

7. Conclusion and areas for further development

The Reference Guide focuses on leading practices in establishing output specifications to deliver quality infrastructure through harnessing the advantages of long-term contracts that adopt a life-cycle approach. While most case studies reviewed are projects delivered under a broadly defined PPP approach, many of the lessons learned will also be applicable to other types of long-term contracts.

The output specification is central to ensuring the government policies aimed at developing quality infrastructure are translated into the contractual documents to be delivered at a project level. However, a quality, project specific output specification is only one element that supports successful project delivery. The output specification should be considered alongside other elements that, when combined, will improve the infrastructure quality and project success. These include:

- **Business case development:** a robust approach that promotes project appraisal where project objectives and outcomes are defined, affordability thresholds are established, and sponsor support is received.
- **Stakeholder engagement:** a structured approach throughout project planning and delivery to identify the end user requirements, and promote buy-in.
- **Risk based approach:** identifying, analysing and evaluating risks and using the knowledge of the risks to inform project decisions throughout project delivery.
- **Project governance:** structured to align with the organisation's governance and appropriate for the stage of project delivery, with clear roles and responsibilities, communication protocols, issues management and ultimately a single point of accountability.
- **Procurement approach:** selection of the procurement model is informed by an unbiased view of the project risk and the procurement evaluation process supports the selection of a capable Private Partner.
- **Contract structure:** the payment terms (including progress payments, completion payments, performance-based payments) will influence the Private Partner's priorities, so should be aligned with the Owner's project objectives.
- **Performance monitoring:** Owner contract administration, including commissioning and compliance checks, audits and reviews, and condition assessments, is required to confirm the Private Partner is delivering the scope they are contracted to deliver.
- **Asset and information management:** how the asset will be operated and maintained should be a focus of the planning phase and should be reflected in the risk identification process, the procurement process and evaluation and the output specification development.

While the Reference Guide focuses on output specifications as a driver of private sector innovation, efficiency and alignment with government aims, the case studies also highlighted that there are times when more prescriptive requirements are appropriate. In short, if prescriptive requirements are used, they should be used with intent - for a specific reason and a rationale that delivers value-for-money rather than as a default position. The use of prescriptive requirements should be informed by the project objectives, risk identification and allocation, the procurement model and contract term.

The research for the Reference Guide also highlighted that some areas of good practice have emerged more recently, such as on information management, climate adaptation, and adoption of the SDGs. The following paragraphs present some areas for further development, to promote greater alignment with economic and development strategies and deliver more and better quality infrastructure. The GI Hub hopes that this Reference Guide will be a stimulus to further operationalising the principles of quality infrastructure investment and welcomes any reader feedback and suggestions.

7.1 AREAS FOR FURTHER DEVELOPMENT

Further alignment with economic and development strategies including the SDGs: The United Nations' SDGs are a current approach to spearhead sustainable development and help support consistency in the way projects and governments promote alignment with economic and development strategies. The SDGs were published in 2015 and there is now industry guidance, such as the United Nations Economic Commission for Europe (UNECE) international PPP standards²⁸, that align with and promote the SDGs. Given the projects were selected based on the stage of development (nearing construction completion or operation), the specifications reviewed do not explicitly mention the SDGs, and this is an area which could be further explored²⁹.

Establishing data management, benchmarking and measurement for quality infrastructure: While the G20 has made progress in defining and developing principles for quality infrastructure, metrics of quality infrastructure that could be used to inform KPIs at the project level are still in the early stages of development. Improvements in data management and analytics offer the potential to strengthen the measurement and implementation of performance requirements. A consistent approach for the development and implementation of metrics could enable stakeholders at the project level to benchmark performance, which, in turn, could feed into improved lessons learned at a policy level.

Using established and emerging information management approaches to improve project outcomes: Over the past five years, a number of jurisdictions have begun to use BIM in a more consistent and strategic way to enable the efficient production, sharing and management of digital asset information which leads to improved whole-life performance, cost reduction and better risk management. Progress is underway on the development of international standards and the implementation of programs that aim to capitalise on the benefits of BIM adoption. For example, the UK Foreign and Commonwealth Office (FCO)³⁰ is currently (as of January 2019) delivering the BIM Pathfinder Programme. The program is delivered with partner countries including Colombia, Vietnam, Indonesia, Brazil, Mexico and Peru, and will conclude with the rollout of BIM on selected pilot projects which will form the case study for BIM adoption in each country.

Mainstreaming of resilience, environment and climate: In recent years, countries have become increasingly aware of the interrelationship between environment, climate and infrastructure and a number of countries have declared a climate emergency. This policy imperative is starting to feed more explicitly into contract requirements and best practice is evolving. As outlined above, some jurisdictions have developed their own design guidelines to respond to climate change risks, for example the Ministry of Transportation and Infrastructure in British Columbia, Canada, which has recently issued a new Technical Circular providing guidance to the engineering community on how climate change risks should be considered regarding maintenance, rehabilitation and new construction projects. We expect the output specifications to be increasingly aligned to the new policy objectives and sharing of approaches could help strengthen their broader adoption.

Consideration of broader contract models with flexibility to future change: The speed of change and uptake of certain disruptive technologies, such as in ICT, has led Owners to adopt a range of approaches to maintain flexibility, such as retaining the ICT components or adopting shorter term contracts. This Reference Guide has focused largely on projects adopting a range of PPP approaches, and while the lessons learned are broadly applicable, it could be useful to further explore other types of innovative contractual models that allow more flexibility to respond to change.

²⁸ Further information available at: <https://www.uneceppp-icoe.org/about-us/>

²⁹ Examples and further context can be found at: <https://www.globalgoals.org/>

³⁰ Further information available in the downloadable report at: <https://www.thenbs.com/knowledge/national-bim-report-2019>