and agencies in their PPP projects. The PPP Center operates closely with the National Economic and Development Authority and was set up to help support PPP projects. The PPP Center serves as the central coordinating and monitoring agency for all PPP projects in the Philippines. It champions the country's PPP Program by enabling Procuring Authorities in all aspects of PPP procurement and it is in regular contact with the Procuring Authority in the operations phase.

The PPP Center supports the Procuring Authorities by providing:

- Project Development and Monitoring Facility Services
- Project Development Services
- Policy Formulation, Project Evaluation, and Monitoring Services
- Capacity Building and Knowledge Management Services
- Legal Services

The PPP Center's PPP monitoring role continues into the operations phase. The PPP Center is involved in coordination activities to ensure smooth project operation. While monitoring is primarily at a high level, relying on reports submitted by the Procuring Authority, the PPP Center may also conduct in-depth monitoring and evaluation of PPP projects. This may involve focus group discussions among all concerned stakeholders.

While the PPP Center supports Procuring Authorities in setting up and promoting PPP projects, the final approval of any project lies with the Investment Coordination Committee (ICC) and the National Economic and Development Authority Board, depending on the project cost. Their decision is influenced by recommendations from the ICC's technical working group, which is made up of the PPP Center, the Finance Ministry, the Economic and Development Authority, and the Environment Department.

The Philippines government structure offers a lot of autonomy for local governments, including rights to impose restrictions, requirements, and taxes. As a result,

the Procuring Authority and the Project Company had to conduct extensive consultation and coordination activities with the Local Government Units (LGUs) to ensure compliance with all local regulations and ordinances.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

### Team Set-Up and Staffing

The Procuring Authority was actively involved on a daily basis in monitoring the project during the construction phase. An independent consultant was appointed to certify progress of works and make recommendations for the Procuring Authority's approval of all documents relating to the construction phase of the project. The independent consultant owed a duty of care to each of the parties with a duty to act professionally and independently. The parties shared the cost of the independent consultant's remuneration equally and have established arrangements where the payment of the remuneration will be made by each party on the same day each month, based on the invoice received from the independent consultant.

During the operations phase, the Procuring Authority has been satisfied that the number of resources it currently has is adequate to monitor the performance of the Project Company.

### Training and Development

The PPP Center has been responsible for providing training to the Procuring Authority. As the PPP Center has visibility of all PPP challenges faced nationally, and is closely linked to the central government, it has the ability to act as a catalyst for knowledge sharing and training.

### Communications

There is a continuous line of communication between all parties, as the Procuring Authority has an office near the facility, to monitor the project closely and have an open dialogue with the Project Company.

The PPP contract stipulates that any formal notices should be issued in the form of a written letter and delivered personally or scanned and sent by electronic mail.

## KEY EVENTS

### Design Variation

Before the project was tendered, a preliminary design was developed by the Procuring Authority. However, when the Project Company submitted its initial detailed design to the Procuring Authority, it was discovered that the planned expansion of another nearby expressway was not taken into consideration in the preliminary design. Consequently, to allow for this expansion, a change in the scope of the

project design developed by the Procuring Authority was needed. This resulted in extra costs to the Procuring Authority, as it had to compensate the Project Company for the additional work. As a result, the project had to be delayed to allow time for the redesign and cost estimations.

The variation procedure is contractually defined and starts by either party sending a written notice ("Variation Notice") to the independent consultant describing the change in scope. In this case, it was the Procuring Authority that initiated the Variation Notice. The independent consultant then certifies that the proposed variation was in accordance with the minimum performance standards and specifications agreed at contract execution. The Project Company subsequently prepares a proposal setting out the necessary details and the additional cost estimates (with supporting particulars), including how the costs would be recovered. Should the variations cause a cost increase of 10% or more above the contract value, formal approval from the ICC is required. If the increased costs are below 10%, the Procuring Authority and Project Company can proceed with the agreed variation subject to notifying the ICC.

The variation in this project did require approval from the ICC as it was above 10% of the contract value. The cost of the variation was paid in a lump sum once the Project Company provided all supporting evidence to justify the cost increase.

The PPP Center has recognised the lessons learned from this variation and the identification of any adjacent and/or competing projects has now been introduced to the PPP Center's project development and tender evaluation processes to mitigate the associated risks from the outset.

### Land Acquisition Challenges

Prior to the start of construction, all parties had knowledge of the land needed for construction. Initially, a sufficient amount of land was successfully acquired to start the construction on time. However, further into the construction phase, challenges in acquiring the remaining land needed for the remaining construction activities started to emerge. The process of land and property acquisition starts with an offer based on a fair market valuation. If negotiations with the owner fail, the issue may have to be referred to the courts to seek permission for expropriation.

For one narrow piece of land, negotiations with the owners were initially unsuccessful, and high-level intervention was needed to facilitate the agreement on the use of the land. For the acquisition of some areas of the project land, negotiations with the owners were not successful and a court order had to be obtained. This process is lengthy and has resulted in delays to the completion of the works. As the Procuring Authority was responsible for land acquisition risk, there was no financial impact on the Project Company resulting from this delay. No extension of time for



construction works was required, as the issue associated with the outstanding land acquisition led only to minor delays.

## LESSONS LEARNED

### **Potential interface issues with other projects should be considered during the project development and evaluation phase.**

Failure to detect issues with adjacent and competing projects can lead to cost increases and time delays. The late identification of the clash between this project and another road expansion project has resulted in variations at the expense of the Procuring Authority. The PPP Center recognised the severity of this particular challenge in this project and other projects across the country. Therefore, in order to mitigate risks associated with adjacent and competing projects, the identification of projects which may have an interface with the project in question was introduced in the project development and evaluation phase. Projects with identified interface issues are not allowed to proceed to the next stage of evaluation until the interface issues are addressed, depending on the severity of their impact.

It is important to recognise that interface issues vary in complexity and impact on a project. Thus, it is difficult to give specific advice on how to handle interface challenges. Some interfaces are easy to remedy and are not significant enough to affect the decision on the project's evaluation, while others are. Therefore the 'Philippine's solution' is attractive, as it requires flagging interfaces during the development and evaluation process but leaves the decision to proceed without a remedy plan at the discretion of the project technical working group. This proactive method presents an example of good practice to be adopted during project inception and evaluation, as it facilitates awareness of any potential issues at an early stage.

### **Training of the Procuring Authority's contract management team by a national PPP unit can benefit the team by providing visibility of all challenges faced nationally in PPPs.**

The PPP Center has been responsible for providing training to the Procuring Authority. As the PPP Center has visibility of all PPP challenges faced nationally, and is closely linked to the central government, it has the ability to act as a catalyst for knowledge sharing and training.

### **Land acquisition should be dealt with at an early stage (preferably before or during the bidding stage) as it carries significant risk of additional costs and delays.**

Land acquisition carries significant risk of additional costs and delays. It is often a risk retained by the Procuring Authority.

The process of obtaining the necessary land requires careful stakeholder management and engagement planning. It can be

a lengthy process, and it is recommended that land acquisition challenges are addressed at an early stage in the project to avoid delays and additional costs during construction.

### **Independent consultants may act as a mediator to prevent disputes as they offer an impartial evaluation of any issues, which can then be presented to the parties for agreement.**

It was highlighted by the interviewees that independent consultants are helpful in reaching agreements between the parties involved. In this project, the consultant was commissioned by both parties, ensuring a non-biased and transparent opinion. In some respects, the independent consultant acts as a mediator in preventing disputes, as it offers an impartial evaluation of any issues, which can then be presented to the parties for agreement.

## SOUTH AFRICA

# Gautrain Rapid Rail Link



## OVERVIEW

### Location

Gauteng, South Africa

### Sector

Transport – Rail

### Procuring Authority

Gautrain Management Agency

### Project Company

Bombela Concession Company (Pty) Ltd

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

25 January 2007

### Capital Value

ZAR 24.5 billion  
(USD \$3.4 Billion – 2007 exchange rate)

### Contract Duration

19 years, 6 months

### Key Events

Disputes, land acquisition delays, design and construction changes

## SUMMARY

The case study was drafted based primarily on inputs received from the Gautrain Management Agency (GMA) (the Procuring Authority).

The Gautrain Rapid Rail Link project is an 80km rail project developed to ease traffic congestion and facilitate travel in the Johannesburg-Pretoria corridor in South Africa. It is an ambitious undertaking, being the first PPP in South Africa of this scale. The project faced a range of challenges including some difficulties in land acquisition that led to delays during construction. A number of disputes also went to arbitration, however the parties negotiated a settlement and the project is currently operating successfully. The project was delivered in two phases on 8 June 2010 and 7 June 2012.

## SUMMARY LESSONS LEARNED

- Change processes need to be clearly defined, with incentives to respond in a timely manner to avoid unnecessary prolongation of change agreement and implementation.
- Engage with stakeholders and address land access issues early to avoid the risk of failure to secure land access and delays while the construction is progressing.

- Shared data and information management systems used by the Project Company and Procuring Authority must be compatible and meet each party's respective requirements.
- Periodic meetings should not be overcrowded such that they are unmanageable and ineffective.
- The timing of Environmental Impact Assessments for linear projects is critical, so as not to cause delays on the project.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The goal of the project was to provide a rail-based commuter service in the Johannesburg-Tshwane corridor and provide relief to the road network, as well as providing a link between Sandton and O.R. Tambo International Airport. The 19.5-year project involves the design, construction, finance, operation and maintenance of a 77km long track, with the provision of 96 cars of rolling stock to transport passengers. In addition to the rolling stock, the Project Company is responsible for providing bus links to the train stations to facilitate access to the rail network, and with this, the responsibility for transporting people from their area of residence to the station and across the network falls to the Project Company. The Gautrain project was also considered to be part of South Africa's efforts to create jobs and improve social mobility through job creation and skills development to disadvantaged populations.

### The Economic and Political Environment during Inception

Public transport is widely available in South Africa, however the quality and reliability has not always met the required standard. At the time of project development, the Passenger Rail Agency of South Africa through Metrorail (the South African operator of commuter rail services) delivered over one million trips per day during 2006 and all major cities had bus services. However, the challenge was that the coverage of the public transport system did not keep pace with urban development and quality of services suffered as a result of under-investment. The government, therefore, identified the need to ease traffic congestion within the Johannesburg-Tshwane corridor, which would allow for the provision of efficient transportation and facilitate movement of people. At the time, the upcoming 2010 FIFA World Cup added time pressure to have a reliable transport system in place in Gauteng.

There was significant concurrent activity in the construction market during the construction phase of the project, with a range of other major construction projects underway in preparation for the FIFA World Cup. Five stadia were built for the games, in addition to other transport and infrastructure developments to accommodate the mass inflow of people. This increased demand created a major shortage of skills, materials, and equipment during the time of construction of the project.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

The 80km Gautrain rail line included the construction of 15km of tunnelling and a number of viaducts, stations, depots, and parking bays. The scope of the project also included supporting facilities, in addition to the rail track and rolling stock. The project was completed in two phases, with the first delivery date of 8 June 2010 and the second delivery date of 7 June 2012. Due to the upcoming FIFA World Cup, the first phase was accelerated and delivered three days ahead of schedule.

Phase 2 of the project runs from Midrand to Pretoria and Hatfield, and from Sandton to Park (Johannesburg). Phase 2 was delayed by five months due to delays associated with land acquisition and the dispute related to water ingress in one of the tunnels between Rosebank and Park. These challenges are detailed further below under the heading "Key Events".

The Procuring Authority approached the transition from financial close to construction in a proactive way by commissioning the Project Company to undertake enabling works once the preferred bidder had been identified (prior to the start of the construction phase). This was also beneficial to the Project Company itself, as it already had a team in place when construction started.

There were many challenges in the construction of the project, including difficulties in obtaining land access. Because of the time pressure arising from the need to complete parts of the system before the FIFA World Cup, some approvals from local governments along the proposed route could not be obtained prior to financial close, and in some instances, these local governments capitalised on the urgency and pressured the Project Company to deliver additional works to improve some roads. There were other problems with engaging stakeholders, such as the requirement to relocate one of the stations to accommodate property developments along the route. While land acquisition risks were retained by the Procuring Authority, the costs of relocation of the utilities and road improvements around the stations were transferred to the Project Company.

An Environmental Impact Assessment (EIA) process was successfully concluded and the necessary environmental authorisations were obtained for the project by 2009. Obtaining the necessary environmental authorisations took longer than envisaged. This delay was caused by the EIA process having to commence at the planning stage of the project and so it was based on preliminary designs. This resulted in amended EIA applications that had to be submitted to cover changes to many sections of the alignment, proposed by the Project Company.

During the construction period, some technical issues arose, including the tunnel not meeting the specifications for maximum water ingress. This resulted in a dispute that was settled along with all other disputes in an agreed settlement in 2016, which is detailed below under the heading "Key Events".

### Operations Phase

The service provided by the Project Company and the operations contractor met and exceeded targets of availability and punctuality at an average of 99.5% and 98.6% respectively for all trips scheduled for the 2016/17 financial year. Safety and security targets have also been met and exceeded, increasing customer confidence in the Gautrain and in public transport in general. The safety of passengers and of the system itself remains at excellent levels. Recently, there has also been an improvement in the general condition and cleanliness of the station buildings, resulting from the successful implementation of intensive cleaning operations by the Project Company.

The operations of the project have been broadly successful, and the 2016/17 financial year saw an overall increase of 1% in the number of passenger trips, with the number of passenger train trips reaching 15,612,070. However, the number of users from airport stations declined due to competition with app-based cab/taxi hailing services. Consequently, a freeze on airport service fares has been introduced for 2017 to keep up with the competition.

After six years of operation and close to 80 million passenger trips, the project has had a positive impact on the provincial economy, alleviated traffic congestion and rejuvenated several inner cities in Johannesburg and Tshwane. It has created jobs and helped to re-establish the rail sector in the province. Some studies on the wider benefits of the project indicate that between 2006 and 2011, over 122,000 jobs were created by the project. For every ZAR 1 spent on the project, ZAR 1.72 has been added to the Gauteng economy. With the project's 99 percent availability rate, less than 0.4 percent fare evasion and 98 percent punctuality of its trains, the system has generated strong demand for the expansion of the project<sup>1</sup>.

### Performance Monitoring and KPIs

For the construction phase, monitoring of performance was undertaken through milestone achievement. As part of the payment mechanism, this approach served as an effective indicator of performance during the construction phase. These milestones were monitored by the Procuring Authority and Project Company, as well as an independent certifier.

There were approximately 1,000 milestones on the project, covering over 25,000 individual activities, which made ongoing performance monitoring a challenge. There were

12 key milestones, which were spaced 4-5 months apart and were used as an indicator of integrated progress. They were also useful for judging how the civil works were progressing compared to the rolling stock and systems delivery. On completion, both parties would inspect the delivered works with an independent certifier who is the only party authorised to certify compliance and progress of the work and issue a payment certificate to the construction contractor for the completed works.

In the operations phase, there are 25 measurable criteria against which performance of the Project Company is monitored each month, with potential deductions to be applied in case of failure to meet the standards. The performance criteria are monitored by the Project Company and reported to the Procuring Authority on a monthly basis. The monitoring and recording system is as automated as possible and manual interventions are minimised, and the payment mechanism prescribes deductions to unavailability of service or poor performance.

One KPI is a social development criterion, which sets a range of monthly targets related to training and employment of male and female historically disadvantaged individuals and has related non-compliance payment deductions. This reflects the government's objective to create jobs and improve social mobility of disadvantaged populations.

### Payment Mechanisms

The Procuring Authority provided financing in the form of a USD \$3 billion grant, while the Project Company raised USD \$360 million in debt, and USD \$70 million in equity.

It was understood from the outset that the required capital for the project was far greater than what the private sector could invest and recover from user fees. As a result, government support was the main source of funding and it came in two forms. The first is a provincial contribution to fund the construction phase, which is the bulk of the government support, amounting to approximately USD \$3 billion. The second financing contribution from the government came in the form of "a patronage guarantee" and is being provided during the operations phase.

During construction, where the first form of government contribution was provided, milestone payments were made to the Project Company, with an independent certifier commissioned by both the Procuring Authority and Project Company to monitor compliance and issue payment certificates for each payable milestone reached. This traditional milestone payment system was proven adequate for such a large project, with multiple heavy works undertaken at the same time.

For the operations phase, when revenues are above a certain threshold, profits are shared between the Project Company and the Procuring Authority, on the basis of the achievement

<sup>1</sup> <http://gma.gautrain.co.za/article/expansion-of-gautrain-rail-network>

of certain rates of return on equity by the Project Company. There is also a lower threshold, which is covered by a minimum revenue "patronage guarantee". Demand risk is therefore taken by the Project Company up to a certain level, below which the patronage guarantee is given. User fees and ancillary revenues are the main source of income for the Project Company. There is an incentive payment scheme for the Project Company for revenue growth during the initial five years of the operations period.

As for performance deductions, since the majority of the KPIs cover operational excellence and performance, any abatements resulting from failure to meet operational KPIs are generally borne by the operations contractor and deducted from its fee. So, the risk of poor performance is transferred from the Project Company to the operations contractor. The Project Company is, however, exposed to a reduction in the patronage guarantee payable by the Procuring Authority in instances where train or bus availability falls below set thresholds.

To calculate the patronage guarantee, the minimum required total revenue (MRTR) financial metric is used, which was part of the Project Company's bid submission. This metric is used to make two calculations to determine the amount of the patronage guarantee. The lesser amount of the difference between the MRTR and the actual revenue, and the difference between the MRTR and the revenue forecast is considered to be the patronage guarantee amount. As a result, the Project Company carries the risk of its revenue being below its forecast. Earning revenue above its forecast and below the MRTR reduces the guarantee payment from the Procuring Authority. Therefore, the Project Company is not incentivised to achieve revenue higher than its forecast once the initial five-year incentive scheme ended.

### **Change Management**

The change management process in the PPP contract for scope changes proposed by the Procuring Authority was broadly structured as follows:

- The Procuring Authority would issue a change notice;
- The Project Company would respond with an outline cost within an agreed timeframe;
- The Procuring Authority would then make a decision to allow the Project Company to proceed with a fully developed response based on the initial outline cost; and
- If the Procuring Authority allowed the Project Company to proceed, the Project Company would submit a fully developed response.

However, there is no time limit on when the final response from the Project Company should be submitted. This proved to be a major flaw, as there was no time limit for the Project

Company to respond with a fully developed solution. Each change had to be negotiated from first principles (with no base rates agreed prior to financial close), which added to the time required to complete the process.

In addition, there was a provision for the Project Company to refuse a change if the number of changes issued was over 15 during the construction period. As it happened, the Project Company did not enforce this right, as it became clear that more changes were needed for the project to proceed. In total, the variations implemented amounted to less than 5% of the initial capital cost.

### **ROLE OF GOVERNMENT**

This project was the first PPP of its kind in South Africa, thus requiring a certain level of adaptation by the government. The government of South Africa formed a PPP unit to promote PPPs and provide advice to Procuring Authorities on contract management and team set-up. The Ministry of Finance and Treasury provided advice and support to the Procuring Authority on this project. Initially, the Procuring Authority was the Department of Roads and Transport of the Gauteng province government. Subsequently, Gautrain Management Agency was formed following the approval of the relevant legislation by the Provincial Executive Council in December 2006. The Procuring Authority (Gautrain Management Agency) provides the necessary capacity to fulfil the province's contractual obligations and manage its relationship with the Project Company and all other stakeholders. The objectives of the Procuring Authority are defined by the Gautrain Management Agency Act. Overall, its objective is to manage, co-ordinate and oversee the project in the interest of the government as a whole and the province in particular. The Procuring Authority's responsibilities include matters such as managing the relationship between the province and the Project Company in terms of the PPP contract, managing assets and finances, liaising with all relevant government institutions and interested parties promoting the project, promoting Broad Based Black Economic Empowerment, and integrating the project with other transport services.

### **RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY**

#### **Team Set-Up and Staffing**

The approach from the Procuring Authority in terms of giving the Project Company a head start on enabling works outside the PPP contract ensured a smooth transition from financial close to construction. Both the Procuring Authority's team and the Project Company's team were strengthened after financial close with new staff being brought in to manage the project. The Procuring Authority's team was staffed with local experts and had extensive experience covering

design, major programmes management and contract management. Contract management training was also provided to new staff after financial close.

### Communications

The interviews conducted suggested that communication between the parties has been challenging to manage. Periodic meetings were the principal form of interaction between the parties, and while there were monthly meetings held for the project, these included up to 30 participants, which at times made it difficult to ensure sufficient focus due to the varied interests of the parties involved.

Weekly meetings were also held between the Procuring Authority and the Project Company's representatives to discuss key issues, and these were more productive as they involved no more than eight people at a time. The meetings with the independent certifier were seen as beneficial, as they allowed for an objective discussion on the certifier's findings and eventually evolved to being used to monitor the project's milestones.

Informal strategic-level meetings were held on a quarterly basis, with the aim of allowing the parties to socialise and build stronger relationships. This was stopped two years after financial close.

In the operations period, formal contractual meetings as well as informal coordination meetings are held on a weekly, monthly and quarterly basis.

### Information Management

A data and document management system was stipulated in the contract. The Procuring Authority selected a particular software system for all document and information management. However, the Project Company found that this was not suitable for its record keeping and internal management control, which resulted in the Project Company and its related parties using their own software for document and information management. The consequence was that the Project Company had to then convert their document and information management system to be compatible with the Procuring Authority's in order to use it.

## KEY EVENTS

### Disputes

There were multiple disputes on the project, starting in 2008 when it became clear that the Procuring Authority would not be able to provide the land access as planned. The Project Company believed that it was entitled to relief in case of delays, however it was not until the delays on the critical path reached nine months that the construction contractor accelerated the works and claimed for compensation. There

is a Dispute Resolution Board, but it was set up to deal with issues related to scope and specifications only. Any other issues can be quickly escalated to arbitration without going through the Dispute Resolution Board. In the case of this dispute, the matter went to arbitration as an amicable agreement could not be reached.

Another claim in the project was started by the Procuring Authority after it found that water was leaking into the tunnels, in excess of the maximum ingress permitted. The disagreement was escalated to arbitration. The Procuring Authority won the arbitration award for the water ingress in the tunnel and the Project Company was ordered to carry out remedial works.

In addition, a number of separate disputes had gone to arbitration, and on 18 November 2016, the Procuring Authority and the Project Company agreed to a comprehensive settlement of all disputes relating to the construction period of the project. The mutually agreed settlement brought to an end the protracted, costly and multiple legal and arbitration processes between the Procuring Authority and the Project Company.

The settlement resulted in: 1) the Procuring Authority paying the Project Company an amount of ZAR 980 million in full and final settlement; and 2) the Procuring Authority agreeing to forgo receipts of the railway usage fee in the amount of ZAR 266 million that would otherwise be payable by the Project Company.

### Delays Related to the Environmental Impact Assessment

The initial EIA process began during the planning phase of the project from 2001 to 2003. As a result of various route re-alignments and design changes proposed by the Project Company, the EIA process had to be updated during the construction phase and was completed in 2009.

The protracted EIA process spanned eight years and had two major implications: the costs associated with the EIA process were much higher than originally anticipated and EIA consultants appointed by the Project Company left the project during the lengthy process, which led to a lack of knowledge continuity.

The timing of the EIA process posed a challenge, as detailed above under the sub-heading "Construction Phase". The EIA regulation at the time did not provide for a seamless transfer of environmental compliance responsibility from the initial applicant (i.e. the Gauteng Department of Public Transport, Roads and Works) to the Project Company. This contributed to disputes between the Project Company and the Procuring Authority.

As a result of the requirement for the implementation of the EIA process by the Procuring Authority before the contract award and final design development, much of

the process had to be redone by the Project Company to address changes to the route alignment and final design development completed. The risk for the detailed EIA is commonly transferred to the Project Company at the contract award.

There have been disagreements between the Procuring Authority and Project Company related to the responsibility for compliance with the conditions attached to the authorisation to proceed with the project, as part of the EIA process. This resulted in a dispute that was resolved in arbitration.

There have also been disputes between the Gauteng Department of Public Transport, Roads and Works (as the project proponent and applicant for EIA authorisations) and some public participants in relation to the route alignment of the project, following the comprehensive public consultation process. Most of the disputes were solved by the Gauteng Department of Public Transport, Roads and Works accepting and implementing the proposals made by residents for alternative route alignments, but some disputes led to litigation which resulted in a decision in favour of the Procuring Authority.

## LESSONS LEARNED

### **Change processes need to be clearly defined, with incentives to respond in a timely manner to avoid unnecessary prolongation of change agreement and implementation.**

The process for managing scope change on the project was slow, which led to delays and increased risk for all involved. Furthermore, the change process did not distinguish between major and minor variations. As there were no base rates agreed contractually for standard costing of small changes, they were all being negotiated and agreed separately. Every change, therefore, had to be negotiated from first principles, which added to the time required to complete the process. Furthermore, the change process did not specify a time limit for the Project Company to respond with a fully developed solution for a change requested. Change processes need to be clearly defined, with contractual mechanisms to require responses in a timely manner. Not having response deadlines can lead to unnecessary prolongation of change agreement and implementation.

### **Engage with stakeholders and address land access issues early to avoid the risk of failure to secure land access and delays while the construction is progressing.**

Challenges faced in Gautrain's land acquisition highlight potential complexities and consequent delays due to land acquisition. The work required in obtaining land access should not be underestimated, as any failure to secure land on time can either halt the project or lead to significant

change. Challenges are not only due to non-supportive landowners; relevant stakeholders will also often have concerns over other issues, such as environmental impact.

Although work on land acquisition and access started before construction, this work could not be completed because of pressure to implement the project to meet the FIFA World Cup deadline. Delay on land acquisition gave local stakeholders leverage over the Procuring Authority and the Project Company, which, in this case, was evidenced through the pressure exerted by local stakeholders and landowners on the Project Company to build and refurbish some existing assets, e.g. roads near stations. Early land acquisition would reduce pressure on the construction programme and give more room for risk mitigation.

### **Shared data and information management systems used by the Project Company and Procuring Authority must be compatible and meet each party's respective requirements.**

A data and document management system was stipulated in the contract. However, the Procuring Authority and the Project Company used their own software for document and information management. The consequence was that the Project Company had to then convert their document and information management system to be compatible with that of the Procuring Authority.

The type of data sharing and monitoring systems should be carefully selected. Unsuccessful planning on data sharing and monitoring platforms can lead to additional costs for both parties, and it is clearly inefficient for either party to keep converting data from one system to the other. A compatible platform should be developed as early as possible, and if that is unachievable, then compatibility issues need to be addressed before information and documents start to pile up.

### **Periodic meetings should not be overcrowded such that they are unmanageable and ineffective.**

Periodic meetings were the principal form of interaction between the parties. Weekly meetings were also held between the Procuring Authority and the Project Company's representatives to discuss key issues, and these were productive as they involved no more than eight people at a time.

In addition, there were monthly meetings held for the project, which included up to 30 participants, making it difficult to ensure focus.

Each of the parties represented at the meeting during the construction phase had their own interests in the project and attending to each of their issues and managing the interfaces was time-consuming. It is, however, the responsibility of the Project Company to manage the interests of its subcontractors.

**The timing of Environmental Impact Assessments for linear projects is critical, so as not to cause delays on the project.**

The timing of the EIA posed a challenge for the project, as it was implemented at the planning stage of the project based on a preliminary design. Consequently, a large part of the EIA process had to be redone once the route alignments and detailed designs had been completed by the Project Company.



## SPAIN

# Segarra Garrigues Irrigation System



## OVERVIEW

### Location

Region of Catalonia, Spain

### Sector

Water – Irrigation

### Procuring Authority

Reg Sistema Segarra-Garrigues

### Project Company

Aigues del Segarra Garrigues, SA

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

8 July 2005

### Capital Value

€1.2 billion  
(USD \$1.431 billion – 2005 exchange rate)

### Contract Duration

39 years (subject to the extensions described below)

### Key Events

Scope change to ensure compliance with environmental laws, loan agreement termination, contract renegotiations

## SUMMARY

The Segarra-Garrigues Irrigation System project is an important project in the development of the Lleida province of Catalonia, Spain. The aim of the project is to transform 70,000 hectares of non-irrigated land into irrigated land, benefiting an area with a population of over 350,000 people. However, the Global Financial Crisis' effect on the Procuring Authority's financial standing created significant challenges, with lenders terminating their financing arrangements with the Project Company.

Requirements to comply with European Union (EU) environmental requirements also caused delays and limited the scope of the project. As a result of these challenges, the construction phase has been extended and is not expected to finish until 2029.

## SUMMARY LESSONS LEARNED

- Good engagement with end users at an early stage during project inception and throughout the project delivery is essential to ensure project viability.
- The Procuring Authority must carry out sufficient due diligence, to ensure that the scope of the project and any contractually prescribed reference design is compliant with all relevant legislation.

- Continuation of staff from construction through to operations improves the efficiency of managing the transition between the phases.
- Over-specification in the PPP contract, and development of input rather than output specifications, can have an adverse impact on the final design and whole-life costing.
- Government backing becomes very important in critical situations, such as lack of financing, and can mitigate the risk of project postponement or termination.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The project was initiated to increase the availability of water through the new irrigation system. This was done to allow for the development of more profitable crops, the establishment of new businesses, and other general economic benefits in the areas covered by the project. More than 16,000 land owners are currently growing crops which have a low yield and therefore low profitability, due to the lack of water available.

The planned irrigation system comprised two elements. The first element is led by the National Government and covers an 85km irrigation canal (Canal Segarra Garrigues) and a dam (Albages). The second element, which is the project covered by this case study, is being undertaken by the Project Company, Aigues del Segarra Garrigues SA, and consists of the development of a water distribution network, which takes water from the canal to groups of landowners, who are then responsible for building the infrastructure to transfer the water to their individual farms.

The Procuring Authority was Reg Sistema Segarra-Garrigues, which is a public-sector company created for the project by the Regional Government of Catalonia. This company was later absorbed into Infrastructure of Catalonia. The Procuring Authority signed the PPP contract with the Project Company for the design, construction, finance, maintenance and operation of the project.

## MANAGEMENT OF THE PPP CONTRACT

### Transition Between Commercial and Financial Close

There was a major transition between commercial close and financial close. With nine equity investors and a syndicate of banks who needed to come to an agreement, the process was overly complicated and took over two years to complete. The Procuring Authority then delayed works for an additional two years, and with many changes of senior management taking place in the public sector during this time, limited progress was made. No construction works began until 2006 despite the PPP contract signing taking place in 2002, and while this may otherwise entitle the Project Company to make a claim, this was understood to be covered by the renegotiations in 2013.

### Construction Phase

The project was tendered based on a conceptual design and relevant specifications developed by the Procuring Authority. All detailed designs were developed by the Project Company after the award of the PPP contract, which were then approved by the Procuring Authority, and subsequently implemented during construction.

The original construction duration was nine years, with completion expected to occur in 2014, however as of 2017, only 50% of the network had been completed. There have been various challenges to completing the design and construction which have caused this delay. The specific challenges which had the greatest impact on the construction were related to the lack of demand from the landowners, who are the key intended beneficiaries, and the project scope change required to comply with environmental laws.

During the tender process, it was assumed that landowners would be generally supportive of the project, and would sign up in groups, agreeing to procure the additional infrastructure required to connect the water directly to their individual plots of land. This would mean the Project Company would pipe water to individual areas that would not be required to be less than 12.5 hectares (referred to as the "Minimum Irrigation Area"), with the landowners covering the costs of piping the water to the individual lots within these areas. However, due to poor stakeholder engagement combined with a lack of interest from farmers, this Minimum Irrigation Area ended up averaging 2.8 hectares. This meant that the total length of pipes has increased by approximately 30%, with a direct impact on the time and cost of construction.

A ruling by the European Court of Justice on the project's lack of compliance with the relevant legislation meant that the Project Company had to introduce what are referred to as "Special Protection Areas" for birds in the area covered by the project. This reduced the areas assigned for irrigation and added costs due to re-routing of pipes around the protected regions. This is further explained under the heading "Key Events" below.

The project's contract requirements are perceived as more prescriptive than is common for PPP contracts in terms of the prescribed design solution. For example, the PPP contract specified the use of polyester pipes, which did not turn out to be the optimal solution from the whole lifecycle point of view. However, as it was a contractual requirement, it was difficult to change.

Predicting the final cost to complete the outstanding work is complicated, but the Project Company estimates that there will be a deviation of approximately 20% from the original contract sum, with approximately half of that being attributable to the compliance with the European Union

environmental requirements, and the other half due to the increase in pipe length due to the reduction of the Minimum Irrigation Area. Both of these risks, and therefore the cost overruns, were retained by the Procuring Authority.

### Operations Phase

The transition from construction to operations is an ongoing process, with each irrigation sector starting operations once its construction is complete. This is taking longer than expected, as the landowners have to commit to joining the scheme before irrigation can begin and this does not always occur prior to construction works being completed.

An additional complication of the operations phase was agreeing the total duration of the PPP contract. The full operation of each sector begins once construction is complete and the landowners have committed to join the scheme. However, due to the size of the project, there was always going to be a significant time period between the completion of construction of the various sectors. The PPP contract stated that the operations phase was to last for 30 years, however it was unclear on how this would be measured. One clause stated that this 30-year period would begin once all construction was complete, implying that operations would take place on most sectors for longer than 30 years. Another clause suggested that the 30-year period would begin to be counted for each sector individually, so that no sector was in operations for longer than 30 years. This was finally clarified, and it was agreed that the contractual start date of operations for the purpose of determining the total duration of the PPP contract will be the day on which every irrigation sector is operational (that is, when construction of all sectors is complete), and the PPP contract and the operation of each section of the works will run for 30 years after that date.

The monitoring and reporting system for the operations phase is not as comprehensive and detailed as it is for construction. During the operations phase, the Project Company reports only water consumption and maintenance expenditure to the Procuring Authority, compared to a much wider range of performance metrics which are reported during construction. This is driven by the contractual arrangements, as construction costs are currently paid for by the Procuring Authority (as is detailed under the heading "Key Events" below), who therefore pay close attention to the construction works. Operational revenue comes entirely from user charges levied on landowners, and hence, there is less need for Procuring Authority involvement.

### Performance Monitoring and KPIs

There is a range of milestones relating to the progress of the project, including hectares available for irrigation, number of landowner agreements joining the irrigation system, hectares in operation, and increasing water consumption.

One of the challenges of the operations phase faced by the Project Company is that there are some clauses of the PPP contract that are difficult to fulfil from an operational point of view. For example, any damage to the infrastructure must be repaired within 48 hours of discovery, with deductions applied if this is not completed. This is not always feasible for the Project Company. For example, there was an incident where cables were stolen from a pumping station and replacing them required more than two days. However, the Procuring Authority believes this is necessary. A two-day delay in irrigation can seriously damage crops, and hence the requirement must be very strict. It was also agreed between the parties when entering into the PPP contract.

### Renegotiation

Various contract renegotiations took place between 2013 and 2015 to account for some changes that had occurred in the project up to that point. The changes covered by the first renegotiations were the reduction in pace of construction due to budget constraints of the Regional Government of Catalonia, as well as the change in construction scope that was required due to the requirement for the additional protected area for the birdlife. The renegotiations that occurred between 2013 and 2015, and the issues with financing and the protected areas for the birdlife, are described in more detail below under the heading "Key Events".

It is understood that both the Procuring Authority and Project Company are now in agreement that there will be a requirement for an additional formal renegotiation of the PPP contract at a later date, to take into account the aspects that are likely to affect the financial performance of the Project Company as the project progresses. These include:

- Reduction in water available for irrigation. The requirement for additional protected area for the birdlife has limited the water available for irrigation to 300 GL/year, which is less than the 340 GL/year originally anticipated. Currently only 160 GL/year are being used, so this has not yet become an issue, however selling water is the key revenue source for the Project Company and so will have to be dealt with once the construction works are completed. The stakeholders interviewed anticipate that demand for water will be greater than what is available, given that the landowners will have already paid for construction of piping on their own land.
- To ensure financial viability of the project, the Project Company relies on landowners contributing to its revenue. If the pace at which the landowners are joining the project is slower than forecast, the Project Company may want to renegotiate a further contract extension, as it is currently taking this risk.

### Project Company Ownership

When financial close was reached, the Project Company contained nine equity investors, who were a mix of construction and operations contractors. One of these equity investors sold its shares to the remaining eight, with the largest three holding approximately 85% of the shares. This change of Project Company ownership did not cause any delays to the project and no approval was required by the Procuring Authority. The Project Company perceived it beneficial to have fewer equity investors to manage. The Project Company is also of the opinion that the equity interests of the construction companies and operating companies are well balanced, which helps to reduce the risk that one element of the project (i.e. either construction or operation) is prioritised over the other.

### Public Stakeholder Engagement

From the beginning, fewer landowners joined the scheme than had been expected, leading to a reduction in the Minimum Irrigation Area described above under the heading "Construction Phase". Many landowners considered the price of water too high and were unsure of the perceived benefits of joining the scheme. This has gradually improved, and the majority of landowners are expected to have joined once construction is completed. The Regional Government of Catalonia is committed to the project and is expected to budget around €30 million per year until 2030 to drive the completion of the construction phase, although this has not been formally agreed yet.

The main challenge with the landowners is the change in mind-set. They are used to managing non-irrigated land and changing to an irrigated system implies an investment and an additional operational cost that they will have to bear when joining the system. Also, the crops that can be cultivated on irrigated land are different, and many landowners are wary of this large-scale change.

Good engagement with landowners in irrigation projects must be a priority from the outset to ensure their viability. The Procuring Authority, together with the Project Company, is currently undertaking awareness-raising campaigns to engage the landowners. This involves the Procuring Authority running a publicity campaign to advertise the loans on attractive terms being offered to landowners to cover the cost of the additional work they are required to undertake, while the Project Company contributes to the campaign with information on success stories from the farmers who have already joined the scheme. So far this has been seen as a useful approach, as landowners are continuing to sign up.

### RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

There was some disagreement between the Procuring Authority and Project Company over how certain discussions were managed, especially those related

to environmental compliance. For example, the Project Company noted that the Procuring Authority negotiated unilaterally with the European Union environmental authorities with regard to the requirements to protect birdlife. As this was an issue that greatly affected the design and management solutions of the project for which the Project Company was responsible, the Project Company was of the opinion that it should have had some involvement in the negotiations in order to consider the impact. The Procuring Authority did not agree, and believes that the discussions with the European Union have been conducted appropriately.

### KEY EVENTS

#### Termination of the Loan Agreement

At financial close, the Project Company signed a loan agreement with a syndicate of banks to secure the financing necessary to complete construction of the project. A bespoke financing arrangement was provided to complete construction of the sectors whereby, once each sector was certified as complete, the liability for the repayment of the associated debt was transferred to the Procuring Authority under a sale of receivables model. The arrangement was for the Procuring Authority and landowners to then make regular payments over a 20-year period to pay off the debt. Operational revenue for the Project Company was to be generated from the tariffs charged to landowners who used the irrigation system.

During the Global Financial Crisis of 2007, the investment rating of the Regional Government of Catalonia was downgraded to junk status, and consequently the lenders terminated the loan agreement in 2012. The national government had a scheme at that time which allowed regional governments to borrow at a low interest rate. The Regional Government of Catalonia took advantage of this scheme to pay off all outstanding debt to the lenders, which was approximately €300 million.

When the loan was terminated, there were some sections of work which were still in construction, and hence the debt had not yet been passed to the Procuring Authority, as required by the bespoke financing arrangement described above. The Project Company absorbed the construction costs of these unfinished parts of the irrigation system and they are yet to be refunded by the Procuring Authority.

Since the termination of the Project Company's loan agreement, the Procuring Authority has been paying for the construction directly. The Project Company now acts as a project manager for the design and construction by subcontracting out the work for each of the sectors. It is then reimbursed for the work carried out. This is similar to how the Project Company managed construction prior to the termination of the loan agreement, and there was

no change in the construction contractor. Under the new arrangements, the Project Company takes limited risk for the design and construction, as the Procuring Authority assumes liability for all construction works, together with landowners joining the irrigation system and taking the responsibility for the irrigation works on their own land. The original arrangements remain in place from an operational perspective with the Project Company generating operational revenue entirely from landowners.

### Compliance with Environmental Requirements

The European Union Birds Directive stipulates the obligations of member states in relation to protecting birdlife, partly through requiring the introduction of what is referred to as "Special Protected Areas" to protect designated species of birds. In December 2007, the European Court of Justice ruled that Spain was failing to meet its obligations in the area covered by the Segarra Garrigues irrigation project. This required a significant change in the layout and size of the irrigated areas, and concurrently reduced the amount of water permitted to be removed from the Segre River. This added to the construction costs, which were entirely covered by the Procuring Authority, and required a renegotiation of the PPP contract to deal with the reduction in the water available for the irrigation. This was carried out by renegotiations between 2013 and 2015. One of the outcomes was to allow the extension of the construction period for 15 years on top of the original nine years, making a total of 24 years for the construction period. The operations phase remains as 30 years after construction is completed, and this remains viable as revenue from landowners is only used to cover operational costs, not to pay back any construction costs.

## LESSONS LEARNED

### **Good engagement with end users at an early stage during project inception and throughout the project is essential to ensure project viability.**

Engagement with end users is always important, especially when those users need to sign up to a project, i.e. pay user fees to ensure its success. In this project, it is clear that support from landowners was overestimated to begin with, leading to a lack of adequate engagement in selling the benefits of the irrigation scheme at an earlier stage.

The current awareness campaign run by the Project Company and Procuring Authority is seen as successful, as landowners are joining the project in greater numbers. Additionally, the Regional Government of Catalonia, through the Institute of Agricultural Credit, has offered soft loans to the farmers to help facilitate the inclusion of landowners in the irrigation system.

### **The Procuring Authority must carry out sufficient due diligence, to ensure that the scope of the project and any contractually prescribed reference design is compliant with all relevant legislation.**

It is crucial to ensure adequate due diligence and stakeholder consultation from an early stage of the project design and scope definition, as regulatory compliance can have a major impact on the project. This becomes particularly important for projects which are environmentally sensitive. Although the Regional Government of Catalonia approved the Environmental Impact Statement in 2002, this was not sufficient for the European Court of Justice. This led to a significant reduction of the irrigating areas and the total volume of water available for irrigation, which was prescribed in the conceptual design set out in the PPP contract. Increasing public concern over environmental issues, together with an ongoing evolution in relevant international regulations (e.g. European Union environmental regulations) may affect a PPP project at any stage.

In a similar way, any risk of challenge from environmental groups can be mitigated through earlier stakeholder engagement. This risk cannot be removed entirely, as some activists may disagree with the project at a fundamental level, however early and genuine engagement can discourage other groups from taking legal action.

### **Continuation of staff from construction through to operations improves the efficiency of managing the transition between the phases.**

Continuity of staff through transition phases improves performance. Many engineers who worked for the Project Company during the construction phase have continued through to the operations phase, and this has helped build trust between the parties. It is particularly important on projects that have a long crossover between the phases.

### **Over-specification in the PPP Contract, and development of input rather than output specifications, can have an adverse impact on the final design and whole-life costing.**

Overly prescribed specifications can limit the ability of the Project Company to innovate and develop efficient solutions. The contract requirements in this case were prescriptive in terms of the design solutions. For example, the contract specified the use of polyester pipes, which did not prove to be the optimal solution from a whole lifecycle point of view. As it was a contractual requirement, it was difficult to change.

**Government backing becomes very important in critical situations, such as lack of financing, and can mitigate the risk of project postponement or termination.**

In this project, the decision of the Procuring Authority to step in and repay the existing debt was driven by its financial exposure on other projects and its overall financial standing. Financial backing from the Spanish government was then provided to rescue the Regional Government of Catalonia as part of a wider strategy to help regional governments settle their existing debt with the loan providers. This allowed the project to continue in a situation which otherwise may have led to postponement or even termination.

## SPAIN

## Zaragoza Tramway



Image: "Tramway through Plaza Lanuza in Zaragoza" by Thierry Llansades / CC BY-NC-ND 2.0

## OVERVIEW

**Location**

Zaragoza, Aragón, Spain

**Sector**

Transport – Rail

**Procuring Authority**

Municipality of Zaragoza

**Project Company**

Sociedad de Economía Mixta Los Tranvías de Zaragoza, S.A.

**Project Company Obligations**

Design, Build, Finance, Operate and Maintain

**Financial Close**

30 November 2010

**Capital Value**

€350 million  
(USD \$465.7 million – 2010 exchange rate)

**Contract Duration**

35 years

**Key Events**

Delayed financial close and early construction before financial close was reached

## SUMMARY

Zaragoza is the fifth largest city in Spain. As was typical in other important cities in Spain, Zaragoza had a tramway since 1885. In the 1960s, investment in the tram system declined, and in 1976, the last tram line in Zaragoza disappeared, with the public transport service changed to city buses.

In June 2009, the Project Company, Sociedad de Economía Mixta Los Tranvías de Zaragoza, S.A., was awarded the PPP contract with the Procuring Authority, the Municipality of Zaragoza, to build a new tramway system, procure the rolling stock, and operate and maintain both the tramway and the rolling stock. The tramway system is 12.8km long, has 25 stops, two inter-modal parking garages and two depots, one of which is used as a main central terminal building. The 25 stops are served by both double and simple/single platforms.

Included in the PPP contract is the delivery, operation and maintenance of the rolling stock. The rolling stock is of the type Urbos 3, manufactured by Spanish company, Construcciones y Auxiliar de Ferrocarriles (CAF), who is also an equity investor in the Project Company. Each unit has five coaches, with a total length of 33 metres. An interesting design feature of the tram system is that it uses an on-board energy storage system, which accumulates the energy recovered during braking and can also charge during the 20 second stops, allowing the tram to run without an overhead power supply.

The project reached two different dates for commercial close. The first date is the provisional award and the second is the definitive award. That was the process to follow according to the Spanish law at the time, allowing one month for legal objections. This presents a last chance for any third parties to raise objections to the contract award or any irregularities that could have occurred during the tender and awarding process.

This project has won several awards, the latest being the Global Light Rail Award “Best Environmental & Sustainable Initiative”, awarded in London in October 2016.

### SUMMARY LESSONS LEARNED

- Having specialised staff dedicated to stakeholder engagement can provide opportunities to improve the service based on feedback received.
- Taking a holistic approach to addressing environmental and urban issues, as well as including the public in the decision-making process, can benefit all stakeholders and improve the overall outcome of a project.
- Collaboration can facilitate the development of innovative solutions.
- Having clear, measurable and achievable KPIs, regular independent monitoring, and facilitating data gathering in performance monitoring are all critical elements of the operations phase.

### PROJECT INCEPTION

#### Goals and Objectives of the Project

The Zaragoza Tramway project has its origins in the Zaragoza Sustainable Mobility Plan. The objective of the Zaragoza Sustainable Mobility Plan is to meet all transport needs of the city, while respecting the environment, the urban landscape and the cultural heritage of Zaragoza.

It arose from the need to equip the city with a complete transport network in response to its continued development, in addition to supporting the growing population, geographical expansion, and satisfying the needs of the people of Zaragoza in terms of travelling around the city in a safe, comfortable and efficient way.

With its daily service, the tram system is envisaged to meet the objectives of the Sustainable Mobility Plan. The co-existence of various means of transport in Zaragoza and the various links between them has led to a new form of multi-modal transport, which has offered improved comfort and flexibility for the users relying on public transport in their day-to-day activities.

The objectives of the Sustainable Mobility Plan are being achieved owing to the benefits of the project. The objectives are summarised as follows:

- Making Zaragoza a reference point for sustainability in Spain, thanks to the Sustainability Mobility Plan started by the Zaragoza Municipality.
- Bringing the city in line with other European cities that have opted to implement sustainable transport plans.
- Promoting the link between the different forms of transport in the city, thanks to its compatibility and ease of access to other means of urban transport.
- Improving alignment between different transport links, with concurrent stations or stops.
- Encouraging public participation in the use of public transport.
- Respecting the aesthetics, environment and traditional values of Zaragoza despite the changes that may occur on the streets of the city due to the introduction of a new tramway system.

This project has won 13 national and international awards. Municipalities from all around the world have visited this tram network to learn from it. This success comes from a commuter-friendly route design, which runs through the most central and populated areas, and is supported by a robust traffic demand study. Another key element in this success was the support of the shareholders (Zaragoza Municipality, CAF, TUZSA, Grupo Avanza, FCC Construcción, Acciona, Ibercaja y Concessia) and the rest of the stakeholders.

### MANAGEMENT OF THE PPP CONTRACT

#### Construction Phase

The design was developed using an existing outline design provided for the tender process. One of the key factors contributing to the project’s success is the design of the different areas and routes covered by the tram. The right of way was defined in the outline design. This selected route allows for a high number of users, who are provided with a transport link to and from areas of high demand.

The first 15 months of the construction phase were financed directly by the Project Company’s equity investors, with some funding also provided by the Procuring Authority during these initial stages. The delay in reaching financial close is discussed in more detail below under the heading “Key Events”.

The programme for construction anticipated two years for the first construction phase and another two years for the second construction phase. Substantial completion of the first phase of works was achieved six months in advance



of the date for final completion for that phase, with only minor works outstanding. At that point, as substantial completion for the first phase had been achieved, tram operation for the first phase and the corresponding milestone payment was made to the Project Company.

The construction phase also involved significant effort by the Procuring Authority and the Project Company in stakeholder management. Civil works in urban areas are complex, affecting a large number of public services and causing disruption to the daily lives of citizens and businesses in the area. To manage these public relationships with stakeholders, the Project Company employed a specific communications director. There were also information offices set up in several places around Zaragoza, so any individual or business could seek information about the project or any issues arising related to the construction phase.

### Operations Phase

As the construction programme anticipated two years for the first construction phase and another two years for the second construction phase, the operations phase under the PPP contract allows 33 and 31 years for the operations, for construction phases one and two respectively. This allowed the Project Company to start operations of the first constructed phase at the same time it was undertaking the construction of the second phase. This meant the Project Company was incentivised to finish the construction phase as soon as possible, to receive the relevant milestone payment and start operating and receiving the user-fee project revenue.

A customer service office was set up from the beginning of operations and is required to be operational during the entire operations phase as set out in the PPP contract.

### Performance Monitoring and KPIs

During construction, the Procuring Authority carried out intense monitoring of the works. This was a key element in the successful delivery of the works on budget and on time. A joint team comprising representatives of the Procuring Authority and the Project Company was created to supervise the works.

KPIs during the operations phase are also considered one of the key factors for success of the project. The key performance indicators in the PPP contract are called "Quality and Availability Indexes". There are around 15 indexes related to several aspects, like delays, cleanliness, etc. For every index, there is an associated payment deduction. The Payment Per Demand or Availability (PPD) is the amount paid by the Procuring Authority to the Project Company for the quality and availability of the tram's service.

These KPIs are thoroughly monitored by the Procuring Authority, which has four people full time in charge of controlling the quality of service.

Some KPIs associated with delays, for instance, are automatically generated by the software that controls the operation of the trams, which controls all aspects of the service (times of arrivals and departure in all stations, speed, location of the trams, etc.). Other KPIs are monitored via inspections carried out by the Procuring Authority.

KPIs seem to be working for both the Procuring Authority and for the quality of the service. From the Project Company's point of view, this monitoring is perceived to be too strict. However, undoubtedly this high level of monitoring is supporting the excellence in service and maintenance of all assets.

### Payment Mechanisms

In the construction phase, lump sum payments were made upon the completion of pre-defined construction milestones. Not achieving these milestones in the time specified and to the required quality was subject to deductions of up to €12 million (10% of the total subsidy payable by the Procuring Authority). This incentivised the Project Company to complete the milestones on time.

In the operations phase, the Project Company has three sources of revenue. The first is an availability payment (PPD) to the Project Company for the quality and availability of the trams' service. This payment depends on fulfilment of the KPIs described above under the heading "KPIs and Performance Monitoring".

The second source of income is a Payment Per User (PPU). This source has two parts; the first PPU income is received from the users as direct fares, and there is a second part that comes as a shadow payment, as the Procuring Authority pays an agreed amount for each user. The third, and final, source of revenue available to the Project Company is park and ride fares and advertising. This final source represents a small proportion of the total revenue sources.

The demand risk is shared between the Procuring Authority and the Project Company. The parties agreed a specific baseline level, and if the actual project revenue from user fees is more than 10% below the baseline level, the losses are shared 50-50 between the parties with no limit. If the revenue from user fees is over 20% above the baseline level, the Project Company retains 10% of the gains and the Procuring Authority the remainder (i.e. 90%).

For indicative purposes, the total of current income and revenue of the Project Company consists of 15% from quality and availability payments, 84% from payment per user revenue and 1% from park and ride fares. The stakeholders interviewed expect that these percentages will change in the future, when the tram will have a higher number of users, changing the percentages to 10%, 89% and 1% respectively.

In addition, the Project Company is required by the PPP contract to create a reserve account prior to starting the 10th year before handback. Then, every year until handback, starting with the 10th year before the handback and including the year of the handback, the Project Company must deposit in this reserve account 5% of the availability payments that the Project Company receives from the Procuring Authority. Any rolling stock improvements are expected to be covered by the reserve account.

### **Change Management**

As the design and construction risk was fully stepped down from the PPP contract to the construction contractor under the construction contract, claims for cost overruns and time delays were submitted in the first instance by the construction contractor to the Project Company. The Project Company would review and assess the validity of each claim made by the construction contractor and submit a corresponding claim to the Procuring Authority for its review and approval. No specific challenges have been identified by the stakeholders interviewed in relation to change management.

### **Environmental and Urban Issues**

Environmental aspects of the project were given a high priority from the beginning of the project. Considerable improvements of the existing green areas of the construction site have been undertaken.

For every tree that had to be removed for the construction of the tramway, two trees have been planted elsewhere. Also, the selection of the trees was carried out through a participative process, where neighbours and business owners were involved in the final selection of the tree species.

There is a stretch of 2km in the old town where an On-Board Energy Storage System (OESS) in the trains is used; this system avoids the need for overhead catenaries or any other system to charge the trams when they are rolling on this section. The OESS mounted on the trams are only charged while they are stopped at stations. Additionally, this system allows a reduction in the trams' electricity consumption when they are operated under catenary sections by means of storing the braking energy. The application of this innovative solution has a positive effect on total energy consumption and the visual impact of this infrastructure in a sensitive urban environment.

This project was also conceived as an opportunity to renovate the areas of the town affected by the construction of the tramway. The Project Company refers to the work in different streets of Zaragoza as a façade-to-façade intervention, providing a holistic approach to construction, instead of focusing solely on the infrastructure itself.

The Procuring Authority's approach in taking advantage of the construction of new infrastructure to improve the town's appearance is a good lesson on environmental integration and public engagement.

### **Managing Disputes**

The project did not have any disputes and any disagreements were generally handled through personal discussions between the senior management of the Project Company and the Procuring Authority.

In Spain, there are often no specific provisions for dispute resolution. All public contracts are regulated by the "*Ley de Contratos del Sector Público*" (Public Sector Contracts Law). This law regulates all contractual relationships between public administrations and private companies. If there is no agreement between the parties, the dispute goes directly to court.

### **KEY EVENTS**

#### **Delay in reaching financial close**

Financial close was delayed due to the economic crisis in Spain in 2009, which affected the negotiation between the Project Company and its lenders, and delayed an agreement. However, the Project Company chose to begin the design and construction works in August 2009, before financial close had been reached. Financial close didn't occur until November 2010, so this meant that the design and construction for both the tramway and the rolling stock were mainly financed by the Project Company's equity investors for the first 15 months, although some financing was also provided by the Procuring Authority in these early stages. The first phase of the tramway system was inaugurated in April 2011.

The decision to start construction works and take the risk for the costs of the construction phase for more than a year demonstrates the scale of risk taken by the equity investors and their commitment to the project.

### **LESSONS LEARNED**

#### **Having specialised staff dedicated to stakeholder engagement can provide opportunities to improve the service based on feedback received.**

During the construction phase, the Project Company's employment of a communications director responsible for the stakeholder communication strategy was considered successful for stakeholder engagement and management. During the operations phase, the existence of a customer service office is also a good way to manage communication with end users and the general public, and an opportunity to improve the service based on feedback received.

**Taking a holistic approach to addressing environmental and urban issues, as well as including the public in the decision-making process, can benefit all stakeholders and improve the overall outcome of a project.**

Environmental aspects of the project were given a high priority from the beginning. For every tree that had to be removed for the construction of the tramway, two trees have been planted elsewhere. Also, the selection of some of the trees was carried out through a participative process, where neighbours and business owners were involved in the final selection of the tree species.

Adopting a broad perspective towards this kind of infrastructure development in urban areas, and an openness to innovation, has generated benefits for all stakeholders and improved the overall outcome for the city. Taking advantage of the construction of the new infrastructure to improve the town's appearance is a good lesson on environmental integration and public engagement.

**Collaboration can help the development of innovative solutions.**

Collaboration, having an open mind about innovation, and adopting a strategic view about the introduction of an On-Board Energy Storage System (OESS) in the trams in specific areas of the town (with specific social and cultural interests) provided benefits to both parties and users.

**Having clear, measurable and achievable KPIs, regular independent monitoring, and facilitating data gathering in performance monitoring are all critical elements of the operations phase.**

Regular and independent monitoring of the quality of the services provided by the Project Company contributes to the satisfaction of the users and enables transparency and accuracy in the final payments to the Project Company.

UNITED KINGDOM

# Central Berkshire Waste Project



## OVERVIEW

### Location

Central Berkshire, United Kingdom (UK)

### Sector

Waste Disposal

### Procuring Authority

Reading Borough Council, Bracknell Forest Council, and Wokingham District Council (Re3)

### Project Company

Re3 Ltd

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

31 October 2006

### Capital Value

£48 million  
(USD \$93.9 million – 2006 exchange rate)

### Contract Duration

25 years

### Key Events

Dispute – Revenue Calculation

## SUMMARY

The Central Berkshire Waste project is a success story in terms of collaboration, overcoming challenges and the ability to adapt to changes. This private finance initiative (or PFI, as it is referred to in the UK) is a PPP for waste handling, treatment, transfer and disposal services which was conceived as part of a partnership between the Reading Borough, Bracknell Forest, and Wokingham District Councils. Since the date of financial close, it has lived through turbulent economic and political times, and it is currently operating in an environment that is very different from the time in which it was conceived.

The key event in this project is a difference of interpretation over revenue calculations. The parties had gone through different resolution processes, and the possibility of escalating the disagreement to the UK High Court was considered. However, both parties committed to reaching a negotiated settlement, and in finding a solution they demonstrated the effectiveness of clear communication and collaboration.

## SUMMARY LESSONS LEARNED

- Setting up a parallel informal audit to address issues with KPIs which no longer meet the Procuring Authority's goals may, in some circumstances, provide a suitable short-term solution.

- Co-location of the Procuring Authority and Project Company can help to more efficiently resolve issues at an early stage.
- Setting up an informal variation procedure may provide a solution if the formal variation procedure proves to be unworkable. It also highlights the need to set appropriate time periods when negotiating the PPP contract.
- Setting up a small, closed government industry network can have a positive impact on a program of PPPs in a particular sector, including through the sharing of knowledge.
- To help ensure that legal drafting is pragmatic, lawyers should be well supported by people who are involved after financial close, such as contract managers.
- Assigning employees who have not been involved in the lead-up to the dispute to the negotiations may provide independence required to resolve the dispute more efficiently.
- Processes of periodically reviewing KPIs may need to be considered to be included in PPP contracts to keep the project relevant to the needs of the time.
- Setting too stringent KPIs with small payment deductions may not provide enough incentive for the Project Company to achieve them.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

In 1998 the Reading Borough, Bracknell Forest, and Wokingham District Councils found themselves responsible for both disposal and collection of waste due to a change related to the organisation of local authorities. The three councils decided to partner together to address European Union and UK waste targets, which resulted in the creation of a joint committee known as the Waste Disposal Board.

The PPP contract was for the construction of waste handling, treatment, transfer and disposal facilities in Reading and Bracknell, the ongoing operations of these facilities, as well as receipt of municipal waste. The aim of developing these facilities was to increase household recycling to 50% and achieve 75% diversion from landfills no later than 2031.

The procurement partnership (Procuring Authority) was named Re3 to represent the three councils. The Project Company then chose to use the name of the partnership and call itself Re3 Ltd. While both the Project Company and the Procuring Authority carry the same name, there is no common ownership. The Project Company is owned entirely by private investors.

### The Economic and Political Environment during Inception

The project reached financial close in the third quarter of 2006. At this time the central government was ambitious in promoting private finance initiative PPP projects, and there was strong support for achieving waste targets. Financing for big projects was possible, and local councils were confident that they would be able to continue to pay for large and complex facilities.

The current environment in waste PPPs in the UK is completely different from the environment when the project was initiated. Much of the funding for local authorities in the UK comes from the central government, and after the Global Financial Crisis, and the introduction of austerity measures, the central government started to reduce this funding and support. Local authorities are responsible for funding waste PPPs, and they are finding themselves re-evaluating these projects, as their unitary payments are becoming unaffordable.

Currently, two waste projects are under the spotlight in the UK. In Manchester, a project was terminated after re-evaluation by local authorities and private parties, while in Sheffield, the City Council and the Project Company are in discussions over whether to continue.

## MANAGEMENT OF THE PPP CONTRACT

### Construction Phase

The construction phase for the development of the Central Berkshire Waste project did not see any significant disputes or delays. The construction of the facilities was due to take three years, and the Procuring Authority had a three-stage step-up payment mechanism. This meant that achieving certain construction milestones related to the two facilities in Reading and the facility in Bracknell affected the unitary payment, with each step-up increasing the portion of the unitary payment that was payable. This payment mechanism structure was in place to incentivise the Project Company to meet their construction milestones on time.

As the Project Company had taken the risk for design and construction, the construction contractor was self-monitoring the construction with the council monitoring "in the background". An independent certifier was also appointed by both the Procuring Authority and the Project Company to verify compliance with the output specifications, monitor progress and approve achievement of the construction milestones.

The risk monitoring system used by the construction contractor adopted a programme-based critical path method. This uses the theory of constraints, which is a methodology for identifying the most important barriers to achieving the goal and then improving that barrier so that it is not a limiting factor any more. The progress was

then continuously compared against the contingency time available (or float), whilst managing the risk of one activity or particular area compromising all the contingency available. The construction was completed on time, however it is difficult to assess how much of this was the result of the risk monitoring system employed by the construction contractor.

The councils were cautious not to take on additional risks, which was in line with the standard waste PPP contract they have adopted (the Waste Infrastructure Delivery Programme (WIDP)<sup>1</sup> Project Agreement). The councils rarely went further than attending weekly update meetings, and interventions were kept to a minimum as any more pro-active interventions would have been perceived as a precedent by the Project Company and could have implied that the Procuring Authority was taking on construction risk.

The sign-off of completion was eventually formalised following a detailed inspection performed by the Procuring Authority, the Project Company, the construction contractor, the operations contractor and the independent certifier.

### Performance Monitoring and KPIs

There are about 70 Key Performance Indicators (KPIs) in total contained in the PPP contract, including the secondary indicators, and while they are generally monitored by the Project Company and the operations contractor, the Procuring Authority performs a certain level of monitoring as well. The Project Company is currently meeting the KPIs consistently, and any payment deductions are minor. However, a small number of the KPIs are causing some tension, due to the Project Company viewing them as “draconian” and unachievable and the Procuring Authority seeing them as a continuing incentive for performance. This small number of KPIs have relatively low payment deductions and the Project Company’s view is that they don’t incentivise performance.

The KPIs for the project were set at the signing of the PPP contract, over 10 years before the writing of this case study, when the focus was on diverting waste from landfill. The Project Company was given the autonomy to achieve this however it saw fit, for example through incineration of waste. However, current government policy is now more focused on recycling and meeting recycling targets related to the circular economy. The KPIs therefore do not correspond well with the current goals of the Procuring Authority, as the Project Company is able to meet the KPIs without necessarily increasing the percentage of waste that is recycled. The KPIs are considered as “of their time”.

<sup>1</sup> The Waste Infrastructure Delivery Programme was established by UK Department for Environment, Food and Rural Affairs (also commonly known simply as Defra) to support local authorities to accelerate investment in the large-scale infrastructure required to treat residual waste.

To help address issues which are not fully covered by the current PPP contract, the Procuring Authority introduced a parallel process with an informal audit, reported back to the joint board, represented by Project Company and Procuring Authority members. The audit covers aspects which the Procuring Authority consider to be important, but are not covered properly by the KPIs. These are often more subjective indices, and hence may be better suited to an informal process.

The audit is shared publicly on the Reading Borough, Bracknell Forest, and Wokingham District Councils’ websites, however it is not advertised widely, as it does not exist to apportion blame or criticise the Project Company. Rather, it is published online to ensure that, should the performance with regards to these metrics drop, other councils and local authorities would be able to refer to it and proactively manage their own contracts, either with the same private partner or with others. The Procuring Authority is pleased with this process and did confirm that it was extremely helpful in addressing issues not monitored by the KPIs. The Project Company sees the audit as comprehensive and has no issues with the way in which it is currently implemented. However, this audit is not expected to last indefinitely, as it is not a requirement under the PPP contract and circumstances may change.

### Payment Mechanisms

For the operations phase, the unitary payment is linked to availability, a minimum tonnage guarantee by the Procuring Authority and subject to payment deductions linked to the performance KPIs. Above the baseline payment, there’s a cascade based on how the waste is treated (i.e. recycling or landfill), and the savings due to avoidance of landfill tax are a principal driver for the Project Company to recycle waste. A gain share mechanism exists, which allows for up to 50% of the savings due to avoiding landfill tax to be shared with the Procuring Authority. However, recently the baseline threshold has not been reached due to a fall in waste tonnage.

Availability payments are only made after the certification is issued by the lenders’ technical advisers. After the facility is certified, the performance-related payments are made based on the operational performance, which is measuring the amount of waste on the basis of weighbridge tickets and evidence of activity.

Over the year, an operational model is used by the Procuring Authority to forecast the expected level of business and type of processing to estimate how the payments will be allocated. Payments made are then reconciled with evidence submitted to ensure the accuracy of revenue calculations. The final reconciliation takes place six months after year-end.

## Change Management

Any material changes to the PPP contract have to abide by applicable procurement regulations. However, for smaller changes, the parties have found a way to smooth the process. It starts by one party submitting an informal notice of change, which explains the nature of the change and the reasons behind it. Keeping in mind that the change should be within regulations and the remits of the PPP contract, the informal notice is issued one month before the formal notice is issued. This is done to give each party the opportunity to review the notice, suggest amendments, and adapt to its implementation before it is formalised.

## ROLE OF GOVERNMENT

It was evident that the success of this project was partly due to the support from central government organisations and programmes. Two years from financial close of the project, the UK government initiated the Waste Infrastructure Delivery Programme to support local authorities in accelerating investment. The WIDP provides advice to local authorities and facilitates knowledge sharing between them. The WIDP's advices come in the form of published guides, and physical presence upon request. The contract management guides produced by the WIDP have contributed to the success of this project, and the knowledge sharing events organised by the WIDP have created a safe environment for local authorities to share knowledge effectively and directly.

WIDP was established by the Department for Environment, Food & Rural Affairs (also commonly known simply as Defra). WIDP provides commercial support to the relevant waste projects in England. For local authorities contracting waste private finance initiatives, the availability and expertise of WIDP acts as a counter balance to the private sector's commercial capability and budget. This did prove to be instrumental in the dispute, described under the heading "Major Events" below. The dispute process lasted for four years with significant costs incurred due to multiple adjudication proceedings.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

### Team Set-Up and Staffing

The Procuring Authority's project team was hired specifically for this project, and the majority of the members of the Procuring Authority's team who were involved in the procurement process have remained through the construction phase and into the operations phase. On the contrary, all Project Company staff who worked on the bid moved on once the PPP contract was signed. It was mentioned that there is a level of duplication of roles between the Procuring Authority and the Project Company.

This was seen as a poor allocation of resources that contradicts the spirit of the partnership, as there should be no need for two employees performing the same role for each party.

At the moment, the Procuring Authority has four employees working on the project. This was explained to be adequate, and while additional support would be useful this is unlikely to be affordable. For example, the Procuring Authority foresees a need to monitor the Project Company's financing obligations. The Procuring Authority did express the intention to work with the WIDP on this task.

### Training and Development

There is no structured training programme in the Procuring Authority's contract management team. The Procuring Authority did have a training budget, however, it was not fully utilised, and staff training is provided on a case by case basis. The WIDP also provides assistance with guidance and knowledge sharing which local authorities need for their development.

### Communications

From the three councils that make up the Procuring Authority, Reading Borough Council acts as the administrating authority. Thus, this council takes up the role of leading communications with the Project Company and stakeholders. The current strategy for public outreach is through social media, which has proven to reach more people at a lower cost than the previous arrangement of scheduling public meetings.

The Procuring Authority and the Project Company are co-located in a single location for the operational management of the PPP contract. This has helped greatly in building a strong relationship between the parties. The day to day interactions acted both as a deterrent to hostile behaviour and facilitator in building strong relationships. The nature of the relationship has matured to the extent that both parties continued to operate amicably even after a period in which they took wholly different positions on the sharing of revenue.

### Information Management

Both parties started with a shared information platform for data sharing, however this proved to be more complicated than was required for a project of this scale. The remedy was to take advantage of the co-location set-up and work together instead of using a virtual space.

## KEY EVENTS

### Dispute – revenue calculations

In 2010 a formal notice of dispute was issued by the Procuring Authority, five years after financial close, regarding the calculation of excess revenue. The parties went through multiple adjudication proceedings, and the dispute was almost escalated to the High Court before a resolution was reached for the benefit of each party.

One of the factors leading to the dispute appears to be a reduction in amount of waste collected from 2009 onwards. The reasons behind this reduction are hard to pinpoint to one single cause, as an interplay of various factors probably contributed to this, such as demographics (e.g. changes in local population, the nature of residential developments), a reduction in consumption (and hence waste generated) due to the Global Financial Crisis, or changes in local authorities' operational policies (e.g. collection versus disposal). The reduction in tonnage changed the financial outcomes for the Project Company, and in this context financial flows and payments came under close scrutiny. This led to the Project Company interpreting the PPP contract in a different way to the Procuring Authority, which took the view that the Project Company was withholding payments related to excess revenue.

While there were provisions in the PPP contract for dealing with disagreements of this kind, eventually the parties reached a stalemate. From the point of view of the Project Company, this was broken by bringing in people who had strong relationship building skills who then focussed on improving the relationship with the Procuring Authority. As the staff were new, they had a more independent view as to what had occurred previously and were able to take a more pragmatic approach.

It is important to note that the lack of agreement on the precise workings of the PPP contract, as well as ambiguity in the PPP contract itself, led to this dispute reaching a stalemate. A difference in views between two parties to a contract is common, especially given the length and complexity of this kind of project, and the challenge is therefore to find a way to overcome these disagreements without risking ending up in dispute. In this case a better understanding of what the PPP contract required would have helped improve outcomes for all parties.

As part of the solution adopted, the parties have negotiated some changes to the PPP contract conditions and payment mechanism to provide additional clarity and remove any residual ambiguity.

## LESSONS LEARNED

### **Setting up a parallel informal audit to address issues with KPIs which no longer met the Procuring Authority's goals may, in some circumstances, provide a suitable short-term solution.**

An informal, parallel audit is conducted on aspects that aren't well covered by the KPIs in the PPP contract. The Procuring Authority introduced the parallel process, which is reported back to the joint board, represented by Project Company and Procuring Authority members. The audit covers aspects which the Procuring Authority consider to be important, but are not covered properly by the KPIs. This is published online, and has encouraged the Project Company and the operations contractor to improve their performance in these areas.

This is a salient point both in terms of the issues with the initial setting of KPIs in a PPP contract at its signing and also outlines an approach to dealing with outdated KPIs.

### **Co-location of the Procuring Authority and Project Company can help to more efficiently resolve issues at an early stage.**

The Procuring Authority and the Project Company are co-located in a single location for the operational management of the PPP contract. Co-location of the offices helps greatly with relationship building on a day-to-day basis, and in particular during challenging times, such as disputes. Face to face interaction between the parties helps to resolve the issues before they are escalated through the formal contractual mechanisms.

### **Setting up an informal variation procedure may provide a solution if the formal variation procedure proves to be unworkable. It also highlights the need to set appropriate time periods when negotiating the PPP contract.**

The parties have introduced an informal variation procedure which they go through before the formal notice stipulated under the PPP contract is issued. This helps both parties familiarise themselves with the change, and allows tweaks to be made before it is introduced formally. Change orders and variations during the operations phase are in many instances driven by changing market needs and any changes in the Procuring Authority's policies or other external factors, which is common in long-term PPP contracts.

This practice, in this case, demonstrates a successful method of addressing the issue of variation procedures in the PPP contract that do not provide the parties with enough time to familiarise themselves with the issues. It also highlights an interesting lesson for the drafting of PPP contracts and the need to set appropriate time frames within the variation procedures to allow the parties to deal with the issues properly.



**Setting up a small, closed government industry network can have a very positive impact on a program of PPPs in a particular sector including through the sharing of knowledge.**

A small, closed industry network, such as the WIDP in the UK, helps promote best practice and knowledge sharing. The members are comfortable to talk openly to their peers and share lessons learned, and the WIDP has also issued a contract manual which is widely used and considered helpful. This kind of network can provide transactional support and any other contract management advice on specific issues, and helps the members stay abreast of topical issues and challenges faced by fellow members.

**To help ensure that legal drafting is pragmatic, lawyers should be well supported by people who are involved after financial close, such as contract managers.**

It is important, to minimise areas of ambiguity, that when drafting the PPP contract, both parties agree on terms and processes addressing interfaces and grey areas in the PPP contract before contract signing where possible to mitigate the risk of different interpretations and disputes. Lawyers should be well supported by contract managers and other relevant people involved after financial close to ensure legal drafting is pragmatic.

**Assigning employees who have not been involved in the lead-up to the dispute to the negotiations may provide independence required to resolve the dispute more efficiently.**

It is natural for people who are involved in a disagreement to have strongly held views. When a dispute escalates, it can be beneficial to involve employees who have not been involved in the lead-up to the dispute and focus more on relationship building and negotiation.

**Processes of periodically reviewing KPIs may need to be considered to be included in PPP contracts to keep the project relevant to the needs of the time.**

The nature and length of PPP contracts demands some degree of flexibility for reviewing and re-assessing KPIs. The needs of the market and the users will not likely remain the same all the way through to the end of a project as they were during inception. KPIs should be reviewed regularly to assess whether they have become outdated with regard to the current market or public needs. Processes of reviewing, adding, or discarding KPIs may need to be considered to be included in the PPP contract in order to keep the project relevant to the needs of the time.

**Setting too stringent KPIs with small payment deductions may not provide enough incentive for the Project Company to achieve them.**

There are about 70 KPIs in total contained in the PPP contract. The Project Company is currently meeting the KPIs consistently, and any payment deductions are minor. However, a small number of the KPIs are causing some tension, due to the Project Company viewing them as “draconian” and unachievable and the Procuring Authority seeing them as a continuing incentive for performance. This small number of KPIs have relatively low payment deductions and the Project Company’s view is that they don’t incentivise performance.

## UNITED KINGDOM

## Intercity Express Programme



Image: "Class 800 Trains with Train Operating Company (TOC) Liveries" Courtesy of the UK Department for Transport

## OVERVIEW

**Location**

United Kingdom (UK)

**Sector**

Transport – Rail / Rolling Stock

**Procuring Authority**

UK Department for Transport

**Project Companies**

Agility Trains West Ltd and Agility Trains East Ltd (collectively, the Project Company)

**Project Company Obligations**

Design, Build, Finance and Maintain

**Financial Close**

July 2012 (Great Western Route, as part 1 of the project) and April 2014 (East Coast Route, as part 2 of the project)

**Capital Value**

£5.7 billion  
(USD \$8.892 billion – 2012 exchange rate)

**Contract Duration**

27.5 years

**Key Events**

Changes required due to delays in electrification of the Great Western Main Line, refinancing

## SUMMARY

With large numbers of intercity trains on the UK rail network approaching the end of their service life, and additional capacity required to serve increased passenger numbers, the Procuring Authority, the UK Department for Transport, awarded two contracts to supply, finance and maintain a fleet of new trains. Given its scale, the project was split into two parts; one for the Great Western Main Line and one for the East Coast Main Line, with each of the Project Companies (namely Agility Trains West Ltd and Agility Trains East Ltd) being responsible for the trains for one of the main lines. As the two arrangements take the same form, this case study will largely refer to one PPP contract and one Project Company. The UK private train operating companies (the Train Operators) will pay the Project Company to use the trains, subject to performance and availability standards being met.

The electrification of the Great Western Main Line, originally due to be completed by 2015, was delayed, and the Procuring Authority took the decision to increase the number of bi-mode trains (electric plus diesel capability, rather than solely electric) for that particular line and to reschedule delivery.

At the time of writing this case study, almost half of the trains required to operate on the Great Western Main Line had entered into service operation.

## SUMMARY LESSONS LEARNED

- Changing external advisors at key moments may create additional risks to a project.
- A strong relationship between the Procuring Authority, the Project Company and other key stakeholders can help to mitigate the potential impacts of new issues.
- Resourcing is required to manage all relevant stakeholders, particularly where there are complex interfaces between multiple parties.
- Risks related to third parties with which the Project Company does not have a direct agreement will typically be retained by the Procuring Authority, which means it will have to manage those third parties.
- Where Procuring Authorities can share in a potential refinancing gain with the Project Company, they should be mindful of potential opportunities in the financial markets as they may lead to substantial benefits for the Procuring Authority.
- Variation provisions in PPP contracts should be workable and not overly complex. There are also times when the Procuring Authority should adopt a flexible approach to facilitate delivery of the broader benefits of the project.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The Intercity Express Programme project was initiated in 2005, with the Procuring Authority's business case showing that, at that point in time, trains were only just providing sufficient capacity to meet demand, and that existing trains were approaching the end of their expected service life. Major investment was required to ensure that high capacity, reliable services would be able to be provided over the medium- to long-term. The Procuring Authority ran a procurement process for a new fleet of trains for the two regions, and given its scale, the project was split into two parts, both of which reached commercial close in July 2012. The two lines are:

1. The Great Western Main Line, covering the region to the west of London. These works included 57 trains, the development of two depots and the refurbishment of one depot. It reached financial close in July 2012.
2. The East Coast Main Line, covering the intercity routes from London along the east coast of the UK. These works included 65 trains, two refurbished depots and one new-build depot, and it reached financial close in April 2014.

The decision to pursue a public-private partnership (PPP) model to procure the required rolling stock was taken due to the size of the undertaking and a desire to drive

value for money for the public sector. The common procurement route for trains in the UK is for private train leasing companies (referred to in the UK as Rolling Stock Operators, or ROSCOs) to procure and then lease new rolling stock to the Train Operators. However, with 122 new trains to be brought into service (consisting of 866 individual carriages) as part of this project, with a total capital value close to £5.7 billion, this was judged to be too large to follow this common route. The size of the deal also influenced the rationale for delaying financial close of the East Coast trains, as there may not have been sufficient capacity in the financial markets to complete both parts of the project simultaneously.

Some of the challenges of the project were anticipated before commercial close. The PPP contract included the concept of 'contemplated variations', which allowed the Procuring Authority to request variations should certain circumstances arise. These challenges included the following:

- The government was required to play a key role in managing the interests of various stakeholders. The UK rail network is operated by private Train Operators who bid to run a section of the network (a "franchise") for a period of time, generally seven years. The two main lines of the project (Great Western and East Coast) are run by separate franchises and were operated by different Train Operators during the design and manufacturing phase. The Procuring Authority needed to play a substantial role in managing these stakeholders in the development of detailed specifications during the design phase to agree a uniform base specification.
- The operation of the electric trains on the Great Western Main Line was dependent on the electrification of the line itself. When the PPP contract was being finalised, the plan was to electrify the line from London to Cardiff in Wales, which is approximately 145 miles (232km). Electrification of the line is the responsibility of Network Rail, who is the owner and manager of UK rail infrastructure. There was a risk that this work may be delayed, and the materialisation of this risk is described below under the heading "Key Events".

The contractual arrangement for the project is based on two agreements. The first agreement is the Master Availability and Reliability Agreement (referred to here as the PPP contract) between the Procuring Authority and the Project Company. It includes the guarantee that the Procuring Authority will require the Train Operators to enter into a contract with the Project Company and provide availability payments for the rolling stock throughout the life of the contract. The second agreement is the Train Availability and Reliability Agreement (the Interface Agreement) directly between the Train Operators and

the Project Company. The Interface Agreement defines the requirements for maintaining and making the trains available to the Train Operators for use on the network, as well as the corresponding availability payment obligations due to the Project Company. Delivery and maintenance of the rolling stock is passed down under a supply and maintenance contract from the Project Company to Hitachi Rail Europe, who is also the majority equity investor in the Project Company.

### **Project Company Organisation**

The contractual arrangements described above (the PPP contract, the Interface Agreement and the supply and maintenance contract) are on the same terms for both the Agility Trains West Ltd and Agility Trains East Ltd Project Companies, which were both initially owned by Hitachi (70%) and John Laing (30%) as equity investors.

The equity investors made the decision to establish a single management team working across both projects due to the commonality of contractual structure, ownership, and train design, delivery and operation. This management team was primarily resourced from long-term secondees from the equity investors. This structure proved extremely valuable in providing an effective single point of contact with the Procuring Authority team, who were also managing both contracts. Consequently, the Procuring Authority was constantly aware of the developing circumstances of the projects, particularly around delayed electrification, and could facilitate the negotiation and agreement of the variations ultimately required to address those issues.

This approach also meant that the Project Company, its equity investors and their financial advisors could develop a strong team to work with the lenders to raise the finance for both projects (and the additional loan agreements required for the subsequent variations). Hitachi's relationship with Japanese banks was also important for this.

### **The Economic and Political Environment during Inception**

The discussion on new intercity rolling stock began in the mid-2000s, with the project information released to the market in 2007. The preferred bidder, the Agility Trains consortium led by Hitachi, was selected in 2009, but the project was subsequently put on hold. This was due to the reduced capacity of the financial markets to provide finance as a result of the Global Financial Crisis, as well as the decision made in 2009 to electrify the Great Western Main Line, changing the requirements for the project. There was also another significant rolling stock procurement programme running at a similar time (Thameslink, where the preferred bidder was chosen in June 2011), as well as the major M25 highway project, which together had the potential to stretch the resources of the Procuring Authority and the financial markets.

In March 2010, a value for money review was carried out on the project, and the government also conducted a comprehensive spending review on all government expenditure. Additionally, there was a change in government in the UK in 2010. It was finally decided in 2011 to continue with the project, with the Agility Trains consortium remaining as preferred bidder.

## **MANAGEMENT OF THE PPP CONTRACT**

### **Construction Phase**

The Procuring Authority played an important role during the design and manufacturing phase of the project. At financial close, the Procuring Authority had developed a technical specification for the trains describing the output requirements, however the design specifications from the tender stage were limited. Targets had to be clarified, the specification had to be finalised into detailed design requirements, and these had to be reviewed. Input into all these stages was needed from both of the affected Train Operators, who sometimes had differing views. The Great Western Line has substantial demand from commuters who travel regularly into London, while the East Coast Line is used more for discretionary travel, and hence the specific needs (in terms of design and technical specifications) of the two lines can differ. During the design and manufacturing process, the Procuring Authority relied on their technical advisors, and considered it important to keep the same advisors throughout the entire process. In addition to providing the rolling stock, the Project Company was also responsible for constructing and refurbishing train depots.

The electrification of the Great Western Main Line was not part of the project. However, those works needed to be completed in order for the new electric trains to be tested and then used. When Network Rail did not deliver on time, the programme for manufacturing the rolling stock had to be altered to increase the number of bi-mode trains, and the design of the depots had to be updated to cater for the bi-mode trains' diesel engines. This is described in more detail under the heading "Key Events" below.

### **Operations Phase**

At the time of writing this case study, the operation of trains on the Great Western Line had just begun. The data collected by the Procuring Authority on the initial performance of the line will be used to evaluate the original business case, in terms of the benefits of the new rolling stock and the maintenance requirements.

### **Payment Mechanisms**

The project was set up such that the Project Company does not receive any revenue until trains enter service, at which point it receives availability payments, which are paid

by the Train Operators to the Project Company for each train in service and are subject to payment deductions. There are no additional payments from the Procuring Authority, though the availability payments payable by the Train Operators are guaranteed by the Procuring Authority. This arrangement incentivises the Project Company to bring the trains into service as soon as possible, as it was not receiving any revenue during the design and manufacturing stage.

The Train Operator pays the set availability payments to the Project Company on the basis of a specified number of trains being made available to the Train Operator at the start of each operational day. The Train Operator is responsible for returning the train to the Project Company at the end of the day. Under the performance regime, deductions can be levied by the Train Operator if trains are not made available for passenger service at the start of the operational day, or if train faults impact service provision during the day.

Further deductions can be imposed under the KPI regime for aspects relating to the condition of the trains themselves, such as cleanliness. A form of score board for 84 agreed KPIs is set out in the contract to monitor the KPI regime. The KPIs are divided into two groups; presentation of the physical condition of the train (e.g. scratches) and cleanliness. The Project Company populates these scoreboards every time the train is handed over to the Train Operator and the scoreboards are reviewed again during regular performance review meetings.

The set availability payment is paid in advance, with deductions applied retrospectively. This performance regime is a significant change for the Train Operators, who generally lease their other rolling stock and are responsible themselves for their maintenance. The Project Company is aware that this process will need to include a transition period for the Train Operators, and it has been working with them in advance of the trains coming into operation to avoid confusion and disagreement at a later stage. The Procuring Authority is also paying particular attention to the performance regime during the initial operational period.

### **Change Management**

There have been a number of variations during the design and manufacturing of the rolling stock, primarily due to the delays and changes to the programme for the electrification of the Great Western Main Line. The original intention had been to electrify the line to Cardiff. However, this was then changed to extend electrification to Swansea, a decision which was later reversed. Each of these changes implied an alteration to the type of train being delivered, as well as changes to the depots, which are also part of the project.

The largest, most time-consuming variations to the project were fundamental and all essential if the project was to respond to the delays in the provision of the electrified infrastructure. The subsequent commercial negotiations were complex and time-consuming. It should also be recognised that the complexity of the contracts, their variations, and the need to secure the lenders' approval inevitably meant that external advisors needed to be heavily involved. Nevertheless, both parties worked collaboratively to overcome these challenges. The Procuring Authority recognised that the primary objective had to be the achievement of fair, and properly established, negotiated and agreed pricing, as well as other operational and contractual amendments.

### **ROLE OF GOVERNMENT**

The role of the Procuring Authority during the design and manufacturing phase was substantial and clear. During the operations phase, this role will be significantly reduced, as the payment and performance mechanisms are predominantly between the Project Company and the Train Operators. In the interim period, where trains are starting to be introduced into the network, the Procuring Authority's role is less clear. The Procuring Authority is managing this to ensure it is not exposed to additional risk during this period.

### **Refinancing**

A refinancing occurred on the project in 2014. The East Coast phase of the project reached financial close in 2014, and the financing terms were better than those offered for the Great Western financing in 2012. The opportunity for refinancing was identified by Her Majesty's Treasury, with the Procuring Authority issuing a Refinancing Notice to request that the Project Company take advantage of the financing opportunity available. The final arrangement of the refinancing was an "all lender agreement repricing", where the lenders who had originally signed up agreed to new terms. The PPP contract sets out a schedule for sharing the refinancing gain between the parties. The refinancing was completed in a relatively short period of time, with 80% of the gains payable to the Procuring Authority resulting in approximately £60 million in savings.

### **RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY**

#### **Team Set-Up and Staffing**

The Procuring Authority team on this project is relatively small, and external advisors are used where specific technical, legal and financial expertise is required. Having most of the Procuring Authority staff continue from the tender negotiations into the implementation of the project was beneficial for retention of knowledge.

There was a change in the legal advisors used by the Procuring Authority, which created inefficiencies, as documents and knowledge had to be transferred. This may have been avoided by continuing with the same legal advisors or managing the transition between legal advisors more effectively.

### Training and Development

As this was the first PPP of this nature that the Procuring Authority had completed in recent times, the Procuring Authority had limited experience in managing this type of contract. Furthermore, the most recent introduction of a new train fleet prior to this project was in the early 2000s. As a result, there was a lack of expertise early on, and so this had to be developed and brought in. The Procuring Authority has since focussed on project management and assurance, with gradual improvements in commercial expertise, procurement and contract management.

### Communications

The Procuring Authority and the Project Company are both primarily based in London, which has enabled a collaborative relationship through face to face interactions. This was done consciously by both the Procuring Authority and the Project Company, helped by the fact that their concerns are often aligned. This collaboration and alignment of concerns helps to avoid an adversarial relationship between the two parties. The parties have not, however, co-located, which the Procuring Authority sees as positive due to the necessary degree of separation it provides.

### Information Management

The Procuring Authority has not prescribed an information and data management system. The Project Company submits reports via email in advance of monthly review meetings. There was a shared data management system used during the design phase, as well as a shared risk register, however this was done for practical reasons rather than as a strict requirement. This has allowed the parties to adapt their working styles to the circumstances.

## KEY EVENTS

### Dealing with the Delay to Electrification

The rolling stock for the Great Western Main Line was originally due to be split between 29x five-car bi-modes, 15x eight-car bi-modes and 13x eight-car electric trains. Bi-mode trains are electric trains that are equipped with underfloor diesel generators to provide propulsion where lines are not electrified. There had never been plans to electrify all the lines on which intercity trains operated on the Great Western network. Having part of the fleet bi-mode allowed continued operation onto the non-electrified routes and also a degree

of operational flexibility, in particular to use non-electrified diversionary routes during engineering work or disruption. There were contractual commitments to provide the electrified track for both testing as well as for operations.

In early 2015, it became apparent to both the Procuring Authority and Project Company that the planned electrification of the Great Western Network, necessary to support both pre-commissioning and testing activities as well as the eventual operational deployment of the primarily electric IEP fleet, was not going to be delivered according to Network Rail's original timetable.

To mitigate this forecasted delay and its associated implications, the Project Company and Procuring Authority worked to develop a number of contractual variations that: (i) converted the electric-only IEP trains into bi-mode IEP trains able to run without overhead wires, (ii) made the necessary modifications to the depots to accommodate and service diesel trains and (iii) addressed the commercial consequences of the delay in the provision of the necessary testing infrastructure and the resultant delay to the original entry into service date.

The Procuring Authority and Project Company were able to deal with this challenge successfully due to the strength of the relationship between the two parties, and also the commitment of the Project Company, together with its manufacturing contractor, Hitachi, to deliver the rolling stock with as little delay as possible. A commitment to finding a practical way to overcome challenges was seen as vital by all parties and, again, working closely with Hitachi, a revised delivery schedule was agreed, and the costs of delay were mitigated. There have been no formal disputes between the parties.

## LESSONS LEARNED

### Changing external advisors at key moments may create additional risks to a project.

The project has highlighted the importance of keeping the same key staff and advisors for a long period of time wherever possible, especially on long-term and complex contracts such as PPPs. A Procuring Authority will almost always rely on external advisors on technical, legal and financial issues in complex transactions, and changing the advisors part way through the project, particularly at key phases, creates additional risks and should be avoided where possible. In this example, the Procuring Authority was required by central government policies to retender advisory contracts, which resulted in a change of some of its advisors.

**A strong relationship between the Procuring Authority, the Project Company and other key stakeholders can help to mitigate the potential impacts of new issues.**

The strength of the relationship between the Procuring Authority, the Project Company and Hitachi allowed the Procuring Authority to deal with challenges caused by external factors, such as delays in the electrification of the rail line. In this case, a collaborative approach combined with a payment mechanism which incentivised the private partner to deliver the trains as quickly as possible allowed the track electrification issues to be addressed with minimal delay to the project itself. This was also helped by the drive and commitment of the Procuring Authority team's leadership, which, in this case, was vital to overcoming challenges.

**Resourcing is required to manage all relevant stakeholders, particularly where there are complex interfaces between multiple parties.**

The effort required to manage a range of stakeholders should not be underestimated, particularly in a multi-faceted environment such as the UK rail industry. In this case, the process of managing two Train Operators during the design and manufacturing phase was more challenging than anticipated, as it required additional effort and resources to balance the desires of two different operators which were not always aligned.

**Risks related to third parties with which the Project Company does not have a direct agreement will typically be retained by the Procuring Authority, which means it will have to manage those third parties.**

The electrification of the Great Western Main Line and the works required under the project were both independent and interdependent projects, and at the time of signing the PPP contract, Network Rail was an independent company with which the Project Company did not have a relevant, direct agreement. The Project Company and the Procuring Authority agreed that the Procuring Authority should retain the risk for electrification delays caused by Network Rail. Network Rail was reclassified as an arm's length public body in 2014, which means that it retains operational independence but the board of directors reports to the UK Secretary of State for the Department for Transport. While this change now gives the Department for Transport some additional influence over Network Rail's performance, management of Network Rail's performance to deliver on time remained a risk for the Procuring Authority. The delays and costs caused by the delay in electrification demonstrate the impact third parties can have on the overall programme of works. The complexities and unique features of the UK rail industry led to the eventual materialisation of this risk.

**Where Procuring Authorities can share in a potential refinancing gain with the Project Company, they should be mindful of potential opportunities in the financial markets as they may lead to substantial benefits for the Procuring Authority.**

Refinancing can sometimes be used to extract value and generate savings from a project, and it is common in advanced PPP markets for PPP contracts to allow the Procuring Authority to request refinancing and share in the Project Company's savings. In order to do so, the Procuring Authority must have the necessary expertise to recognise that an opportunity exists in the financial markets, and to carry out the process quickly enough to take advantage of market conditions. Refinancing the project resulted in substantial benefit for the Procuring Authority.

**Variation provisions in the PPP contracts should be workable and not overly complex. There are also times where the Procuring Authority should adopt a flexible approach to facilitate delivery of the broader benefits of the project.**

The Intercity Express Programme included a concept of "contemplated variations", which defines a process for one party to request a variation should certain circumstances arise. The concept was designed to simplify the process in agreeing changes where a certain level of agreement of likely changes was understood between the parties at the time of signing the PPP contract. In this case, the circumstances were more complex than anticipated, with electrification delays being much greater than what would have reasonably been expected. This meant the "contemplated variations" clauses weren't completely helpful, and the Procuring Authority decided to adopt a flexible approach.

USA

# I-495 Express Lanes



## OVERVIEW

### Location

Virginia, United States of America (USA)

### Sector

Transport – Roads

### Procuring Authority

Virginia Department of Transportation

### Project Company

Capital Beltway Express LLC

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

21 December 2007

### Capital Value

USD \$2.069 billion

### Contract Duration

80 years

### Key Events

Transition from contract signing to construction, and from construction to operations

## SUMMARY

The I-495 Express Lanes PPP (generally referred to in North America as P3) project consists of the construction of two additional high-occupancy toll (HOT) lanes per side along a 14-mile segment of the Interstate 495 highway (I-495) in the state of Virginia.

The I-495 is an interstate highway which surrounds Washington D.C. and is widely known as the “Capital Beltway”. The I-495 Express Lanes project, also known as the “E-ZPass Express Lanes”, consists of the expansion of a 14-mile segment of the I-495 extending from the Springfield Interchange to a point north of the Dulles Toll Road, in the state of Virginia. The project began when the Procuring Authority, the Virginia Department of Transportation (VDOT), signed an agreement with the Project Company, Capital Beltway Express LLC, in April 2005. However, financial close was not achieved until December 2007. The Project Company’s equity investors comprised of Fluor Corporation and Transurban at financial close.

A number of challenges arose during project delivery. By working collaboratively in a focused project office, committing appropriate resources to meet peak production periods, and working closely with the Project Company, these challenges were overcome and construction was completed ahead of schedule. The project opened early, on budget and with an industry-leading safety record.



## SUMMARY LESSONS LEARNED

- The level of Procuring Authority oversight must align with the risk profile of the PPP project. The Procuring Authority may also need to commit additional resources during peak production periods to meet its contract management obligations.
- Early and comprehensive public engagement with key stakeholders can deliver a better project for the community and for the project sponsor.
- Robust and early customer engagement with end users before operations begin, especially where new and unknown technologies are involved, is critical to a successful opening of a tolled facility.
- Allocation of operational responsibilities should be based on which party is best positioned to manage assigned responsibilities.
- Ensure adequate time is built into the project schedule for testing and commissioning of complex tolling and traffic management systems.
- Promoting opportunities for disadvantaged businesses, including small, women-owned and minority-owned businesses, can help the Procuring Authority meet broader policy objectives.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

In the early 2000s, the Procuring Authority began advancing plans for a traditional highway expansion to help address growing congestion on the Capital Beltway I-495 in Virginia. The plan faced significant opposition from the community, because it was considered unaffordable, required the demolition of more than 350 homes and businesses, and did not provide the transit options needed to support the local business district. In 2002, the private sector proposed an alternative plan under the Public Private Transportation Act – to build four new HOT lanes that would expand capacity and deliver new travel choices, including a network for buses and carpools. The Procuring Authority embraced the proposal. A partnership with the private sector and tolling would help the Procuring Authority deliver improvements more quickly and with fewer tax dollars, provide new travel choices, and reduce impacts on the community and the environment. The new approach would also reduce the number of homes which needed to be demolished from 350 to just eight.

The Procuring Authority advanced a competitive procurement, a series of environmental reviews, and a public engagement process for the new project. In 2005, local leaders voted to include HOT lanes as part of the

region's long-range transportation plan. In 2007, the Procuring Authority finalised a long-term partnership agreement with the Project Company to design, build, finance, operate, and maintain the USD \$2.069 billion HOT lanes project.

The Project Company's equity investors provided a substantial upfront equity commitment to help fund construction and financed the rest of the project through Private Activity Bonds (PABs) and a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. PABs are tax-exempt bonds issued by or on behalf of local or state government, to provide special financing benefits for qualified projects. The financing is most often for projects of a private party, and the government generally does not pledge its credit. The TIFIA loan program has a strategic goal to leverage limited Federal resources and stimulate capital market investment in transportation infrastructure by providing credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance. The arrangement enabled the state of Virginia to leverage private capital to translate every state tax dollar into four dollars of transportation improvements.

According to the project website<sup>1</sup>, the project supported 31,000 jobs and injected approximately USD \$3.5 billion into the economy. The Project Company contracted USD \$490 million of work to disadvantaged businesses and small, women-owned, and minority-owned businesses, which was the largest contribution in Virginia's history for such businesses for a single transportation project at the time.

## MANAGEMENT OF THE PPP CONTRACT

### Transition from financial close to construction

Design plan development, and design review and approval processes initially took longer than anticipated. Through additional resources, improved processes, and a focused, collaborative effort, both parties were able to bring the project back on schedule.

### Construction Phase

During construction, the existing eight-lane (four lanes per carriageway) Beltway was widened to a 12-lane facility, consisting of four general-purpose lanes per side and two HOT express lanes per side, located to the left of the general-purpose lanes. Construction required the replacement of more than 50 overpasses and bridges and the reconstruction of ten interchanges. The project also added direct connections between the Capital Beltway I-495 and the existing I-95/I-395 high-occupancy vehicle (HOV) lanes.

<sup>1</sup> [www.p3virginia.org/projects/i-495-express-lanes/](http://www.p3virginia.org/projects/i-495-express-lanes/)

Construction began in June 2008 and was completed ahead of schedule and on budget, opening to traffic on November 17, 2012. Buses, motorcycles, and vehicles with three or more people are permitted to use the express lanes for free; other vehicles must pay a toll. The toll rates change dynamically according to traffic conditions, which, in turn, regulates demand for the lanes and keeps them operating at high speeds. Tolls are collected solely via electronic means using E-ZPass transponders; no cash toll booths are available. All vehicles using the Express Lanes, including those traveling for free under the high-occupancy vehicle provision, must have a transponder.

The speed limit on the lanes was increased from 55 mph to 65 mph on June 24, 2013, after a Procuring Authority study concluded an increase in speed would not pose a safety risk.

The Project Company was responsible for monitoring quality control and quality assurance of the design and construction, in accordance with the contract and the project management plans it had developed. The Project Authority provided compliance monitoring through independent verification and assurance to ensure contract requirements were met. In addition, project schedule progress and contract compliance were monitored and certified through a general engineering consultant, appointed by the Procuring Authority.

A risk management protocol was adopted by both the Procuring Authority and the Project Company, which was focussed on financial and schedule risk. Primavera P6 was used as the base software to manage the project schedule and to assess potential project schedule risk. In addition, the project team met weekly to resolve identified project risk and scope change items. The risk management protocol also tracked the Procuring Authority's potential financial liability for its retained risks.

### **Transition between Construction and Operations**

The initial communications program to educate drivers started in January 2012 for the November 2012 opening of the I-495 Express Lanes and continued for six months after the opening. Multiple communication approaches were used to educate the entire region on new rules, requirements, and entry and exits of the new system. Drivers were required to buy an electronic transponder to use the system and could elect to purchase an E-ZPass Flex transponder that could be switched to the "HOV" setting when eligible for free use of the road (with three or more occupants). The entire system opened in November 2012 ahead of schedule. Some adjustments were made immediately following project opening due to unanticipated driver behaviour. Overall, initial toll revenues were lower than expected during the first two years of operations.

The drivers were slow to adapt to the new system. The behaviour of the drivers started to change once they realised the benefits the lanes provide, and became increasingly familiar with the dynamically tolled facility, the first-of-its-kind in Virginia.

### **Payment Mechanisms**

All Project Company revenue comes from tolls. The Project Company is required to undertake self-monitoring of its performance, with oversight from the Procuring Authority. The philosophy of this approach is that it is in the interest of the Project Company to keep the roadway open and in good condition, so that drivers will want to continue to use it and continue to pay the tolls. There is monthly and quarterly reporting provided by the Project Company, as well as a small number of KPIs associated with payment deductions in case they are not met. The Procuring Authority meets with the Project Company every month to discuss general operations, tolling and overall performance.

### **Change Management**

The number of changes implemented on the project is considered to be standard. There were some adjustments to the project scope, mainly related to civil works to accommodate approximately USD \$125 million in Procuring Authority-directed changes, and no extensions of time were granted. The Procuring Authority financed (or partnered with other agencies to finance) these changes implemented to accommodate and improve the expanding roadway network in and around the project. These were considered to be typical changes to a large project developed over several years.

The Procuring Authority set up a major project office that assisted in the process of managing changes (see following sections for more information on the major project office) and to reach resolution among the parties on an expedited schedule that was much faster than typical Procuring Authority scope change approval timeframes for routine projects. The major project office meant that the Procuring Authority had staff dedicated to reacting quickly to change management.

### **ROLE OF GOVERNMENT**

The Procuring Authority established an independent major project office to manage the review and approval of early design packages immediately following commercial close. The major project office housed project staff with some additionally hired resources where needed, maximising collaboration among the project team and ensuring focused, timely reviews. The government support was adequately resourced, project-focused, and allowed decisions to be made quickly and for the benefit of both parties to the contract.

## RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

The Procuring Authority described its relationship with the Project Company as collaborative, transparent and successful. This positive relationship allowed the parties to make full use of the Procuring Authority's major project office, and to overcome early delays and deliver the construction phase ahead of schedule, on budget, and with an industry-leading safety record.

### Team Set-Up and Staffing

The Procuring Authority considers its resources and set-up as adequate for the project, once the major project office was in place to enable it to fully meet its obligations. A general engineering consultant was engaged immediately after financial close and provided support for the design approvals and monitoring of the construction progress. The Procuring Authority also received some financial advisory support from third party consultants prior to financial close and during contract development.

On two subsequent projects, the Procuring Authority did not appoint a general engineering consultant after financial close. On these subsequent PPP projects, the Procuring Authority has been able to procure an engineering monitoring team during the procurement phase, to assist in the development of the project contract and documents and to then continue to assist the Procuring Authority in administering the contract through design and construction.

The majority of training for the Procuring Authority staff was delivered on the job.

## KEY EVENTS

### Transition from financial close to construction

Design plan development, and design review and approval process initially took longer than anticipated. Through additional resources, improved processes, and a focused, collaborative effort, both parties were able to bring the project back on schedule. Both parties committed to a collaborative and proactive engagement. The Procuring Authority set up a major project office, providing space for a project-focused team to identify and resolve project issues, and to streamline plan reviews and approvals.

### Challenges to transition to Toll Day 1

The high-occupancy tolling concept was new for end users and initial toll revenues were lower than anticipated during the first two years of operations. The users were not familiar with the new tolling system and the benefits it provides.

## LESSONS LEARNED

**The level of Procuring Authority oversight must align with the risk profile of the PPP project. The Procuring Authority may also need to commit additional resources during peak production periods to meet its contract management obligations.**

The Procuring Authority needs to commit appropriate resources throughout the various phases of project delivery and must be able to increase resources during peak production periods (both design and construction). There can be a misconception that the Procuring Authority's responsibility for project oversight is minimal, which is not accurate. Change management, in particular, requires dedicated resources to meet agreed approval timeframes. Following a slow start on final design development and plan approvals, the Procuring Authority committed dedicated resources to the project, in the form of a major project office, in order to carry out the required reviews and approvals, as well as any other activities that they were best placed to do. This helped to expedite progress and assisted in schedule recovery, resulting in opening the project 45 days ahead of schedule.

**Early and comprehensive public engagement with key stakeholders can deliver a better project for the community and for the project sponsor.**

Initial plans for the project included just one access point into the region's largest employment centre – Tysons Corner. After early feedback from major employers, elected officials and transit advocates, the project team changed the scope of the project to include three major entry and exit points to serve the busy commercial area. By proactively engaging stakeholders early (and outside the traditional public hearing process), the parties were able to work collaboratively to develop a transportation solution that provided a better outcome, helping to diffuse traffic congestion in the area.

**Robust and early customer engagement with end users before operations begin, especially where new and unknown technologies are involved, is critical to a successful opening of a tolled facility.**

The initial communications program started in January 2012 for the November 2012 opening of the I-495 Express Lanes and continued for six months after opening. The robust campaign included multiple tactics required to educate the entire region on new rules, requirements and entry and exits. The I-495 Express Lanes has new entrances and exits, and limited access at certain locations. In addition to a new type of facility, customers also needed to learn where they could get on and off the network. This was a big hurdle for travellers. Communications approaches included

multi-media advertising, on-road banners and dynamic messaging signs, community events, business briefings, direct mail pieces, and incentive programs to drive adoption of the E-ZPass.

**Allocation of operational responsibilities should be based on which party is best positioned to manage assigned responsibilities.**

The I-495 Express Lanes project included construction of both the Express Lanes and general-purpose lane improvements. The Procuring Authority transferred most operational responsibilities and risk to the private sector for the Express Lanes assets, and most responsibility for shared assets, such as sign structures and bridges. This required careful planning to ensure effective coordination and to establish clear responsibilities. The Procuring Authority retained the responsibility for snow and ice removal on the I-495 Express Lanes project in order to achieve benefits of scale and synergies associated with region-wide efforts and to ensure a consistent approach and prioritisation across the transportation network. A partnership agreement provides a framework to ensure both the Procuring Authority and Project Company are incentivised to work together to achieve optimum operations of the overall transportation network.

**Ensure adequate time is built into the project schedule for testing and commissioning of complex tolling and traffic management systems.**

Detailed planning and coordination for the road opening and commencement of tolling should begin at least one year prior to the anticipated opening date, including interagency coordination, customer education, pre-operations planning (e.g., vehicles, staffing enforcement, familiarity with operating system, construction staging to support for final road works etc.). Preparation of opening plans should be closely coordinated between the Procuring Authority and the Project Company, law enforcement, and other transportation and community partners to ensure a smooth and safe opening for customers. Extensive testing of the end-to-end system is critical to verifying the accuracy and reliability of revenue collection and enforcement activities, as well as ensuring a positive experience for toll-paying customers. Developing a “hyper care” period at the initial opening that includes intensified resourcing across all partners can help identify and quickly respond to inevitable start-up challenges.

**Promoting opportunities for disadvantaged businesses, including small, women-owned and minority-owned businesses, can help the Procuring Authority meet broader policy objectives.**

The Procuring Authority had a policy of prioritising disadvantaged business enterprises and small, women-owned and minority-owned businesses, with approximately USD \$490 million of work awarded to these organisations by the construction contractor through a variety of construction sub-trade packages. This was a relatively new concept at the time. The Procuring Authority played an important role in training and preparing small businesses to participate in contract opportunities.

USA

# Port of Miami Tunnel



Image: "Port of Miami Tunnel entrance from MacArthur Causeway" by Pietro / CC BY-SA 4.0

## OVERVIEW

### Location

Port of Miami, Florida,  
United States of America (USA)

### Sector

Transport – Roads

### Procuring Authority

Florida Department of Transport

### Project Company

MAT Concessionaire, LLC

### Project Company Obligations

Design, Build, Finance, Operate and Maintain

### Financial Close

15 October 2009

### Capital Value

USD \$920 million

### Contract Duration

35 years

### Key Event

Dispute due to unforeseen ground conditions

## SUMMARY

The Port of Miami Tunnel is one of the first public-private partnership (PPP, generally referred to as P3 in North America) projects in the State of Florida. The Port of Miami had only one access point through the city of Miami and was the cause of major traffic congestions in the city. A solution was needed to divert the incoming traffic away from the city centre. The solution was to connect the interstate network with the port through a tunnel. This would divert incoming traffic from the network away from the city.

Being one of the early PPP projects in the State of Florida, the Procuring Authority, the Florida Department of Transport, did not have significant experience in managing PPP contracts. In addition, the state and city could not provide the financial contribution necessary for the project. The support needed for the realisation and success of the project was provided by the federal government. The Florida Department of Transport provided all the technical, legal and financial expertise needed to manage and deliver the project. The Federal Highway Administration provided a loan of over USD \$340 million out of its Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance programme.

As a result, the significant federal support in combination with the state, county, and city local knowledge ensured the success of the project. Despite challenges faced in unforeseen ground conditions leading to a dispute, the project was completed ahead of schedule and under budget.

## SUMMARY LESSONS LEARNED

- Active community outreach and involvement is vital to the success of any major infrastructure project.
- Collaboration between different levels of government may be required to successfully deliver large infrastructure.
- Sharing of risks beyond the control of either party can have a positive impact on the working relationship between the parties.
- Involving the operations contractor during design and construction can assist from an operational perspective to ensure operations KPIs are understood and achievable.
- Early discussions on the interpretation and practicality of operations KPIs with the operations contractor can make for a smoother transition between construction and operations and help to avoid misunderstandings.
- Upfront consideration of significant construction and financial risks through the establishment of a contingency fund enabled a satisfactory outcome after the risks materialised during the construction period.
- There are some risks, which although allocated to the Project Company under the PPP contract, will still need to be closely managed by the Procuring Authority to avoid reputational damage.
- Both parties may need some time for adjustment between the construction and operations phases to settle into managing the operations phase obligations.
- Frequent (even weekly) meetings with all relevant stakeholders can assist the Procuring Authority to keep a close watch on the construction activities and manage any potential challenges.
- Dispute Resolution Boards may be costly to set up, however, they can also be an effective way of settling disputes and have the advantage of reducing the risk of litigation.

## PROJECT INCEPTION

### Goals and Objectives of the Partnership

The Port of Miami is located on an island in Biscayne Bay between the cities of Miami and Miami Beach. Before the construction of the Port of Miami Tunnel, the only access to the port was via a single bridge between the island and the city's central business district (shown on the bottom left of Figure 1). Over 16,000 vehicles were using the roads surrounding the port every day, with cargo trucks making up a quarter of that number.

With the expansion of the Panama Canal due to be completed in 2015, as well as the Port of Miami acting as the "cruise capital of the world", it was clear that better access was required. Congestion was inhibiting the operations of the port, and the commercial growth of the city. This was exacerbated by the traffic patterns of Miami, where congestion is an issue not just during weekday rush hour, but also in the evenings and on the weekends during peak nightlife hours. By connecting the port directly to the interstate network, a tunnel would help remove up to 1.5 million trucks per year from the roads in the downtown region of the city. It was partly for this reason that it was decided not to toll the tunnel; applying user fees would have introduced the risk that some drivers would avoid the tunnel and continue to use the existing bridge.

A tunnel had been considered by the region's planners as early as 1982, however, it entailed substantial risks. It would have to be built 40 metres below sea level, under a busy shipping channel and in an environmentally sensitive area with uncertain geotechnical conditions.

The project would in fact include two tunnels (one for each direction of traffic), as well as improvements to the connecting causeway and port roads. A PPP model was decided to be the most appropriate procurement model to ensure value for money for the state, as it would best allow the transfer of construction risk to the private sector. Additionally, given the economic uncertainties and hardship due to the Global Financial Crisis, the state was reluctant to take on a large amount of debt to finance the construction of the tunnel.

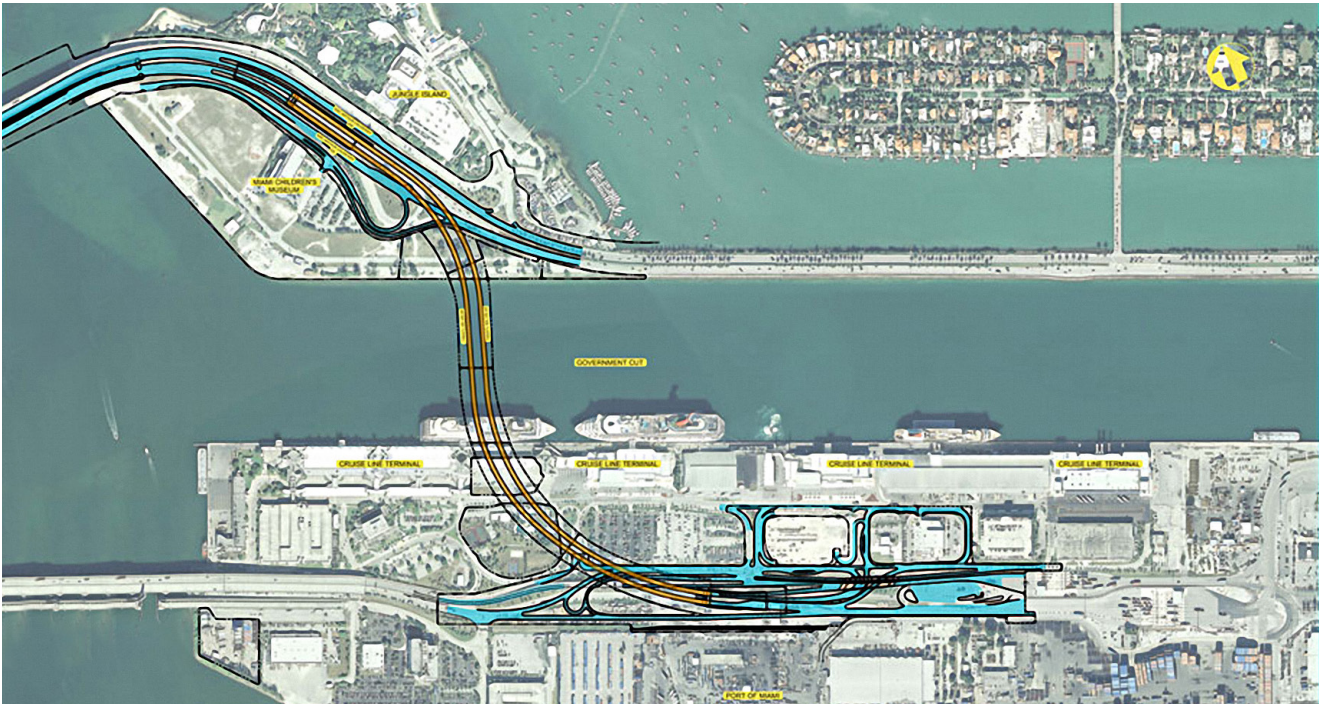


Figure 1: Port of Miami Tunnel "Yellow" (<http://www.portofmiamitunnel.com>)

### The Economic and Political Environment during Inception

In the years leading up to financial close of the Port of Miami Tunnel project, the local county had agreed to spend USD \$347 million on a new baseball stadium with significant scepticism from the public. The agreement was and is still controversial, with the real costs, including cost of borrowing, being argued to be higher than published. As a result, government expenditure on construction was expected to be scrutinised more closely, especially on a high-profile project such as a new tunnel. This reinforced the need to prioritise community engagement and inclusion, particularly during the high-risk construction phase. There was a great emphasis on the need to include the local community in the benefits of the project.

This project was tendered in the heat of the Global Financial Crisis, with the Florida Department of Transport selecting a consortium, Miami Access Tunnel, as the preferred bidder in 2008. The majority equity investor at that stage was Babcock and Brown, who went bankrupt before financial close. Meridiam subsequently joined the consortium as the majority equity investor to replace Babcock and Brown and financial close was reached with the Project Company, MAT Concessionaire, LLC, in 2009.

### MANAGEMENT OF THE PPP CONTRACT

#### Construction Phase

The construction process for the Port of Miami Tunnel was always going to be challenging, as the MacArthur Causeway

Bridge (to which the tunnel was due to connect) could not be shut down, and the port itself also needed to remain in full operation. The tunnels were the first tunnels in Florida to be completed using a tunnel boring machine (TBM), which has substantial upfront costs.

The first tunnel took eight months to complete, which was longer than originally planned, due to unforeseen geotechnical challenges. A large amount of coral stone, a hard material similar to granite, slowed down the boring from the start. However, more significantly, 30 metres below sea level the construction contractor encountered voids filled with a semi-liquid slurry which, in some locations, were the size of a city block. It was not possible to bypass the voids, nor leave them filled with the slurry. The solution to this challenge was to pump approximately 200,000 cubic metres of concrete into the voids, allowing the TBM to tunnel through a stable material. A contingency fund had been put aside by the Procuring Authority and the Project Company to cover additional costs due to geotechnical issues, and this was used to pay for this extra work. However, agreeing to reimburse the Project Company in recognition of the additional costs led to a dispute. This is described in further detail under the heading "Key Events" below. There were multiple work-fronts open at the same time, so the construction contractor was able to reschedule and optimise its work and mitigate the delays caused by the challenging ground conditions.

A final tunnelling challenge to be addressed was the existence of groundwater, which threatened to disrupt

the construction of cross passages between the two main tunnels. To avoid water pouring into the space that was being dug out, the construction contractor had to freeze the area to -30 degrees Celsius and keep it cold for 40 days to give the salty water time to harden.

Regardless of the challenges faced during construction, effective management of the construction phase and collaboration between the key parties resulted in completion of the project ahead of schedule and under budget.

The construction contractor also faced some challenges in terms of having a full understanding of and compliance with federal laws and regulations, particularly labour laws. It is very important that the Procuring Authority ensures that the Project Company and its contractors are fully aware of the federal laws affecting the works. Regardless of the risk allocation, serious violations of labour or safety laws will have a negative impact on the project and all parties involved from a reputation point of view. The Procuring Authority was also liable for fines if any of its projects were not compliant with relevant laws and regulation. In this project, the construction contractor hired a labour union company to assist it in complying with the federal labour laws.

### **Operations Phase**

The tunnel began operations in August 2014, almost five years after financial close. Approximately 14,000 vehicles use the tunnel each day, and an estimated 80% of port-related truck traffic has been diverted away from the central business district.

A number of operational innovations were introduced to the project to improve traffic flow and user safety. An automatic incident detection system scans the roadway for atypical events, such as a stopped vehicle, and then alerts workers. The tunnel's internal surfaces are fireproofed, and a deluge sprinkler system was installed to suffocate any fires. A system of sensors and alerts exists to warn oversize trucks not to enter the tunnel, including infra-red scanners, ship horns and emergency messages. Additionally, there are floodgates at each entrance, which can completely seal the tunnel off from a storm surge. The operations have so far been free from fatalities, and in July 2015, the project received the 2015 Infrastructure Project Award from the National Council for Public-Private Partnerships.

### **Performance Monitoring and KPIs**

The KPIs for this project are around lane availability, incident detection and response time, maintenance, lighting, vents and safety features. The operations contractor was actively involved during the design development and construction phase, which allowed it to suggest improvements and ensured that it was satisfied that the proposed design would meet the availability and

performance standards. As part of this engagement, KPIs were also reviewed in terms of their practicality from a performance standards point of view. The engagement of the operations contractor in this process was quite important to ensure the practicality of the operations obligations.

Construction performance is monitored by two third party consultants, supporting the Procuring Authority's team: a Construction Engineering Inspection (CEI) consultant, and the owner's (i.e. the Procuring Authority) representative. These consultants submitted regular monthly progress reports and have attended regular progress meetings with the Project Company and the construction contractor.

The Procuring Authority did not have the relevant operations and maintenance expertise on tunnels and it therefore had in place an operations and maintenance oversight contract with relevant third parties to help with independent performance monitoring and contract management. The Procuring Authority's team conducts spot checks of performance standards, reported failures and the workings of the operations control room.

The Procuring Authority found the first three months of the operations phase to be the most challenging, as they presented a learning curve for both the Project Company team and the Procuring Authority team. During this period, many operational procedures and staffing requirements were adjusted to suit actual conditions.

### **Payment Mechanisms**

The payment mechanism for the Port of Miami Tunnel is split between milestone payments for the construction phase and ongoing availability payments during the operations phase, both paid by the Procuring Authority. The availability payments were set at USD \$32.5 million a year, not including inflation adjustments or deductions.

During construction, external consultants were hired by the Procuring Authority under an owner's representative contract and a CEI contract. In addition to verifying compliance with the design, quality of works and overall progress (which was independently done by the CEI team with on-site presence), the owner's representative was responsible for certifying milestone payments to the Project Company.

Availability payments for the operations phase were set at a maximum annual payment. The payments are broken down into monthly unitary availability payments. Deductions attached to certain KPIs are enforced through a performance-points calculation, which are also linked to the events of default and termination.

The availability payment largely consists of the operations and maintenance (O&M) fee, fixed for 30 years with inflation adjustments. The objective is to ensure the asset's



condition would meet the required specification throughout the duration of the contract and at handback. The parties agreed to share the risk of changes in O&M insurance costs, as these were seen to be dictated by global trends outside the control of either party. Savings made or additional expenses incurred on these premiums by the Project Company arranging the insurance cover are shared with the Procuring Authority.

### Community Engagement

One of the clear strengths which has led to the success of this project is the ongoing community engagement, which was carried out by the Project Company. This was particularly important given the public criticism over the recent construction projects, which were seen to disadvantage local residents, and also because this project had a high profile in the city and a wider region.

The primary method in which local support was encouraged was through Operation 305 (referring to the local area code), which was a commitment to not just hire people from the local area, but also to source materials from local vendors. Approximately 83% of staff positions went to people from the county, and 400 locally-owned businesses were involved in the development of the tunnel.

The Project Company's team also put a lot of emphasis on community outreach, developing traffic management plans in association with local authorities to balance the demands of locals with those of the construction activities. Project Company representatives visited local schools to assist with Science, Technology, Engineering and Maths (STEM) activities, and have continued this into the operations phase. The TBM was even named Harriet by a local girl scouts group, after the 19th century abolitionist Harriet Tubman. Finally, the excavated material from the tunnel was deposited over landfill to create a recreational area on a nearby island. The ongoing focus on the community is seen by all parties as an important enabler of success.

### ROLE OF GOVERNMENT

The relationships between governments at different levels are vital to the ongoing success of this project. This began in the project structuring phase, where funds were provided by federal, state, county and city sources, with the City of Miami also granting land access. The USD \$150 million contingency fund set up by the Procuring Authority to mitigate the risk associated with unforeseen ground conditions was jointly funded by the Procuring Authority and the Miami-Dade County. The promise of ongoing funding to the Procuring Authority is particularly important given the decision not to impose tolls, as this increased the amount of money required from the

government. The Procuring Authority executed a funding agreement with the city and county, but these authorities had no direct oversight over the project.

### The Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA programme was established to provide credit assistance to qualified infrastructure projects in the United States (US). According to the Florida Department of Transport:

*"The TIFIA credit program is designed to fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital."*

The programme's main goal is to assist in improving transportation infrastructure in the US and close the increasing gap by attracting and enabling private participation. The programme does not provide a grant to states and cities; it offers loans with favourable terms to assist in securing the required capital from the private sector. The programme's flexible loan repayment terms allow the delay of repayments for up to five years after substantial completion. The programme also provided credit guarantees to lenders and offers standby lines of credit to assist with project cash flows.

### RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

#### Team Set-Up and Staffing

During the construction phase, the Procuring Authority's team reached 21 at the peak of the works, which was reduced to six as the construction phase came to an end. The Procuring Authority appointed one person to manage the PPP contract, with the authority and flexibility to recruit the internal and external Procuring Authority resources needed. As the Procuring Authority did not have substantial tunnelling experience, it relied on the expertise of the CEI consultant and the owner's representative.

At the start of operations, two full time staff members were appointed, and one was part time. Once the team became more familiar with the operations phase, the team was reduced to one full time employee and one part time employee. No structured PPP training was given to the Procuring Authority's contract management staff, however they gained relevant skills through "on the job" training.

#### Communications

The level of communication between the Procuring Authority and the Project Company stakeholders during construction was seen as beneficial to the project, particularly during periods of disagreement. Weekly meetings were held which included the Procuring Authority,

the Project Company and the construction contractor, as well as representatives from city and county governments. These meetings were focussed on day-to-day issues arising. This helped the Procuring Authority keep a close watch on the construction activities and helped mitigate the delays caused by disputes and challenging geotechnical conditions. In addition, there were monthly and quarterly meetings between the Project Company and Procuring Authority focussed on matters of strategic importance and any issues escalated from the weekly meetings. During the claim settlement period, quarterly meetings between the Procuring Authority and the Project Company were also joined by representatives from the city and county.

### Information Management

The Procuring Authority had an internal, department-wide document control system in place. The PPP contract did not prescribe any specific information management system. However, the owner's representative introduced software which facilitated document control and management during construction, which was considered an improvement on the system that the Procuring Authority had in place. All parties had access to this system to submit and upload documents for the contract management team to review and approve.

### KEY EVENTS

#### Dispute – Unforeseen Ground Conditions

The geotechnical challenges encountered, in particular the existence of soft voids in the rock, led to a dispute over the additional costs of pumping in extra concrete (i.e. grouting) to allow tunnelling to continue. A contingency fund had been created as part of the PPP contract as a way of sharing the risk of increased tunnelling costs. The risk was shared by structuring the overall contingency fund in a way so that the Project Company would be liable for the first USD \$10 million of additional costs, then the Procuring Authority would be liable for any costs above USD \$10 million up to a total of USD \$150 million. Where cost overruns exceeded USD \$160 million, the Project Company would be liable for another USD \$20 million. If USD \$180 million was exhausted, the parties would have the right to terminate the contract.

The PPP contract also specifically allowed for 8,000 cubic yards (6,116 m<sup>3</sup>) of concrete for grouting. However, due to the soft ground conditions (including the voids), an additional 250,000 cubic yards was required. As a result of a claim by the construction contractor, the Project Company submitted a claim to the Procuring Authority for the costs of pumping in additional concrete. This was, however, disputed by the Procuring Authority. As no agreement could be reached on the cause of the claim, nor its value, the claim was escalated to the project's Dispute Resolution Board (DRB), which decided in favour of the Project Company and

the construction contractor. However, the DRB's decision was only on entitlement for compensation and not the amount, which was later negotiated between the parties. The value of the settlement figure was well below what the overall contingency fund allowed for the project, and the Procuring Authority was satisfied with this outcome.

The contract did not provide for arbitration as a dispute resolution mechanism, and disagreements are generally escalated to the DRB if negotiations fail to resolve the dispute. The DRB is still used regularly on the project by the parties as a way to resolve disputes. It is costly to set up, however the parties have found it to be an effective way of settling disputes and it has the advantage of reducing the risk of litigation. The DRB also helps with dispute avoidance when used as a regular tool on this type of project. The parties meet with the DRB on a regular basis to discuss potential issues that could become disputes. These meetings are a forum for the Project Company and Procuring Authority to proactively resolve issues before they escalate into disputes.

### LESSONS LEARNED

#### Active community outreach and involvement is vital to the success of any major infrastructure project.

Support from the local community is vital to the success of any major infrastructure project, especially in an environment where PPPs may be subject to increased public scrutiny and possibly be perceived as controversial. In the Port of Miami tunnel project, both parties made it a priority to pro-actively involve the local communities in the project and use the project to address their needs. The parties agreed that in order for the project to succeed, it needs to have a notable impact that can be felt by the local community. As a result, the community engagement plan went beyond just media and public relations into delivering real economic, social and commercial benefits.

The community outreach plan involved three aspects:

- minimise nuisance to the local community caused by the construction works;
- identify opportunities to benefit the community through education and social activities;
- train and hire labour locally and use local contractors.

With the plan in place, the project managed to address the local community's social and economic concerns, and the challenges of their daily lives. A comprehensive traffic plan made in collaboration with the cities of Miami and Miami Beach ensured minimum effect on commuters. The inclusion of local programmes like the girl scouts and involvement in science, technology, engineering, and mathematics education mentorship helped the community with its social improvement initiatives. Finally, by upskilling local labour and the use of local contractors, the community was able to share in the economic benefits.

**Collaboration between different levels of government may be required to successfully deliver large infrastructure.**

The involvement of governments at four different levels (federal, state, county and city) was vital to the success of this project, from the structuring and signing through to implementation and operation. Joint funding and ongoing engagement and political support from different public bodies helped overcome challenges in construction, as well as improved community engagement.

**Sharing of risks beyond the control of either party can have a positive impact on the working relationship between the parties.**

It was recognised by both parties in this project that risks associated with O&M insurance cost changes are affected by global trends beyond their control. The risk was addressed proactively by both parties agreeing to share savings or cost increases in the premiums. This approach ensured a fair and optimised risk allocation and helped the relationship between the parties.

**Involving the operations contractor during design and construction can assist from an operational perspective to ensure operations KPIs are understood and achievable.**

The operations contractor should be involved during the design development and construction phase. As the party with the most expertise in operations, it will be able to suggest improvements which can reduce whole of life costs and help the service to be delivered to a high level. The structure of the PPP contract should incentivise the Project Company to do this regardless, however it is still important for the Procuring Authority to ensure it takes place. This may have more relevance if the operations contractor is not an equity investor in the Project Company. There may otherwise be a tendency for the considerations of the construction contractor to outweigh operational demands. In this project, the operations contractor was involved during the design and construction phase, which allowed it to highlight design deficiencies early enough for them to be rectified.

**Early discussions on the interpretation and practicality of operations KPIs with the operations contractor can make for a smoother transition between construction and operations and help to avoid misunderstandings.**

It is important that the parties reach agreement early on what each KPI means from an operational point of view, and how it will be measured. Agreement on the interpretation of the KPIs is key to minimising disputes relating to performance evaluations during the operations phase.

On this project, the operations contractor, in collaboration with the Project Company and the Procuring Authority, started reviewing the KPIs one year before the start of

the operations phase to assess their achievability and predict any challenges. The main issue that the operations contractor raised was regarding incident response times. The Procuring Authority had made this a priority, however, based on the final design there was a question over whether the KPIs were achievable. The Procuring Authority managed this by analysing the resources that the operations contractor had described in its operations manual and assessing whether its concerns were valid. The Procuring Authority concluded that the KPIs for dealing with a breakdown of a large truck were too onerous, given that it would be difficult to bring a certain size of tow truck into the tunnel. The timings for this were then adjusted, while all other KPIs remained as prescribed in the PPP contract.

**Upfront consideration of significant construction and financial risks through the establishment of a contingency fund enabled a satisfactory outcome after the risks materialised during the construction period.**

Although in many PPP projects involving construction works the majority of the construction risks are allocated to the construction contractor, tunnelling projects can present particularly high risks in terms of unforeseen ground conditions, delays and cost increases. In this project, although a dispute occurred with respect to unforeseen ground conditions, the availability of a contingency fund enabled a successful outcome that was acceptable to both parties and the delivery of the project.

**There are some risks, which although allocated to the Project Company under the PPP contract, will still need to be closely managed by the Procuring Authority to avoid reputational damage.**

The construction contractor faced some challenges in terms of its full understanding of and compliance with federal laws and regulations, in particular labour laws. It is very important that the Procuring Authority ensures that the Project Company and its contractor are fully aware of the federal laws affecting the works. Regardless of the risk allocation, serious violations of labour or safety laws will have a negative impact on the project and all parties involved from a reputation point of view. The Procuring Authority was also liable for fines if any of its projects were not compliant with relevant laws and regulation. In this project, the construction contractor hired a labour union company to assist it in complying with the federal labour laws.

**Both parties may need some time for adjustment between the construction and operations phases to settle into managing the operations phase obligations.**

The Procuring Authority found the first three months of the operations phase to be the most challenging, as they presented a learning curve for both the Project Company

team and the Procuring Authority team. During this period, many operational procedures and staffing requirements were adjusted to suit actual conditions.

At the start of operation, two full time staff members were appointed by the Procuring Authority and one was part time. Once the team became more familiar with the operations phase, the team was reduced to one full time employee and one part time employee.

**Frequent (even weekly) meetings with all relevant stakeholders can assist the Procuring Authority to keep a close watch on the construction activities and manage any potential challenges.**

The level of communication between the Procuring Authority and the Project Company stakeholders during construction was seen as beneficial to the project, in particular during periods of disagreement. Weekly meetings were held which included the Procuring Authority, the Project Company and the construction contractor, as well as representatives from city and county governments. These meetings were focussed on day-to-day issues arising. This helped the Procuring Authority to keep a close watch on the construction activities.

**Dispute Resolution Boards may be costly to set up, however they can also be an effective way of settling disputes and have the advantage of reducing the risk of litigation.**

A Dispute Resolution Board (DRB) was set up to resolve a dispute between the parties related to geotechnical challenges encountered by the construction contractor during tunnelling. The DRB is still used regularly on the project by the parties as a way to resolve disputes. It is costly to set up, however the parties have found it to be an effective way of settling disputes and it has the advantage of reducing the risk of litigation. The DRB also helps with dispute avoidance when used as a regular tool on this type of project. The parties meet with the DRB on a regular basis to discuss potential issues that could become disputes. These meetings are a forum for the Project Company and Procuring Authority to proactively resolve issues before they escalate into disputes.

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