

1. Introduction

The Global Infrastructure Hub (GI Hub) was established by the G20 with an assigned mandate that included to develop and disseminate a suite of ‘leading practice’ guidance documents for governments to use to improve the quality and quantity of their infrastructure programs. This particular guidance note (referred to as the ‘Reference Guide’) is designed to assist governments and public sector asset managers in developing output specifications to deliver Quality Infrastructure, as defined by the G20 Leaders at the Hangzhou Summit in September 2016.

The GI Hub engaged Mott MacDonald to help develop this Reference Guide with the aim to operationalise the definition of Quality Infrastructure agreed on at the Hangzhou Summit. This Reference Guide considers a wide range of Public-Private Partnership (PPP) models (under the broad definition of PPPs outlined in Chapter 4) and demonstrates, using real world examples, how output specifications support the delivery of Quality Infrastructure across a broad range of delivery modes using a life-cycle approach.

PPP projects are based on a collaboration between governments (as the procurers of infrastructure assets) and the private sector (as the designers, constructors, financiers, maintainers and sometimes operators of those assets). PPP projects have extended terms which often include the maintenance, rehabilitation/lifecycle and sometimes operation of the asset, in addition to the design and construction. The intent of PPP contracts is to achieve efficiencies and whole-life cost savings through the allocation of risk to the party best placed to manage it.

The core principle of an output specification is to specify the project in terms of measurable outputs, or ‘performance requirements’; it focuses on what needs to be delivered, not how it should be delivered. This is in direct contrast to traditional technical specifications, where the design is developed by the public sector (typically with support from consulting firms) and documented in a specification for the project works that prescribes both what needs to be delivered and how, using ‘prescriptive requirements’.

The intention is that output specifications provide an opportunity for the public sector to capitalise on private sector innovation, and align priorities by linking payment with contractual performance, to deliver a project that meets the public sector’s objectives and values over the asset’s life.

By adopting an output specification on a PPP project, the private sector team is incentivised to collaborate during the early stages of design to combine design, construction, maintenance and operations knowledge in making decisions on design solutions. This lifecycle approach to infrastructure design is considered a key driver in the achievement of quality outcomes and lifecycle efficiency.

On a PPP project, the output specification is arguably the most important contract document in delivering the project objectives, meeting stakeholder expectations and allocating project risk. There is a considerable body of knowledge that already exists regarding how to draft traditional prescriptive specifications, however there is an opportunity to further improve long-term infrastructure outcomes through properly drafted output specifications. This Reference Guide is designed to improve the global understanding of this subject to help governments provide their citizens with quality infrastructure assets and services.

In the context of this Reference Guide, Quality Infrastructure is an outcome that can be achieved through project outputs. Output specifications include the measurable project requirements (or outputs) that are informed by the project objectives or desired outcomes. Project outputs tend to be short term, discrete activities and initiatives which do not necessarily in isolation result in added value, or impact to the end user. Outcomes, on the other hand, are the medium- to long-term differences made to end users that can be influenced by the outputs or the relationship between multiple outputs. For example, the ability of the asset to withstand natural and other disasters is a project outcome, which can, in part, be achieved through an output specification that specifies the minimum seismic performance. Generally, the private sector is positioned to take the risk for the successful delivery of project outputs but has limited appetite to take the risks for project outcomes, as there are often external influences out of its control.

1.1 STRUCTURE OF THIS REFERENCE GUIDE

This Reference Guide consists of two parts:

- **Part A: Background information and lessons learned.** Provides the background principles and assumptions used in the development of this Reference Guide, including a definition of Quality Infrastructure, a definition of a PPP, a description of an output specification, an overview of a process to develop an output specification and a discussion on what makes a good output specification. This section also provides an overview of the methodology used to develop this Reference Guide and the case studies in Part B, and lessons learned and observations identified during the development of this Reference Guide.
- **Part B: Sector case studies and output specification examples.** This section contains a suite of case studies, across a range of jurisdictions and sectors, to provide real world examples of output specifications that deliver Quality Infrastructure.

This Reference Guide recognises there is no one global definition for a PPP, and the users of this tool will have a varying range of exposure to PPP projects. Sections 4 and 5 of Part A outline key principles so a reader who is not familiar with PPP projects can appreciate the relevance of the output specification and its role in project delivery. Where possible, definitions that are recognised by the World Bank PPP Knowledge Lab and APMG International's *PPP Certification Guide*¹, have been adopted to develop a document that is relevant to a range of jurisdictions.

1.2 ACKNOWLEDGEMENTS

This Reference Guide incorporates contributions from project Owners (government department or public sector authority), as well as Private Partners, who provided permission to use project content, commented on lessons learned, and identified examples to be included in the case studies.

Industry-recognised references such as the World Bank's *PPP Knowledge Lab*² and the *4Ps A Guide to Contract Management for PFI and PPP Projects*³ supported the development of the definitions adopted in this Reference Guide, as did other GI Hub publications such as the *Allocating Risks in Public-Private Partnership Contracts*⁴ and *Managing PPP Contracts After Financial Close*⁵.

The GI Hub team was led by Morag Baird and Maud de Vautibault. GI Hub engaged a team of experts from Mott MacDonald, a global engineering, management and development consultancy, to help undertake research and development of the Reference Guide.

A workshop was held while this Reference Guide was in draft format. The workshop was attended by over 40 delegates from 10 countries, and questions, observations and feedback have informed the final structure and content of this document. The final draft of the Reference Guide was available for further comment and inputs for an open consultation period of four weeks.

1 The PPP Certification Guide can be downloaded here: <https://ppp-certification.com/pppguide/download>

2 Available at: <https://pppknowledgelab.org/>

3 Available at: <http://archive.teachfind.com/ttv/static.teachers.tv/shared/files/10030.pdf>

4 Available at: <https://ppp-risk.gihub.org/>

5 Available at: <https://managingppp.gihub.org/>