Global Infrastructure Hub

ALLEN & OVERY

PPP Risk Allocation Tool 2019 Edition - Energy, Communications and Industrial Parks

In collaboration with Allen & Overy

Foreword

Tackling large infrastructure gaps remains a priority around the world and governments are increasingly looking to draw on the private sector through long-term public-private partnerships (PPPs) to help deliver major infrastructure projects, because they recognise that private sector involvement can drive innovation and efficiency and provide additional financing solutions.

The increased attention to PPP contracts means that governments need to take a longer-term approach to the identification, allocation and ongoing management of project risks, which is at the centre of every PPP transaction.

As part of its leading practices mandate, the GI Hub has developed an update to its PPP Risk Allocation Tool originally published in 2016. As was the case with the 2016 version, the new PPP Risk Allocation Tool 2019 Edition contains a set of annotated risk allocation matrices for PPP transactions addressing the risks and issues on a sector by sector basis.

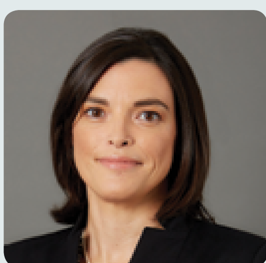
The PPP Risk Allocation Tool 2019 Edition contains matrices showing the allocation of risks as between the public and private partners in typical PPP transactions for 19 different types of projects, including both economic infrastructure (such as transport, energy, telecommunications and water projects) and social infrastructure (such as school and hospital projects). For each sector, there is also an identification of key risk areas and a discussion of risk allocation trends.

Each matrix is accompanied by annotations, explaining the rationale for the allocations, mitigative measures and possible government support arrangements. The annotations also describe alternative arrangements for countries with differing levels of PPP market maturity.

A deep understanding of the risk allocation arrangements is a precondition to the drafting of every successful PPP contract. The appropriate application of risk allocation principles is what determines whether a PPP project will satisfy the needs of the government, achieve value for money and be financially viable for the private sector (i.e. whether investors will be willing to commit financial resources to the project).

The GI Hub engaged the global law firm Allen & Overy to prepare the updated guidance tool. Norton Rose Fulbright, another global law firm, prepared the initial 2016 edition, and this 2019 edition builds on that work.

The guidance tool is closely aligned with the World Bank Group's Guidance on PPP Contractual Provisions 2019 Edition, which was also developed with the assistance of Allen & Overy.



"With a close alignment to the G20's focus on quality infrastructure and based on leading practices from around the world, the PPP Risk Allocation Tool provides important and practical information to governments looking to utilise PPP approaches to deliver the right outcomes for all parties. This tool complements nicely the existing PPP body of knowledge, and particularly the PPP Contractual Provisions report from the World Bank which was developed in close collaboration with the present tool."

Marie Lam-Frendo
Chief Executive Officer, Global Infrastructure Hub

"Robust and realistic risk allocation is vital for the long-term success of a PPP project. Allen & Overy is fully aligned with the mission of the Global Infrastructure Hub to build capacity to develop sustainable public-private partnerships. Built on global experience, these risk allocation tools support considered choices from the early onset of a PPP process and throughout negotiations to create value for all stakeholders. We aim for these tools to help unlock high impact infrastructure investment".

Helga Van Peer
Head of Global Public Law Group, Allen & Overy

Testimonials

"Risk allocation has a direct impact on the pricing of a PPP. It determines whether an investment will be perceived as fair, and whether it is affordable for tax payers and consumers on the one hand, while being financeable for the private sector on the other. The GI Hub Risk Allocation Tool is an important tool for contracting authorities when deciding whether and how to deliver an asset and/or service as a PPP. This critical contribution to the global framework for private investment in infrastructure complements a long list of collaborative outputs from GI Hub and the MDB community, including the World Bank. For example, the "World Bank Guidance on PPP Contractual Provisions" is a companion piece that complements the risk allocation matrix by providing examples of how some key risks can be allocated in PPP contractual agreements".

Jordan Schwartz
Director for Infrastructure Finance,
PPPs and Guarantees (IPG)
The World Bank

"Proper risk allocation and management is the cornerstone to the long-term success of PPP projects. It is quite simple, if project risks are not formally identified, analysed, and monitored or controlled there is great probability that the project scope, schedule, and budget may eventually be threatened. We normally have a lot to worry about when managing projects so why not stay in front of the curve and be proactive in managing risks? Each time the benefits outweigh the costs. The Risk Management Tool therefore, comes in handy in contributing to the significant body of knowledge required in PPP preparation and implementation".

Beatrice Florah Ikilai
Vice Chair
United Nations Economic Commission for Europe
Bureau of Public Private Partnerships,
Africa Representative

"Allocating risks appropriately among parties is essential to PPP project with the aim to improve quality and efficiency of services delivery and get value for money. It plays a vital role for both public and private sectors in their long-term partnerships. The PPP Risk Allocation Tool 2019 Edition has enriched risk system of PPP projects with a broad vision, containing identification and allocation matrices with annotations extracted from leading practices for 19 different types of projects. This will definitely give all PPP practitioners a more comprehensive perspective and deeper understanding on risks management in PPP contracts. Hope this new edition may facilitate further development of PPP projects worldwide".

Jiao Xiaoping
Director General
Head of China Public Private Partnerships Center

"Risk allocation is the epicenter or "heart" of every PPP transaction and remains a critical precondition for the successful delivery of any PPP project. The appropriate application of risk allocation and management principles enshrined in the guidance tool developed by the GI Hub is vital to ensuring bankability, sustainability and long-term viability of PPP procurement interventions for infrastructure service delivery in Nigeria and other EMDE countries. The extension of the guidance tool to social infrastructure PPP projects critical to quality of life and HDI growth is indeed very welcome.

To ensure the success of PPP procurement methodology for infrastructure projects, it is crucial for all PPP procurement ecosystem stakeholders to manage risks via a flawless life-cycle perspective, in which risks are identified and assessed at the earliest possible stage, and are then optimally allocated to the parties who are in the best position to manage them effectively and efficiently. Undoubtedly, the GI Hub guidance tool is a critical contribution to the PPP body of knowledge for practitioners and an invaluable and indispensable document for PPP procurement methodology growth in EMDE countries and indeed worldwide".

Engr. Chidi K. C. Izuwah, Snr.
Director General/CEO
The Presidency, Infrastructure Concession Regulatory Commission, Abuja, Nigeria

“Proper risk allocation and its management is critical to the long-term success of a PPP. The PPP Risk Management tool is a must-use reference for PPP professionals, both in the public and private sector, as they look to structure transactions that deliver value for money. Allocating risks to the party most capable of managing and mitigating those risks ensures these long-term partnerships can stand the test of time“.

Yoji Morishita
Head Office of Public Private Partnerships
Asian Development Bank

“Risk management stands at the center of successful PPP projects. GI Hub Risk Allocation Tool is a useful tool that reminds public and private parties of common risks associated with specific sectors and guides them in determining which party is best capable to manage it. This tool is an important addition to existing body of knowledge on contract development and management and will help to strengthen bankability of projects structured as PPPs”.

Noman Siddiqui
Manager, PPP Division,
Islamic Development Bank

Introduction

The PPP Risk Allocation Tool 2019 Edition is the second edition of the guidance tool, with the first edition focused only on economic infrastructure in the transport, energy, water and waste sectors. The 2016 version of the guidance tool was delivered in 2016 by global law firm Norton Rose Fulbright with the GI Hub team led by Mark Moseley.

The updated PPP Risk Allocation Tool 2019 Edition was delivered by Allen & Overy and builds on the earlier 2016 work with the GI Hub team led by Jack Handford and close continued involvement from Mark Moseley, Morag Baird and Maud De Vautibault. In addition to economic infrastructure projects, the 2019 version of the guidance tool contains risk allocation matrices for social infrastructure projects (such as hospitals and schools), submarine cables and industrial parks.

The PPP Risk Allocation Tool 2019 Edition is based on the collective global experience of over 20 senior lawyers from Allen & Overy. These lawyers have extensive experience advising project grantors and regulators, sponsors, proponents, funders and contractors in both established and emerging markets in civil law and common law jurisdictions as well as those with Islamic legal systems and on a wide range of projects.

Two workshops were held, in Istanbul in November 2018 and in Singapore in April 2019, to garner feedback on earlier drafts of the PPP Risk Allocation Tool 2019 Edition. Additional feedback was sought more broadly from those working in the industry or representing various interest groups through online public consultation. Norton Rose Fulbright continued to play a role in contributing to the evolution of the PPP Risk Allocation Tool and additional key contributions were received from the World Bank, the European PPP Expertise Centre and the Asian Development Bank.

This document is one of four documents that make up the PPP Risk Allocation Tool 2019 Edition and is focussed on projects in the energy, communications and industrial parks sectors. It contains, an introduction to the matrices, with the glossary and the energy, communications and industrial park matrices (namely the solar, hydro, power transmission, industrial park and submarine cable matrices) contained in the Appendices. The remaining three documents that make up the compete guidance tool focus on transport, social infrastructure and water and waste.

The diversity of experiences across markets means that particular risk allocation arrangements are not necessarily suitable for every market. Each of the matrices that will be found in the PPP Risk Allocation Tool 2019 Edition reflects positions reached in projects that have been shown to be bankable (i.e. they have reached financial close) but, as indicated, each matrix will contain annotations discussing alternative arrangements for different circumstances.

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Aim of the PPP Risk Allocation Tool 2019 Edition

The *PPP Risk Allocation Tool 2019 Edition* aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks between the government contracting authority (Contracting Authority) and the private counterparty (Private Partner) in a PPP contract. Risk allocation is at the centre of every PPP transaction, and a deep understanding of the risk allocation arrangements is a precondition to the drafting of every successful PPP contract.

The appropriate application of risk allocation principles is what determines whether a PPP project will satisfy the needs of the government, achieve value for money and be financially viable for the private sector (i.e. whether investors will be willing to commit financial resources to the project). The approach taken was to base the guidance tool on PPP transactions that have reached financial close, but drawing also on the experience of projects that have failed to reach that stage. Financial close is often seen as a proof of success, but reaching financial close does not mean that value for money has been achieved for the public sector. Reaching financial close does not automatically constitute proof of value for money. For example, where the risk allocation has been too favorable to the Private Partner (e.g. the public sector granting excessively generous guarantees) or the Private Partner is taking on and computing expensive risk premiums for risks that are not best managed by the private sector, these circumstances may not represent value for money for the public sector. Contracting Authorities will want to strike a balance between bankability and value for money. In addition, appropriate risk allocation will significantly increase the chances of procuring a project that is sustainable over the long term.

The essence of the guidance tool is a set of 19 risk allocation matrices, showing the allocation of risks between the Contracting Authority and the Private Partner in various types of PPP transactions, along with related annotations on the rationale for the allocations, as well as potential mitigative measures and government support arrangements. The sample matrices cover projects for both economic and social infrastructure facilities.

This guidance tool is aimed to be used in conjunction with the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. Once an appropriate allocation of risks between a Contracting Authority and a Private Partner is decided upon, the parties need to appropriately document that risk allocation in an agreement or contract to ensure that each party can effectively enforce their rights. The World Bank document provides drafting and guidance for specific provisions that are typically included in PPP contractual arrangements. In addition, it provides detailed analysis on the rationale underlying these provisions and how they have evolved over time.

Although the risk matrices in this reference tool focus on risk allocation that may be agreed in a PPP contract, more detailed risk matrices often play a broader role as a living tool that evolves and is refined through time, with different functions through the various stages of a project. For example, a more detailed risk matrix can be used to support ongoing decision-making post signature, during construction and operations (as a continuing tool for contract management). See also PPP Project Preparation and Delivery and Detailed Risk Identification and Analysis.

As well as PPP structures, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver infrastructure with private sector involvement. These include more traditional procurement of just the construction (or rehabilitation) of infrastructure, or procurement of standalone maintenance contracts.

The risks addressed in this guidance tool and much of the risk allocation guidance will be relevant to different contractual structures, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending).

PPP risk allocation and contract drafting should be also considered in the broader context of project preparation. Project preparation is widely accepted as a key driver to ensure investment in infrastructure is transformed into positive outcomes for the public. This is particularly true in the case of PPPs, as they are complicated arrangements for the delivery of infrastructure. A PPP contract that is structured around a project that does not deliver the social benefits in a sustainable manner will have a negative impact irrespective of how well the contract is structured and drafted.

Together with the World Bank guidance, an ancillary aim of the *PPP Risk Allocation Tool 2019 Edition* is to help to develop greater consistency and standardisation in the way that PPP contracts are structured and drafted. With a growing focus

on delivering infrastructure using PPP methods, consistency and standardisation can play an important role in providing efficiency gains for governments, as well as predictability for private sector participants looking to enter new countries or markets, thereby reducing overall costs.

As is the case with any guidance, care must be exercised in adapting the guidance tool to the specific characteristics of any given project. PPP project risks vary depending on the country or region where the project is located, the nature of the PPP project and the assets and services involved. Even within the same sub-sector, the individual characteristics of each project make it inherently problematic to suggest a 'one size fits all' risk matrix. The risk categories contained in the matrices in this guidance tool set out the key risks that are generally applicable to the sub-sector in question. There will, however, inevitably be more detailed risk identification required in individual projects, as well as additional risks to take into account in building a risk matrix which is specific to the project concerned. Procuring Authorities should use the risk allocation matrices contained in this guidance tool as a starting point, but always recognise that there will be additional project-specific risks and issues that need to be addressed.

In addition, the risk allocation and contractual drafting processes should include consideration of local laws and market conditions. Specific market considerations and differences in local laws (including differences in civil law, common law and specific jurisdictions) are discussed in detail throughout this guidance tool, including in the sub-sector specific risk allocation matrices. The guidance tool can therefore inform Procuring Authorities procuring PPP projects in any jurisdiction, in conjunction with professional legal advice which is jurisdiction and project-specific.

Risk Allocation in PPP Contracts

The underlying principle of risk allocation in a PPP transaction is that risks should be allocated to the party best able to bear – or most incentivised to bear – those risks. This involves identifying which party is best able to manage the likelihood that such risks will occur, as well as to manage impacts if they do eventuate. Although the principle is widely known and accepted, operationalising the principle in a detailed PPP contract is a complex task, requiring deep analysis.

From the Contracting Authority's perspective, the bankability of a PPP project is often a key consideration in determining if an infrastructure project can be procured using a PPP approach. However, governments should not just consider bankability, but also value for money and robust risk allocation. i.e. a project can be bankable, but not deliver value for money because a Contracting Authority is transferring risks to the private sector that could be more efficiently managed by the government. PPP is not a procurement method which transfers all risk to the Private Partner. There will always be some risks for which the Contracting Authority should be wholly or partly responsible.

In general terms, the Contracting Authority should retain those risks that are not realistically capable of being properly assessed or efficiently priced by the private sector market or where the Contracting Authority can manage and price the risk in a more efficient manner. If risks are carefully assessed and transferred to the party best able to control or mitigate them, this should result in a reduction of overall project costs, and thereby improve value for money for the government. This can be achieved in several ways:

- less expensive risk premiums will be charged by bidders;
- projects will be attractive to multiple bidders, creating competitive pricing tension; and
- the infrastructure services will be delivered on a sustainable basis, due to lower rates of disputes, defaults, renegotiation and insolvency.

If risks are not allocated properly, the Contracting Authority may not be able to generate enough interest for the project, with the result that experienced bidders may not be willing to participate in the tender process or may withdraw after an initial expression of interest. This can lead to a failed tender process (where there are no or very few bidders) or to a flawed process with only inexperienced bidders or speculative bids.

The parties to a PPP contract should also strive to achieve a balanced and reasonable risk allocation that will provide an appropriate basis for a long-term partnership. PPP contracts typically run for a significant period of time, typically between 15 and 30 years, and poor risk allocation can result in the project failing before the end of its expected lifespan, due to excessive claims, disputes, requests for renegotiation, insolvency or termination.

It is important for Procuring Authorities to have an understanding of the corporate structure of a Private Partner in a PPP transaction, so as to better understand which risks can be appropriately transferred to the Private Partner, and which should be retained by the Contracting Authority. From the Private Partners' perspective, risk will be managed primarily by reallocating it to the main subcontractors, i.e. the construction contractor and the operations and maintenance contractor. The availability of insurance or hedging will also be a key consideration, and the Private Partner will be required to place certain insurances by both its lenders and the Contracting Authority. While PPP projects usually involve limited recourse to the Private Partner's shareholders, its shareholders may also provide some degree of support to lenders, or to the Contracting Authority, to cover specific risks.

In assessing the likely cost impact, the parties may look at each other's ability to bear such costs and the related impact on price, as well as whether and how the cost impact could be offset or passed on by, for example, increasing the price of the service to end-users (in the case of user-pay PPPs) and/or by spreading the cost across taxpayers (in the case of government-pay PPPs).

Conducting 'market soundings' of the risk appetite of the private sector (including potential lenders, equity investors and contractors) in advance of the formal procurement process will allow the Contracting Authority to inform itself of, and take into account, key issues before finalising the risk allocations for a proposed transaction and enable that risk allocation to be tendered among several competing bidders.

The Contracting Authority may also obtain some comfort (though not as a substitute for its own due diligence) from the involvement of private sector third party funders who go through a rigorous process to satisfy themselves that the PPP Project is bankable. This can give the Contracting Authority additional reassurance in terms of its own (and its advisers') assessment of the Private Partner's ability to successfully deliver the PPP Project.

Scope of the PPP Risk Allocation Tool 2019 Edition

The primary objective of this *PPP Risk Allocation Tool 2019 Edition* is to provide additional guidance to countries that wish to develop a programme of PPP transactions. The desired outcome is that countries will have a useful reference guide to assist with their understanding of typical PPP risk allocation arrangements. The risks identified in the *PPP Risk Allocation Tool 2019 Edition* are risks that can be allocated and mitigated between the Contracting Authority and the Private Partner, primarily addressed through the PPP, concession or project agreement or the underlying law. Other risks - such as government procurement risks, private sector financial and performance risks, third party intervention/delay and the risks particularly associated with unsolicited projects - are outside the scope of this guidance tool.

The matrices assume a project financed project structure. There may be projects (particularly smaller projects) that are not project financed but are, instead, corporate financed (such as projects financed on the balance sheet of a construction contractor or an operating company). The focus of this guidance tool is on more complex project financed structures, but although some of the risk allocation guidance is specific to project financed structures (such as termination compensation), much of the risk allocation will be relevant to both project financed and corporate financed PPP structures.

The document also provides guidance for a wider range of contract structures, as they address risks that are key to any infrastructure procurement method (whether that be a PPP contract or a more traditional design and build contract), such as land availability, environmental risk, design risk and construction risk.

The initial 2016 edition of the guidance tool provided commentary in the transport, energy and water and waste sectors. In this *PPP Risk Allocation Tool 2019 Edition*, the guidance has been expanded to include new projects in the social and telecommunications sectors, with the result being that the guidance tool now contains 19 sample risk allocation matrices. In addition, the original 12 risk allocation matrices have been updated, building on the 2016 work, to reflect developments in global leading practices and feedback received since 2016. The 19 sample risk allocation matrices in this 2019 edition of the guidance tool are set out below, with the new project types marked with an asterisk.

Transport Sector
1. Road
2. Airport
3. Light Rail
4. Heavy Rail
5. Port

Energy Sector
6. Photovoltaic Solar Plant
7. Hydro Power
8. Power Transmission

Communications Sector
9. Submarine Cable*

Water and Waste Sector
11. Water Desalination
12. Water Distribution
13. Waste to Energy Plant*

Social Infrastructure Sector
14. School*
15. Hospital*
16. Social Housing *
17. Prison*
18. Government Offices *

Other
19. Industrial Park*

PPP Project Preparation and Delivery

PPP risk allocation and contract drafting should be considered in the broader context of PPP project preparation and delivery. A typical process of preparing for and delivering a PPP project involves the identification of infrastructure priorities, feasibility analysis, deciding to deliver the project using a PPP approach, project structuring, procurement, construction, operations and finally handback.

This guidance tool does not purport to act as a complete guide to PPP project preparation and delivery; instead it focuses on one area of the process - namely the structuring of the project in terms of risk allocation - which is complicated, and can lead to negative outcomes if it is not properly handled. However, risk allocation is only one of the critical elements of the process. Good risk allocation in a PPP contract will not fix a project that is economically unviable or not well prepared. Similarly, it won't make a project socially acceptable or ensure its effective management through construction and operations. For completeness, this section provides a brief contextual background to typical preparation and delivery processes and provides links to additional guidance on leading practices in other areas of PPP project preparation and delivery.

Feasibility and Decision to use a PPP Approach

Before procuring any project, the Contracting Authority should carry out a feasibility study for the project, looking at all relevant issues including land requirements and title, access and security, site condition, demand, necessary approvals and economic, social and environmental impacts. A project needs to go through these feasibility processes irrespective of which procurement option is being chosen to deliver the project.

The use of a PPP approach is then simply one of the procurement options available to a Contracting Authority that is seeking to provide new infrastructure services. The Contracting Authority should choose the procurement method that provides the best value for money, and a PPP approach will not be the right choice in all cases. Most of the other methods available to governments typically also involve some level of private sector involvement, whether through traditional procurement of the design and construction of an asset, the outsourcing of operation of an asset or service, or through a joint venture arrangement, a privatisation transaction or the establishment of regulated business.

This guidance tool specifically addresses risk allocation in a PPP contract, assuming that the Contracting Authority has carried out a thorough analysis in relation to how best to procure its infrastructure and has concluded that a PPP procurement is the right method for the project in question. In coming to this conclusion, the Contracting Authority may have its own government procurement guidance to follow and can also draw on the GI Hub's *Governmental Processes Facilitating Infrastructure Project Preparation Report*[1] and other guidance material, as described below.

Project Structuring

Project structuring is the process of configuring the legal obligations of the public and private parties in the proposed project, and these obligations will be expressed in the draft contract often found in the request for proposals package sent to prospective bidders. Project structuring should take place after a

1 Available at https://www.gihub.org/project-preparation/.

government has decided to use a PPP approach, and before the procurement process begins.

A key aspect of project structuring is the allocation of risks as between the Contracting Authority and the Private Partner, but this allocation can only be done after all the project risks have been identified and analysed. This process of identification and analysis is described below in the next section of this introduction, titled "Detailed Risk Identification and Analysis". Once that identification and analysis has taken place, this guidance tool can then be used to consider the most appropriate allocation arrangements for each particular risk detailed.

Once an appropriate allocation of risks between a Contracting Authority and a Private Partner has been decided upon, the next step in the project structuring process is to appropriately document the proposed risk allocation in an agreement or contract to ensure that each party can effectively enforce their rights. As noted above, the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*[2] provides drafting guidance for specific provisions that are typically included in PPP contractual arrangements, and provides detailed analysis on the rationale underlying the contractual drafting options.

The European PPP Excellence Centre's Termination and Force Majeure Provisions in PPP Contracts[3] and State Guarantees in PPPs[4] guidance documents provide additional important guidance on the structuring of PPP projects.

Procurement

Both this guidance tool and the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition* are also relevant to the procurement stage of a PPP project, where bidders may have an opportunity to suggest changes to the PPP contract (and the underlying risk allocation detailed in the PPP contract). Accordingly, the procurement process will serve to determine the final risk allocation and contractual rights and obligations of the parties throughout the lifespan of the PPP contract.

It is important to set the right minimum requirements and criteria when designing the tender process for the award of a PPP project. Choosing the right tender process and setting the right standards and criteria will define the quality of the competition. For example, if the Contracting Authority is concerned to ensure that the PPP project brings wider benefits to the local economy (such as using local businesses and employees and developing local skills and expertise), it may want to impose specific requirements.

Sharing reports from the feasibility stage with bidders can help to reduce bid costs and, consequently, the price bidders propose for the PPP project. To the extent any information from the feasibility stage is given to the Private Partner to rely upon (in terms of accuracy and sufficiency), the risk that such information is not accurate or sufficient will be borne by the Contracting Authority (as flagged in the relevant risk categories of the matrices in this guidance tool).

The choice of the right Private Partner is also of great importance and the Contracting Authority should ensure that it chooses the right partner. The relationship between the Contracting Authority and the Private Partner is key in a long-term PPP contract. In order to achieve this, the Contracting Authority will typically specify the technical and financial capabilities required of the key parties in each bid (i.e. the Private Partner and its proposed key subcontractors and investors) and evaluate their respective strengths as part of the procurement process. In some jurisdictions, the Private Partner may be required to provide certain additional performance security.

The World Bank's *Procuring Infrastructure Public-Private Partnerships Report 2018*[5] provides additional data and guidance on the procurement stage of a PPP project.

Construction, Operation and Handback

Because of their long-term and complex nature, PPP contracts cannot specifically provide for the entire range of events that might arise during their lifetime. As a result, PPP contracts typically have flexibility built in to enable changing circumstances to be dealt with as far as possible within an agreed contractual framework. All stakeholders in a PPP Project will need assurances that situations which are beyond their immediate control and which affect contractual performance will be dealt with in a way that allows them to arrive at a mutually acceptable solution. For this reason, both parties will typically want to place contractual restrictions on changes to the identity of the parties (and these contractual restrictions are addressed in the risk allocation matrices under the risk heading 'Counterparty risk').

2 Available at https://consultations.worldbank.org/consultation/guidance-ppp-contractual-provisions.

3 Available at https://www.eib.org/attachments/epec/epec_terminaison_and_force_majeure_en.pdf

4 https://www.eib.org/attachments/epec/epec_state_guarantees_in_ppps_en.pdf

5 https://ppp.worldbank.org/public-private-partnership/library/procuring-infrastructure-ppps-2018.

The GI Hub's *PPP Contract Management Tool*[6], which provides guidance for governments through the construction, operations and handback phases of PPP projects, highlights the importance of choosing the right Private Partner. It provides data and detailed case studies to guide governments in managing the day-to-day management of PPP contracts and situations where particular risks have materialised.

Additional Guidance Material

Several other reference documents are available to provide governments with guidance for the various stages in the development of a PPP project, including guidance materials produced by other multilateral development banks, other development finance institutions, the OECD, the European PPP Expertise Centre, the United Nations Economic Commission for Europe (UNECE), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and other entities. Many of these resources can be found on the GI Hub's *Infrastructure Knowledge Exchange*[7] and/or the World Bank's *PPP Knowledge Lab*[8].

Detailed Risk Identification and Analysis

As highlighted above, care must be exercised in adapting guidance to the specific characteristics of any given project. PPP project risks vary between projects and the individual characteristics of each project make it inherently problematic to suggest a 'one size fits all' risk matrix. The risk categories contained in the matrices in this guidance tool set out the key risks that are generally applicable to the sub-sector in question. There will, however, inevitably be more detailed risk identification required in individual projects, as well as additional risks to take into account in building a risk matrix which is specific to the project concerned.

From the Contracting Authority's perspective, it should make timely appointments of technical, legal and financial and insurance advisors experienced in PPPs and market practices in the relevant project sector. It is also important to involve internal and external stakeholders (including through public consultation) on a timely basis, so that all relevant risks can be identified. As identified in the GI Hub's *PPP Contract Management Tool*, it is beneficial to involve government officials who will be eventually managing the PPP contract during construction and operations. This will allow their experiences to be considered in the identification and analysis of risks during those phases. For example, the Contracting Authority will likely be responsible for signing off construction works, which may be complex and involve multiple assets. A lack of a full understanding of what is involved in the sign-off process can create risks of delay, so appropriate time needs to be provided for this in the PPP contract.

A typical risk analysis process will estimate the likelihood and potential impact of the eventuation of the identified risks. In this way, the Contracting Authority can make informed decisions on whether it is more efficient to retain a given risk or to transfer it to the Private Partner. It will also allow the Contracting Authority to fully consider its payment obligations, potential compensation liabilities and its contingent liabilities. There are several methods for considering the potential implications of risks eventuating, including qualitative and quantitative methods.

The risk matrices contained within this reference tool are not a "full" project risk matrices or risk registers as the Contracting Authority will need to consider not only the distinct risks, but also the probability of occurrence of individual (or concurrent occurrence of) risks, their impact, their valuation, their likelihood of occurring, etc.

This guidance tool does not go into detail on risk analysis other than to note its importance in informing the ultimate risk allocation structure used in a PPP contract.

For a summary of guidance on risk identification and the qualitative and quantitative methods for considering risks, see Section 3.3.1 (Identifying Risks) of the *Public-Private Partnership Reference Guide 3.0* that was developed by the World Bank and others[9].

Market Conditions

Risk allocation is influenced by various factors, including the maturity of markets, the experience of the participants and the level of competition between bidders. As a government delivers more PPP projects successfully, the risk perceived by private sector participants will reduce, making projects more attractive to investors, thereby creating a more competitive environment. In addition, because

6 https://managingppp.gihub.org/

7 https://www.gihub.org/infrastructure-knowledge-exchange/

8 https://pppknowledgelab.org/

9 Available at https://ppp.worldbank.org/public-private-partnership/library/ppp-reference-guide-3-0.

perceived risks change, the government may be in a position where it can begin to transfer more risk to the Private Partners as it develops a 'track record'.

A stable political, economic and legal regime and environment is desirable when seeking to successfully procure PPP projects. While certain associated risks can be managed under the PPP contract, ultimately the risk of investing in and lending to a PPP Project where these conditions do not exist may be too high for some private sector participants, particularly when compared with alternative investment or lending opportunities. Jurisdictions without a clear legal framework and solid institutional basis are perceived as likely to be more susceptible to inefficient and corrupt procurement which not only stalls the completion of infrastructure projects but also lowers the quality of infrastructure.

Depending on the Contracting Authority's credit rating and the level of government involvement, government guarantees or co-contracting may be sought by the private sector parties (e.g. if the relevant Contracting Authority is not a sovereign entity). The involvement of export credit agencies and multilateral and development finance institutions can also give investors greater confidence in bidding for and contracting a PPP in certain jurisdictions and act as a form of risk mitigant. This is due not only to their ability to offer more favourable financing terms or products such as political risk insurance in respect of commercial loans and equity contributions, but also because of the relationship dynamics at government level. Similarly, the existence of bilateral investment treaties between governments may play a part in the decision of a prospective private sector participant to invest in a particular jurisdiction. These elements are additional factors in the negotiation of a well-balanced PPP contract in such jurisdictions, but are not a substitute for appropriate contractual risk allocation in the PPP contract itself.

In addition, the level of development of a country's local capital markets, construction industry, government and private sector capacity, land rights or local courts will all have an impact on what makes for robust risk allocation in that country.

For these reasons, even within the same sector, the individual characteristics of each project make it inherently difficult to suggest a 'one size fits all' risk matrix. To begin to address market differences, the matrices contain market comparison summaries for Procuring Authorities to use as a starting point, but always recognising that there will be additional project-specific risks and issues to consider.

Accounting Treatment Distinctions

A factor that has affected government's interest in using PPP approaches to deliver infrastructure has been the availability of advantageous accounting treatments, in particular the perceived ability to treat such investments as 'off balance sheet'. However, this has attracted increasing scrutiny from accounting bodies around the globe due to concerns that governments may use PPPs to bypass spending controls (by taking public investment out of the budget and representing debt off the balance sheet), although they are still bearing substantial risk and incurring significant contingent liabilities.

This has resulted in bodies such as Eurostat, the International Monetary Fund and national accounting boards (e.g. in Australia) embarking on measures focusing on the overall risk/reward balance under PPP contracts for the purposes of determining whether they should be classified as on or off government balance sheets. For example, Eurostat in the EU currently requires EU governments to follow certain accounting rules for the debt and deficit treatment of PPP Projects (European System of National and Regional Accounts 2010 or ESA 2010). These focus on how construction risk, availability risk and demand risk are allocated between the Contracting Authority and the Private Partner to determine the accounting treatment that must be applied. Under these rules (which themselves have given rise to some debate), for a PPP to be recorded off government balance sheet, the majority of the risks and rewards under the PPP contract have to be borne by the Private Partner. A 'user pays' PPP contract will be off the government's balance sheet if government control over the Private Partner is deemed minimal and the risk and reward distribution is not distorted by other provisions, such as clauses on government financing, the existence of government guarantees, termination and the allocation of project assets at the end of the contract. "Government pay" PPPs may not be off balance sheet depending on the specific risk allocation between the parties.

This assessment of the overall risk/reward balance can play a role in deciding on an appropriate allocation of risks between the parties to a PPP contract where a government is looking for a specific accounting treatment. However, it is generally not considered good practice for accounting treatment to be a factor that should drive approaches to risk allocation in PPP contracts.

Additional guidance in respect of the management of the fiscal costs and risks associated with PPP projects is provided in the World Bank's *Public-Private Partnerships Fiscal Risk Assessment Model (PFRAM)* and Eurostat and EIB/EPEC's *Guide to the Statistical Treatment of PPPs*[10].

Legal System Distinctions

As noted above, the underlying legal system in each country may have an impact on risk allocation arrangements, and it will very likely have an impact on how contractual provisions are drafted. Two of the major legal systems globally are the civil law and common law systems. In addition, a number of PPP transactions are now being undertaken in countries with Islamic legal systems.

In civil law countries, PPP contracts are generally governed by administrative law which, besides giving jurisdiction to specific administrative courts, includes a number of fundamental principles which protect the public interest and which the parties cannot always alter by contract. These principles may include, for instance, the right of the Contracting Authority to unilaterally cancel or amend the contract in the public interest (with the Private Partner being entitled to compensation), or the right of the Private Partner to obtain compensation if there is an unexpected and exceptional increase in the costs of performing the contract due to unforeseen economic circumstances. Such codified provisions and underlying principles may be implied into civil law contracts without being expressly drafted into the PPP contract. As a result, less importance is generally placed on the PPP contract expressly setting out all the terms governing the parties' relationship and allocation of risks, partly because gaps or ambiguities can be remedied or resolved by operation of law. A civil law contract is, consequently, often less detailed than an equivalent common law contract.

Some civil law jurisdictions enjoy extensive freedom to contract, whereas in others it may not be possible to derogate from certain principles or to completely waive certain rights, so the parties will need to take this into account in their risk allocation negotiations. Generally, there is an increasing preference in civil law jurisdictions to expressly set out the legal position in PPP contracts so that they are clear on their face and are not relying on implied terms from underlying law. This is partly because this approach will be more familiar to parties from common law jurisdictions, but also because relying on underlying law may create more interpretation risk and it is in the interest of all parties to minimise the risk of ambiguity, particularly investors in a project financed structure, who require detailed security arrangements in exchange for providing their financial support.

In countries with a common law system, parties typically enjoy extensive freedom of contract and few provisions are implied into a contract by law. Judicial decisions set precedents which will be followed in the determination of contractual disputes and therefore influence contractual drafting. A consequence of this freedom is that the terms of any contractual arrangements should be expressly set out in the relevant contract. In a PPP context, all arrangements governing the relationship and allocation of risks between the parties therefore need to be expressly set out in the PPP contract itself.

In some countries with increasingly active PPP programmes, Islamic law (*shariah*) provides the substance of the legal system. These jurisdictions can be organised as common law or (more often) civil law systems. In these countries, no legal instrument—whether legislation, regulation, court ruling or private or public contract—may contravene Islamic principles. This means contracts that provide for forbidden interest (*riba*) or undue uncertainty/speculation (*gharar*) will not be enforceable in these countries. As a result, contractual structures—such as cost-plus financing (*murabaha*) or procurement-leasing (*istisna-ijara*)—have been adopted that, while compliant with the shariah, achieve the same commercial outcomes as their conventional counterparts.

An overarching consideration in relation to freedom to negotiate under all legal systems is whether the applicable procurement processes and rules limit the ability of the parties to negotiate and amend the terms of a PPP contract issued as part of a tender process, and whether any changes might give rise to procurement challenges or allegations of corruption. The Contracting Authority should take this into account when formulating the terms of the PPP contract, to ensure it retains the flexibility it is likely to require over such a long term and avoid tendering contractual arrangements which do not meet the test of bankability and which are not robust over the lifespan of the project.

10 https://library.pppknowledgelab.org/documents/2893?ref_site=kl&keys=PFRAM&restrict_pages=1&site_source%5B%5D=Knowledge%20Lab and https://ec.europa.eu/eurostat/web/government-finance-statistics/methodology/guidance-on-accounting-rules

APPENDIX A:

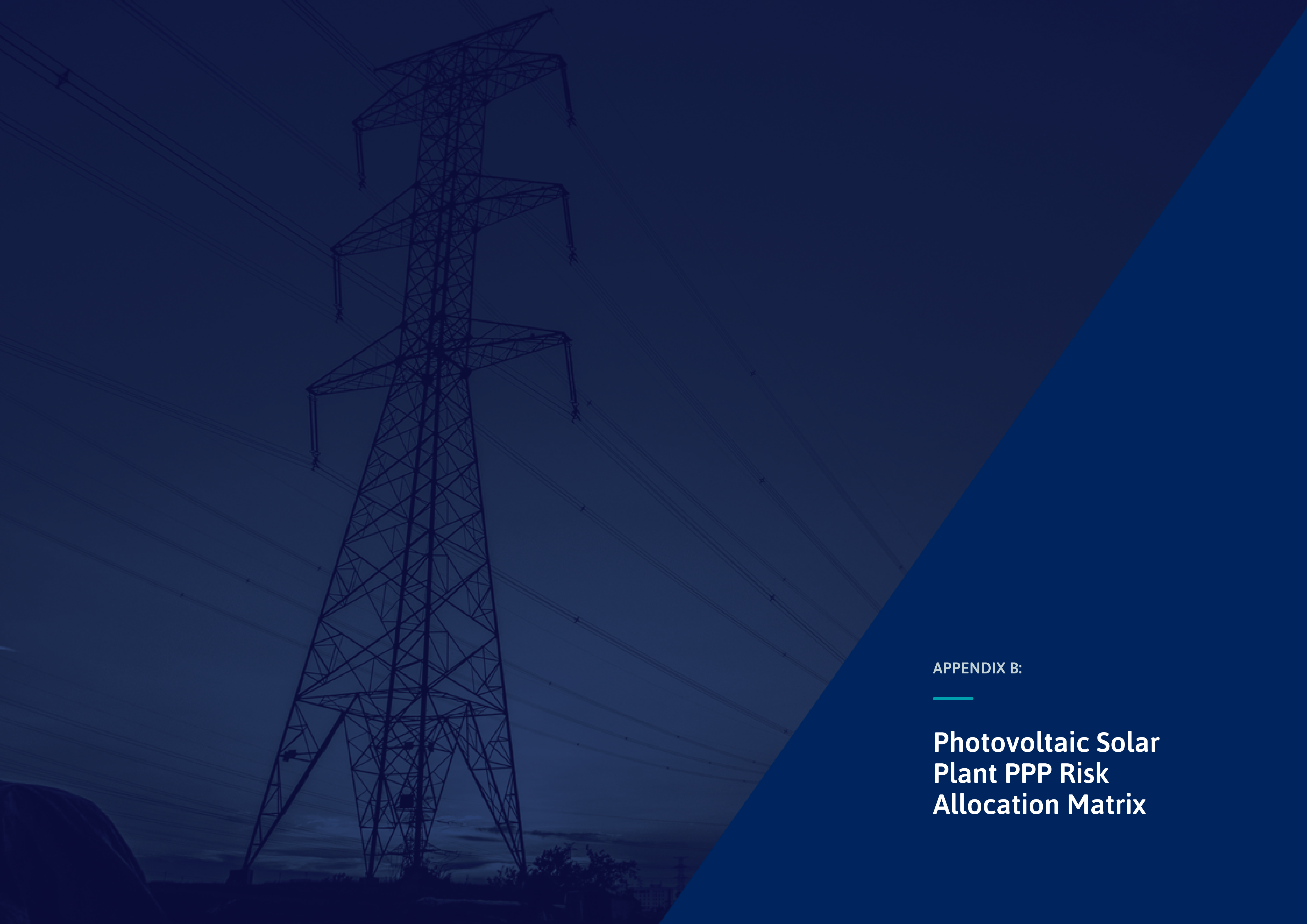
Glossary

Term	Definition
Availability-based projects	Projects which entitle a Private Partner to receive regular payments from a public sector client to the extent that the project asset is available for use in accordance with contractually agreed service levels.
Agreed damages	A specified monetary amount paid for a specific contractual breach that aims to compensate the injured party for the loss it suffers for such breach. Such amounts are agreed up front and in many common law jurisdictions must be a genuine pre-estimate of loss to withstand challenges that such regimes are unenforceable. Depending on the underlying legal system and jurisdiction, such agreed damages may be referred to as liquidated damages or, frequently in civil law jurisdictions, penalties.
Cap and collar arrangement	An agreement not to go above (cap) or below (collar) certain amounts in relation to a particular requirement (e.g. subsidy levels in the case of a cap and collar subsidy arrangement). There are also variations of cap and collar arrangements, for example, if toll revenue for a road exceeds a given cap, the excess revenue will be shared between the parties.
Compensation events	Compensation events are typically events which (i) result in a delay to specified dates in the construction period (such as the operation commencement date) or adversely affect performance of the service in the operating period and/or result in cost increases beyond those in the financial model and (ii) which are at the Contracting Authority's risk as it is better placed than the Private Partner to bear and/or manage the risk. The compensation event regime enables the Private Partner to be given contractual relief through a corresponding extension of time (to the construction period or to the operating period) and/or through cost compensation, without having to resort to termination rights or other remedies. Cost compensation may be in the form of (subject to the applicable payment mechanism): an increase in the availability payment; a permitted increase in the user payments (subject to law and social and political ramifications); a reduction in fees paid by the Private Partner; or a lump sum payment by the Contracting Authority). The principle is to compensate the Private Partner so that it is put back into the position it would have been in had the compensation event not occurred. As this principle applies to a number of contractual risks for which the Contracting Authority is responsible (including certain changes in law and Contracting Authority failures), PPP contracts in mature markets often address the consequences of such events under the same compensation event provisions to ensure consistency. Other contracts may treat the consequences of some of these events separately, or as is the case in some emerging markets, under a provision addressing a broader range of material adverse government action (which, unlike the typical compensation event regime, may also lead to a Private Partner termination right). Contracts in some jurisdictions (e.g. civil law jurisdictions) may achieve a similar result by relying on underlying law. Categorisation will vary according to the particular project circumstances and jurisdiction and the experience and stability of the market.
Compulsory acquisition	The process whereby the Contracting Authority does not give the local land owners a choice to sell their land, but rather uses its legislative powers to compel them to sell for a predetermined price. Also known as eminent domain or more broadly as expropriation (though expropriation by definition may not involve compensation).
Construction phase	The period from when the Private Partner takes control of the project site (typically by reference to the date of signing or effective date (if conditional) of the contract or the commencement of construction by reference to certain works) until the operation commencement date.
Contracting Authority	The government or other public sector entity (either acting in its own capacity or acting on behalf of the state) which contracts with the Private Partner under the PPP contract.
Developed market (mature/more developed/politically stable)	A jurisdiction or sector that has experienced successful financial close and operation of PPP projects, typically with a stable economy and fair and predictable legislative system. A jurisdiction which is politically and legally stable may not be a developed market in PPP terms, and/or may only be a developed market in certain sectors or contexts, but an emerging market in others.

Emerging market (less mature/developed/ politically stable)	A jurisdiction or sector in which few PPP projects have been commenced, sometimes with a legal structure that can lead to a degree of unpredictability. A jurisdiction which is less politically and legally stable may not be an emerging market in PPP terms, and a jurisdiction may only be an emerging market in certain sectors or contexts, but a developed market in others.
Equator Principles	A risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. These can be found at: http://www.equator-principles.com/
Equity	Monies used to finance a deal that are sourced from sponsors/shareholders (for example, raised through the issuing of shares in the Private Partner or its holding company), rather than though external debt (for example, from lenders).
Equity return	The amount of a company's net income return, typically as a percentage of the shareholders' equity.
Expropriation	Where the government takes privately owned property and declares it for public use. (See also Compulsory acquisition).
Finance documents	The key finance documentation for a project, which typically includes a loan facility agreement between the Private Partner and one or more lenders, an intercreditor agreement between the lenders, equity investors and Private Partner, direct agreement(s) with key subcontractors and security documents to secure the financing (e.g. by taking security over the asset in question or the rights in relation to the project as a whole, subject to local law and practice).
Force majeure	An event (or combination of events) typically outside the control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law – jurisdictions, the definition may require the event to be unforeseeable or not reasonably avoidable. In PPP contracts, market practice is usually to define what qualifies as a force majeure event and its consequences, and the approach will depend on the relevant jurisdiction. In common law jurisdictions, the parties are typically free to agree whatever definition they choose. This is also the case in some civil law jurisdictions, although it may not be possible to derogate from the underlying law in others.
Government support	Where the government in the jurisdiction in which the project is based actively uses its powers to support the project and enable it to be financially viable/acceptable to lenders (e.g. by providing guarantees of the Contracting Authority's (payment) obligations or minimum revenue support if the Private Partner is bearing demand risk and/or implementing other fiscal measures designed to stabilise any jurisdictional uncertainties that make the project not bankable (e.g. foreign currency protections and tax breaks).
Grace period	The period after an obligation is due for performance during which such obligation may still be performed without declaring an event of default and/or termination.
Hardship doctrines	Hardship doctrines are typically civil law principles which provide the Private Partner with relief where unexpected circumstances make performance more onerous without being impossible. For example, administrative courts in France will enforce the doctrine of imprévision which allows a party to claim compensation through an increase in contract price where the contract circumstances have changed due to events which were unforeseeable, beyond the parties' control and have a fundamental impact on the economic balance of the contract. The circumstances are expected to be temporary and the contract may provide that imprévision can be invoked in accordance with case law or set out the financial threshold deemed to trigger the right to claim compensation (the Contracting Authority may also terminate the contract if the price increase is too significant or the situation is likely to last indefinitely).

Hedging	Hedging instruments are used to limit exposure to a price or unit of value that fluctuates. These typically cover interest rate, foreign currency exchange rates or commodity prices and/or inflation.
Hedge break costs	The costs associated with terminating any hedging arrangements prior to their natural expiry payable by one party to the other party (these may be either positive or negative for the Private Partner).
Key performance indicators (KPIs)	These measure performance of the project and are typically referenced to the output and performance specifications which the Private Partner is incentivised to perform. If the Private Partner falls short of the key performance indicators then, typically, payment mechanisms will apply, such as deductions made from the Private Partner's contractual payment entitlement or a penalty payable by the Private Partner. In the case of persistent or material circumstances a right of termination for the Contracting Authority may also arise.
Lenders/finance parties	The parties – typically international banks but also local banks and development finance institutions/multi-lateral agencies – which provide financing to the Private Partner for a project, taking an interest by way of security – often in the asset in question or the project as a whole (including by taking security over the shares in the Private Partner), subject to local law and practice.
Longstop date	A date which is tied to a prescribed time period after a scheduled date by which certain obligations must have been fulfilled. If the obligation is not performed by the longstop date, a right of termination will typically arise.
Operation commencement date	The date on which the operation of the project commences. This is, typically, once the construction phase of the project is successfully completed (usually determined by some form of independent certification and/or testing regime) and relevant commissioning has taken place successfully; the scheduled operation commencement date represents a target date, with failures to achieve that date having commercial consequences depending on the cause (see Works completions delays under Construction risk in the risk matrices).
Output specification	The Contracting Authority typically sets out a broad output driven technical specification in the tender documents and the contract, which requires the Private Partner to design and build the project in a way which satisfies the key performance indicators and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards.
Performance specification	This sets out the levels (including quality) of performance at which the project must be operated throughout the life of the contract in fulfilling the output specification and typically includes key performance indicators.
PPP contract	The agreement between the Contracting Authority and the Private Partner outlining the scope and terms on which the project will be undertaken.
Private Partner	The entity from the private or commercial sector that contracts with the Contracting Authority to undertake the project. In a project finance context, the Private Partner will typically be established as a special purpose vehicle that is incorporated specifically and only for the purposes of undertaking the project and owned by the sponsors.
Public-private partnership	A long-term contract between a Contracting Authority, and a Private Partner for the development and/or management of a public asset or service, where the Private Partner 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 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.

Relief Events	Relief events are typically events which adversely affect performance by the Private Partner of its obligations at any time (by causing delays or increased costs beyond those anticipated in the financial model), in respect of which it bears the financial risk in terms of increased costs and reduced revenue but for which it is given relief from termination for the relevant failure. This can include events outside the Private Partner's control, if it is in a better position than the Contracting Authority to mitigate and manage their consequences (e.g. through insurance and/or risk management). Relief events in mature markets typically include failures by utility providers, industrial action, power or fuel shortages, accidental loss or damage to the project and events such as fire, storms and floods, to the extent these are not categorised as other types of event, such as force majeure or compensation events. Contracts in some (e.g. civil) jurisdictions may achieve a similar result by relying on, or reflecting, underlying law. Categorisation will vary according to the particular project circumstances and jurisdiction and the experience and stability of the market (and, for example, risks which are relief events in mature markets may be treated as force majeure risk in less developed markets).
Senior debt	This is borrowing (typically from lenders) by the Private Partner to finance the project, repayment of which generally takes priority over any 'junior' debt or equity (and particularly in certain circumstances, such as the insolvency of the Private Partner).
Set-off	If one of the contracting parties owes monies to another contracting party, a right of set-off allows it to take account of amounts owed to it by the other party in calculating the amount it must pay.
Sponsor	This is an entity which is typically an initial developer of the project and an ultimate shareholder in the Private Partner. Sponsors typically include a member of each of the major project parties' corporate groups, such as the construction sub-contractor and operating sub-contractor and may also include pure financial investors or funds. Sponsors will limit their liability through the Private Partner but may need to give limited support or guarantees in respect of the Private Partner or the relevant sub-contractor.
Stabilisation	Contractual clauses that entrench certain legal provisions (such as the current tax regime) against any future changes in law, enabling foreign investors to protect themselves from such changes and a certain degree of political risk.
Tariff	The price set for the project output as between the Contracting Authority and the Private Partner, or as payable by third party users (for example, electricity in the context of a project in the energy sector), often fixed by reference to either a predetermined rate or agreed formula.



APPENDIX B:

Photovoltaic Solar Plant PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: PHOTOVOLTAIC SOLAR PLANT

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a photovoltaic solar PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in photovoltaic solar PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in photovoltaic solar projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** See *Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	Photovoltaic (**PV**) solar plant projects directly convert sunlight into electricity (e.g. using panels made of semi-conductor cells) and can be structured in different ways. In developed markets PV plant projects are predominantly small scale (up to 100 megawatts (**MW**)) build, own and operate schemes whereby the Private Partner retains ownership of the PV plant at the end of the project. In emerging markets large scale PV plant projects (up to 1000 MW) are increasingly procured by Contracting Authorities under build, own operate and transfer schemes whereby the PV plant is transferred back to the Contracting Authority at the end of the project. This matrix addresses the common risks for the build, own, finance, operation and transfer to the Contracting Authority (at the end of the PPP contract) of a new PV solar plant project. In developed markets, there is an enhanced single buyer scheme whereby power generated from a project will be sold to a state enterprise offtaker. In emerging markets, the project scope may include building associated infrastructure, such as electricity transmission infrastructure which is then handed over to the state owned offtaker.
ASSUMPTIONS	The Private Partner finances the development of the new large scale solar PV project and only starts to receive payment from the Contracting Authority (and/or where applicable, users) once the solar PV project is in operation. In developed markets, the private sector identifies the site on which the project will be built. In emerging markets, whilst there are still projects where the Private Partner is responsible for site selection, it is becoming increasingly common for Contracting Authorities that are looking to develop large scale PV plants to be responsible for site selection and the electricity produced from the project is sold to the Contracting Authority (generally a state owned electricity offtaker (such as a system operator) and the project will connect to the existing transmission lines and electricity distribution system which the Contracting Authority owns (or will own to the extent the Private Partner has built transmission infrastructure that is to be transferred to the Contracting Authority once completed).
MARKET APPROACHES	As described above in *Type of Project and Scope Considerations*, the structure and scope of solar PV projects will depend on the relevant market. PV solar technology is commonly in projects but other types of solar project are also seen, such as solar thermal technology (which captures the sun's heat and uses it or converts it into mechanical energy and then electricity, known as concentrated solar power). Rooftop solar installations are becoming more prevalent as a source of captive energy. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES AND PAYMENT MECHANISMS	Project revenues are generated through energy charges which are levied at a unit price of electricity per Kwh generated. The energy charge is similar to an availability payment, but if the PV plant does not generate electricity then the government offtaker will only pay for the electricity actually generated by the PV plant (and certain circumstances will entitle the Private Party to a deemed level of generation). In Feed in Tariff (FIT) renewable energy incentive schemes, the unit price of electricity per Kwh is set by the government offtaker rather than competitively bid as part of the procurement process.
KEY RISKS	**Operational resource or input risk:** The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities and maintenance equipment and materials) and must manage the availability and costs of those resources. It will need to consider this when structuring its supply arrangements. One of the main operational risks in solar PV projects is the cost of cleaning the solar panels as most projects are situated in arid desert, making the cost of water an important factor in pricing for the operational period. Generally the Private Partner will seek to limit its exposure to significant increases in the cost of water during the life time of the project. The Private Partner will also need to factor in the irradiance levels available at the site and its suitability for long term electricity generation as the Private Partner will be expected to assume all responsibility for this risk irrespective of whether or not the Private Partner is responsible for site selection. *See Operational resources or input risk under Operating Risk*. **Performance/price risk:** The Private Partner is responsible for the performance of the PV plant and complying with all guaranteed performance ratios. *See Performance/price risk under Operating Risk*.

OTHER CONSIDERATIONS	The main considerations in solar PV projects are highlighted above. *See Key risks.*
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** See *Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** See *Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** See *Environmental risk and Social risk*. **Additional equity and other funding support:** See *Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** See *PPP Project Preparation and Delivery in the Introduction*. In addition, studies for solar PV projects should include identification and suitability of site, additional land needs, interface with existing and future solar PV projects, interface with the electricity distribution and transmission network and social and environmental impact of both the construction and operation of the solar PV project. Detailed ground surveys should also be carried out where practicable. Where Contracting Authorities determine the location of the site if such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information. Typically solar PV projects are not complex construction projects and consist mostly of civil works so the more information provided in respect of ground risk should result in reduced construction costs. It should also not be problematic for Contracting Authorities to instruct detailed ground surveys prior to project procurement given that most solar PV projects are located in fairly remote and not heavily populated greenfield areas.
	Running an efficient and fair procurement process: See *PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project, although it should be noted that solar PV projects are generally well regarded by local communities as environmentally friendly 'green' projects which have minimal impact on surrounding areas. See *Environmental risk and Social risk.*
	Having competent advisers: See *Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: See *Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: See *Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	Where the Contracting Authority's and/or the offtaker's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*. In emerging markets a government guarantee in respect of Contracting Authority or offtaker payment obligations may be required although there is a an increasing reluctance amongst governments to provide these and in some markets such as the Middle East and Africa some government guarantees have been limited in scope to only guaranteeing the obligations of a Contracting Authority to make termination compensation payments.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		●
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.			●
DEMAND RISK	Demand risk is not generally applicable to solar PV projects where the power purchase agreement often works on a "must take" basis as the electricity produced cannot be stored and the Contracting Authority takes the risk that the system does not require the electricity at the times that the solar PV project is generating.	●		
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		Site selection will depend on the specifics of the project. However, it is becoming increasingly common for the site of the solar PV project to be determined by the Contracting Authority in order to maximise the energy yield, lower connection costs and reduce the risk of negative impact on the electricity network. *See also Market Comparison Summary*. Irrespective of which party is responsible for site selection, the Contracting Authority typically bears the risk of acquiring the required land interests for the project, whether through compulsory acquisition/expropriation or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. During the feasibility stage (see *PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the solar PV project. Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as irradiance levels available, rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In developed markets, the private typically sector identifies the site on which the project will be built. In emerging markets, whilst there are still projects where the Private Partner is responsible for site selection, it is becoming increasingly common for Contracting Authorities that are looking to develop large scale PV plants to be responsible for site selection, and the project will connect to the existing transmission lines and electricity distribution system. In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land. In developed markets, even where the Private Partner may bear the land risk, the Contracting Authority will be responsible for securing the rights of way required for construction of new transmission lines by the project, but at the Private Partner's cost.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	In most solar PV projects land will be acquired pre-signature as there will not be complex land acquisition processes to undertake (i.e. most projects are single site in designated solar parks that are remote greenfield areas in desert locations). This is also consistent with roof top solar PV

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						projects whereby sites will have been secured prior entry into the PPP Contract.
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are being considered. *See also Social risk*.	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●	●	**General:** The risk that the land is not suitable may be shared as the Contracting Authority may be able to secure the availability of the site, but the suitability of the site may be dependent on the Private Partner's irradiance level forecasts and design and construction plan. As regards irradiance levels available at the site and its suitability for long term electricity generation, the Private Partner will be expected to assume all responsibility for this risk irrespective of whether or not the Private Partner is responsible for site selection. *See also Design risk and Operating risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents		●		**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement although this is not always the case in solar PV projects where a number of key consents will be obtained by the Private Partner.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
			●		**Post-signature:** If consents for key permits are not obtained before contract signature, in solar PV projects it is typically the responsibility of the Private Partner to obtain the key consents after signature, subject to a compensation event occurring if the relevant government entity does not issue the key consents in a timely manner and through no fault of the Private Partner.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction. Failure to provide access may be treated as a compensation event. *See also MAGA risk.*	Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.
		●			**Operation phase:** The Contracting Authority should bear the risk of ensuring that the operator can access the PV plant and that electricity is distributed via the transmission and distribution network. Non provision of this access may be treated as a compensation or MAGA event. *See also MAGA risk.*	
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the solar PV project. In solar PV projects the Private Partner will be responsible for day to day site security.	For example, where there is public opposition to the solar PV project, there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see Project management and interface with other works/facilities under Construction risk.*	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area. Generally solar PV projects are not constructed in high density urban areas so this would not typically be considered a significant project risk.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project, they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●	●		Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the solar PV project. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach and what	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles,

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site. The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks. This is not typically seen as a significant risk in solar PV projects given typical site location in less populated and often arid desert areas.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are being considered. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk***.**	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some countries and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. See also *MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk.*	
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are being considered. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from adjacent land forces the solar PV project closure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event. *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these type of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications (including the required performance ratio for the PV plant) and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the project and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority. Developed market solar PV projects benefit from the low risk nature of the technology. This allows Private Partners to submit competitive proposals with short design and construction timeframes.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					irradiance level forecasts or site condition surveys). *See also Changes to design under Design risk.* In solar PV projects the Contracting Authority may also include specific design requirements such as technology type and country of manufacture of solar PV panels and inverters which provide grid stability support.	Some Contracting Authorities may require Private Partners to localise part of the supply chain for the solar PV project (e.g. as has been the case in South Africa) which may impact design. In certain developing markets, in order to mitigate the risk associated with bid requirements to source solar PV panels locally, certain construction sub-contractors and/or Private Partners have opened up solar PV factories in the specific local market. A recent trend has been to require Private Partners to install equipment which mitigates the impact of the project on the electricity network, for example cloud monitoring equipment and inverters which provide some level of grid support service such as frequency response.
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive , the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk)*. If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency and obtaining appropriate security to the risk of non-performance (for example, parent company guarantees and performance bonds). The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see *Taking performance security under Public Sector Risk Mitigation*. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. In developed markets, associated risks that can increase construction costs should be considered, such as anti-dumping levies on solar panels (as applied in Europe recently). These risks are generally seen as low based on the strong global track record for solar PV projects in recent years. In emerging markets, risks such as delays in refunds of goods and services tax, import duties and restrictions and restrictions on using foreign workers should be considered.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA risk, Variations risk and Change in law risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	The completion risk for solar PV projects in emerging markets is generally viewed as lower than other energy and infrastructure projects. This is due to the modular nature of the technology and the comparatively simple nature of the construction. This encourages Contracting Authorities to seek short construction timetables and pass risks to the Private Partner which may not be possible with other types of project, such as responsibility for obtaining key planning consents.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to undertake connection works to the electricity distribution and transmission system and arrange transportation and installation of complex equipment such as the solar panels and inverters. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects or services may also affect contract obligations and risk allocation**.** If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of an electricity sub-station to connect the PV plant to the electricity transmission and distribution network. *See also Suitability of design under Design risk, Maintenance standards under Operating risk and MAGA risk.*	In emerging markets, the transportation of solar PV panels is best mitigated by the Private Partner ensuring that it has adequate insurance in place, where applicable (as well as by passing the risk on to the construction sub-contractor). In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party. The Contracting Authority should facilitate such agreements where it has an existing relationship with the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). In solar PV projects the risk of defects (latent or otherwise) in key equipment is mitigated by the availability of long term manufacturers warranties for key equipment such inverters which can be warranted for up to 25 years.	Defects liability periods vary between legal systems and jurisdictions, and may be set contractually or in some cases by law. Market practice also varies between sectors. It is unusual to see the Private Partner accepting latent defect liability over and above that imposed by applicable law. For example, in the United Arab Emirates, latent defect liability is referred to as decennial liability which typically exists as a matter of law for 10 years from the date of completion of the works.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the solar PV project and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism is not generally perceived to be a significant risk on solar PV projects as these projects are generally regarded as environmentally friendly and often situated in remote, less populated areas.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		● 	 [●]	 ●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Cost overruns and Works completion delays under Construction Risk, Increased operating costs and affected performance under Operating risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk.* One of the main operational risks in solar PV projects is the cost of cleaning the solar panels as most projects are situated in arid desert, making the cost of water an important factor in pricing for the operational period. Generally the Private Partner will seek to limit its exposure to significant increases in the cost of water during the lifetime of the project.	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level and is delivering the maximum energy permitted under the power purchase agreement). Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation. The Private Partner will be paid based on the actual amount of electricity sold under the power purchase agreement. If the facility runs at a lower capacity than initially intended, it will effectively result in less payment received by the Private Partner, except where the PV plant is deemed to be generating electricity (see below). The impact of large scale intermittent renewables on the stability of the grid system is key risk associated with solar PV projects, and Contracting Authorities typically seek protection against poor performance through performance-based standards and/or availability criteria. The Private Partner's revenue from the Contracting Authority may also be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria will be linked to the performance ratio of the PV plants. Some Contracting Authorities require the Private Partner to guarantee a minimum level of output. Where electricity cannot be generated or certain availability criteria or performance indicators cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, the Contracting Authority will usually take the risk of grid failures or stability affecting the output of the solar PV plant. The Contracting Authority may take certain additional limited performance risks such as the impact of shading on the energy production from a solar PV project from new developments adjacent to the site or restrictions on tree felling/pruning. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government	The Contracting Authority should set standards which are achievable for PV plants in the relevant market, taking into account, for example, historical solar irradiation levels and weather patterns, which can vary significantly. In developed markets, the Private Partner usually performs the energy yield assessment for the site and assumes the risk that the energy yield forecasts are incorrect. In projects where the Private Partner has selected the site Contracting Authorities may seek independent verification of energy yield assumptions during the procurement phase. This is relevant in many markets where the Contracting Authority is expecting a certain level of output from the solar PV project in order to meet the customer load requirements. In developing markets, the Contracting Authority may undertake the initial energy yield assessment for the chosen site. However, the Private Partner will usually be required to review this assessment and accept the risk that the energy yield forecasts are incorrect. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the solar PV project has stabilized. This can mitigate the risk of long-term performance failure.

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					body), value for money, the nature of the project and the relevant markets.	
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities (including water) and maintenance equipment and materials) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. One of the main operational risks in solar PV projects is the cost of cleaning the solar panels as most projects are situated in arid desert, making the cost of water an important factor in pricing for the operational period. Generally the Private Partner will seek to limit its exposure to significant increases in the cost of water during the lifetime of the project. There are limited other inputs for a solar PV project (the feedstock is solar irradiation) so this resourcing risk is generally seen as limited to the accuracy of solar irradiation forecasts and the risk that the shading conditions change over time. In some countries there are concerns over the impact of climate change on the climatic conditions and in particular increased or different cloud patterns. Overly optimistic energy yield forecasts are a key risk factor in solar PV projects.	In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.* Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the solar PV project and for intellectual property infringement. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.

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					Construction risk.	
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk).* This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. In some circumstances the Contracting Authority may assume responsibility for facilities which are shared between multiple solar PV projects, such as water treatment plants. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk. Maintenance is generally regarded as a low risk for solar PV projects in developed markets. In many markets there is now a deep pool of trained operators and the operations and maintenance activities are not complex or expensive. In developing markets, large scale solar projects have only been installed and entered into operation in recent years. Although the track record is limited, maintenance is generally regarded as a low to medium risk for solar PV projects.
		[●] ●		●	**Existing assets in the project:** As regards existing assets in the project, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** The Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of an existing (or other) photovoltaic solar network that integrates with the project as this will be key to providing access to the new photovoltaic project. *See also Access to the site and associated infrastructure under Land availability, access and site risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism is not generally seen as a significant risk in solar PV projects. Where is a significant risk, it may be shared, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. For example, the Private Partner may elect to use materials which can be more easily cleaned of graffiti, or have security guards in place at the site. *See also Site security under Land availability, access and site risk and Social risk.*	
DEMAND RISK	**General principles**	●			Demand risk is not generally applicable to solar PV projects where the power purchase agreement often works on a "must take" basis as the electricity produced cannot be stored and the Contracting Authority takes the risk that the system does not require the electricity at the times that the solar PV project is generating. If the project is constrained by the system operator the Contracting Authority may be required to make compensation payments to the Private Partner. In certain developed markets the Private Partner may be required to sell the output into a power pool. In such cases the power purchase agreement with the Contracting Authority will operate as contract for difference where the Contracting Authority pays the Private Partner the difference between market prices for the electricity and the fixed price agreed between the Contracting Authority and the Private Partner during the procurement process. If market prices are higher than the fixed price the Private Partner will owe the difference to the Contracting Authority. In many developed markets there may be green benefits associated with the production of renewable energy. These benefits are usually transferred to the Contracting Authority and the price is included within the fixed price per MWh agreed at the outset so there is no additional cost to the Contracting Authority. In some cases the green benefits may be sold to the market and the benefits shared between the parties. In developed markets, it is common for renewable generators to have priority access to the electricity system on the basis that renewable generation is being encouraged and the resource (wind and sun) is intermittent.	In most emerging markets the electricity sector has not been liberalised and the utility (the usual contracting entity) is vertically integrated. Demand risk for independent power producers is borne by the Contracting Authority and it will assume the risk that there is no demand for the electricity produced. The Contracting Authority will mitigate the demand risk assumed under the power purchase agreement through system planning before and during the procurement process and operations. To the extent that supply exceeds demand in any period this is usually mitigated by reducing the output of flexible generation such as hydropower or thermal generators. As the storage technology improves and reduces in cost this will enable the Contracting Authority to mitigate the demand risk by storing power and then using it to meet system peak demand. A recent trend in some developing markets is that the Contracting Authority may seek to retain any entitlement to carbon credits or other green benefits arising from the project.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. The inflation adjustment to the energy charge is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index. In developed markets where there is a Feed-in-Tariff, the power purchase agreement does not provide flexibility to the Private Partners to increase the Feed-in Tariff on account of inflation.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the Contracting Authority. The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift as an adjustment to the energy charge. There is always a time lag in how quickly the indexation price increase is available to the Private Partner.	
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
			[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid by the Contracting Authority in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as the USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. In addition, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). In emerging markets it is common to see the energy charge having a local currency component and a foreign currency component (generally USD). *See also Strength of Contracting Authority payment covenant under Early Termination risk.*
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					uninsurable.	
	Refinancing		●	●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments; (c) a reduced energy charge; or (d) by a combination of the above. For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation. As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
the project; Contracting Authority intervention in the project; ownership changes; and disputes.					have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors. In developed markets the Contracting Authority is less concerned with locking in the shareholders for a certain period of time. This is due to the relatively low level of perceived risk for solar PV projects. This is however still a common feature in emerging markets.
	Permitted Contracting Authority step-in	●		●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging*				●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	●		termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations). In developed markets utilising a Feed-in Tariff, the power purchase agreement does not contemplate a change of the Feed-in-Tariff if new technology has emerged which reduces the costs of power generation, and the change of technology is not permitted under the power purchase agreement. Neither the Private Partner nor the Contracting Authority will be entitled to require a change in the Feed-in-Tariff. The risk of disruption is also increasing due to higher efficiency modules, new inverter technology and a general trend towards "smarter" renewable energy generation. In emerging markets, the Private Partner takes the risk of disruptive technology. Where the solar PV market “is more developed”, increasingly certain Contracting Authorities are capping the tariff that the Private Partner is entitled to bid, on the basis that the Contracting Authority is aware of new and more competitive technology which can drive the cost down. This places additional constraints on the Private Partner and its potential return from the project.
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be “natural force majeure” events (such as natural disasters and severe weather events, and possibly climate change events) and certain “political force majeure” events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining the extent to which an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary*

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, the energy charge could be increased. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the solar PV project is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	*definition)* existing under the underlying law of the project jurisdiction.
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation in relation to the PPP project; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					under Early Termination risk.	force majeure if outside it. Political risk has increased in recent years due to the adverse changes in law in markets such as Spain, Bulgaria and Czech Republic. Private Partners may seek assurances that they are protected against political risks through general laws and bilateral investment treaties.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project. *See also Maintenance Standards under Operating risk.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific solar PV project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the solar sector or to investors in solar projects); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism.	jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
payment covenant.					from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty. In emerging markets it is common to see a government guarantee being provided in respect of the Contracting Authority's termination payment obligations.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting	In some jurisdictions (more typically civil law) the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)				Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					set percentage (around 80 – 100% although in some emerging markets this can be as high as 90%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The am of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset, the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. Contracting Authorities may seek strong protections as regards site remediation and transfer provisions due to solar PV projects having a shorter design life than traditional infrastructure projects. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX C:

Hydro Power PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: HYDRO POWER

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a hydro power PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in hydro power PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in hydro power projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the build, own, finance, operation and transfer to the Contracting Authority (at the end of the PPP contract) of a new large-scale (greater than 100MW) hydroelectric power project. The project may feature a large dam and reservoir. The project may require extensive tunnelling works to divert water to the power station. The project scope may include building associated infrastructure. This might include electricity transmission infrastructure which is then handed over to the state owned offtaker. It might also include roads to and around the project site, some of which may be turned over to the relevant authorities.
ASSUMPTIONS	The Private Partner finances the development of the new hydroelectric power project and only starts to receive payment from the Contracting Authority (and/or where applicable, users) once the hydroelectric power project is in operation. Site selection is determined by the Contracting Authority. 100% of the available electricity from the project will be purchased by the Contracting Authority (a state owned electricity offtaker under a long term power purchase agreement). The Contracting Authority is responsible for dispatching the project (either by the state owned offtaker or another state owned entity which will act as the dispatch, transmission and distribution licensee). The project will connect to the existing transmission lines and electricity distribution system which the Contracting Authority owns (or will own to the extent the Private Partner has built transmission infrastructure that is to be transferred to the Contracting Authority once completed). The project will not feature any pumped storage.
MARKET APPROACHES	In addition to the common approach outlined in this matrix for large-scale hydro power projects, other types of hydro power projects include much smaller scale projects often in isolated areas which cannot be reached economically by a national electricity distribution network or where there is no such network. Types of projects also include run-of-river projects where there may be no or limited reservoir storage involved and pumped-storage projects where water is pumped into a higher reservoir at times of low electricity demand and released to a lower reservoir through a turbine when electricity demand is higher. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	Hydro power projects are usually considered as "economic infrastructure" with revenues of the Private Partner (i.e. a hydro power company) coming from the power purchased by the country's power utility provider under a long-term power purchase agreement (usually a partially or fully state owned offtaker). The Private Partner is generally entitled to develop and operate the hydro power project by the Contracting Authority by way of the grant of exclusive rights under concession-type contracts (for example, to divert and/or impound water). These exclusive concession rights may be granted under a power purchase agreement with the state owned offtaker or, depending on the jurisdiction, may need to be granted by another Contracting Authority (such as the ministry of energy) with the power to grant such rights. The Private Partner raises debt usually through multilaterals, development finance institutions and local commercial banks (or commercial banks with links to the sponsors of the Project) and private equity, and receives payments, similar to availability based payments, from the Contracting Authority (usually the power utility provider) structured as a "capacity payment" or an "energy charge", or a combination of both. As for all energy assets, hydro power PPP projects are highly dependent, for their financial structure and bankability, on the relevant energy regulator and other relevant regulations and public policy (for example, any regulation of tariffs, the length of the PPA term or requirements for competitive bidding of projects). *See General Principles under Demand Risk.*
KEY RISKS	**Land acquisition and social risk:** Large areas of land may need to be acquired for a project featuring a dam and reservoir. If local populations historically used lands that will be affected by the project (irrespective of whether they have firm legal title to those lands), lenders may require that this be considered as part of the land acquisition process. Further, if the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through expropriation / compulsory acquisition), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See Land availability, access and site risk, and Community and business and Resettlement under Social risk, Suitability of design under Design risk, Project management*

	and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk. **Environmental risk:** Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental management plans before construction begins. *See Environmental risk*. **Completion/operation commencement risk:** Hydro power projects often involve significant civil works in remote and undeveloped/unsurveyed terrains. Such works may be more difficult to deliver on-time and on-budget than projects involving a straightforward installation of plant and equipment. In particular, it may be difficult for a Private Partner to commit to delivering significant tunnelling works without some form of risk sharing with Contracting Authority. *See Cost overruns and Works completion delays under Construction risk* . **Operational resource or input risk:** Hydrological risk is the main input risk for hydro power projects once they are operational. The sufficiency of the water supply should be assessed by reference to detailed and accurate historical records maintained over a long period of years. The parties should also consider the impact of seasonality on the generation capacity of the project throughout the year (particularly for run-of-river projects), and whether climate change or third party activities upstream from the project might adversely impact the hydrological conditions at the site. *See Climate change event under Environmental risk and Operational resources or input risk under Operating risk*. **Conflict risk:** Many hydro power projects are located in remote locations with less central government control. Such locations may be more prone to local conflicts and this risk should be assessed for each project. *See Site security under Land availability, access and site risk, and Force majeure risk*.
OTHER CONSIDERATIONS	**Local content requirements:** When considering whether a Private Partner should be obliged to source a certain percentage of its workforce and materials locally, the Contracting Authority should consider whether this might prevent the Private Partner from having access to the: (i) necessary technical expertise to deliver all aspects of the project including: design, construction, operation, and management of environmental and social requirement compliance; and (ii) volume of skilled and unskilled personnel that will be needed during construction (considering among others, whether such local personnel are already engaged on other projects in-country).
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into one or more construction contracts with construction sub-contractors to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractors will be entitled under the sub-contracts). In hydro power projects it is not unusual to see a disaggregation of the works into separate construction contracts for civil works, electrical and mechanical works and hydro-mechanical works. There might also be separate construction contracts for any required supporting electricity transmission infrastructure and roads. To support non- or limited- recourse financing these construction contracts will generally be priced on a fixed lump sum basis, although exceptions to this may be necessary where there is any uncertainty on the scope of works (e.g. if there is significant tunnelling works through uncertain rock types). The Private Partner will bear the risk of interfaces in any multi-contract structure, liability caps agreed under the sub-contracts being reached, and warranty periods under the sub-contracts being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** *See Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the Introduction*. In addition, studies for hydro power projects should include identification and suitability of the site (considering all relevant factors including in particular, the geological and hydrological conditions and any land requirements for resettlement and biodiversity offset), additional land needs, interface with existing and future hydro power projects (including in particular if the project will be part of a cascade of projects and with other projects in the same watershed) and social and environmental impact of both the construction and operation of the hydro power project. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be

	called.
PUBLIC SECTOR SUPPORT MEASURES	Where the Contracting Authority's and/or the offtaker's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk.*

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	**Shared**	**Private**
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.		●	
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.		●	
DEMAND RISK	The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	●		
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	Not applicable in hydro power projects where demand risk is with the Contracting Authority.			
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the site and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. During the feasibility stage (*see PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the hydro power project. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. In addition, studies for hydro power projects should include identification and suitability of the site (considering all relevant factors including in particular, the geological and hydrological conditions and any land requirements for resettlement and biodiversity offset), additional land needs, interface with existing and future hydro power projects (including in particular if the project will be part of a cascade of projects and with other projects in the same watershed) and social and environmental impact of both the construction and operation of the hydro power project. Such information should be disclosed to bidders as part of the bidding process. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.* It is common for the site of the hydro power project to be determined by the Contracting Authority in order to maximise the energy yield, lower connection costs and reduce the risk of negative impact on the electricity network.	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/ expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land. In developed markets, even where the Private Partner may bear some land risk, the Contracting Authority will be responsible for securing the rights of way required for construction of new transmission lines by the project, but at the Private Partner's cost. In terms of payment for the land, in less developed markets (where the Contracting Authority may not have funds available to pay for the land), these payments may initially be passed through to the Private Partner as part of the project costs and reimbursed as part of the capacity payments or energy charge from the offtaker.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk. Consideration should be given to how land acquisition will be paid for by the Contracting Authority.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are being considered. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements. Where legislation is insufficient, detailed environmental and social annexes may be appended to and form part of the concession agreement to be adhered to by the Private Partner.
	Resettlement				See *Resettlement under Social risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the site, but the suitability of the site may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	
		●	[●]	[●]	**Underground:** *See Site condition under Land availability, access and site risk.*	
	Key planning consents		●		**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement although this is not always the case in hydro power projects where a number of key consents will be obtained by the Private Partner.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
			●		**Post-signature:** If consents for key permits are not obtained before contract signature in hydro power projects it is typically the responsibility of the Private Partner to obtain the key consents after signature, subject to a compensation event occurring if the relevant government entity does not issue the key consents in a timely manner and through no fault of the Private Partner. *See also Environmental risk and MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●	[●]		**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner has the right to access the site during construction. Failure to comply with any obligations to provide access or access rights may be treated as a compensation event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the construction of new access roads and the impact on access roads of heavy loads. Many hydro power projects will be remotely located. Accordingly, there may not be access routes from existing public roads to the site, or access routes around the site, which itself may be spread over a large area (e.g. as water intakes, dams and reservoirs may not be located near the power station). To the extent that new access routes need to be constructed to allow construction and operation of a hydro power project, this often will form part of the Private Partner's scope of works.	Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.
			●		**Operation phase:** As regards physical access to the site, the Contracting Authority's risk and responsibility will typically be the same as described during the construction phase. If the Private Partner has been asked to construct new access routes which subsequently become public roads, the Contracting Authority may have obligations to maintain those routes. If such access routes are remotely located and continue to be necessary for the operation and maintenance of the hydro power project, the Private Partner might, as part of its operation phase obligations, have a responsibility to maintain such roads. As regards access to the electrical transmission networks, the Contracting Authority should bear the risk of ensuring that electricity is distributed via the transmission and distribution network. Non provision of this access may be treated as a compensation or MAGA event. *See also MAGA risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the hydro power project. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as military/police involvement or eviction) and in some circumstances may be required to continue to provide additional site security / assistance during construction and operations to manage this risk. By way of example, for remotely located projects with limited access options, it may be possible for small protests to significantly impact the progress of construction. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the hydro power project, there may be protestor action, or there may be issues safeguarding the equipment and installation. In some countries, remote hydro power projects may be located in (or close to) conflict zones and detailed consideration will need to be given to decide whether a project can be sufficiently safeguarded in such locations to proceed.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. To the extent that a new hydro power project is in a remote location, it is typical for required utilities to be imported, transported to the site or built by the Private Partner. This would be priced into the project costs and there would be no specific pass through to the Contracting Authority in connection with the same. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.*	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.
	Site condition		●		**Surveyed:** The Contracting Authority usually undertakes detailed hydrological, climate, geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). In the case of hydrological and climate data, long term historical data will be required for bidders to properly model the project's potential capacity. To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data. As mentioned above, the reliability of the water supply will be assessed by reference to historical records which should have been maintained over a long period of years by the host country. If detailed and accurate records exist a Private Partner may accept some hydrology risk. However, in many cases, data of this nature has not been collected or maintained for a sufficient period of time. *See also Operational resources or input risk under Operating risk*. Where this is the case the Contracting Authority should consider installing appropriate metering stations at the outset of conducting its feasibility studies. Given the long development period that is characteristic for hydro power projects, this could provide the parties with useful data before key project agreements (such as a long term power purchase agreement) are signed. The parties should also assess the possibility of current or future activities upstream impacting the hydrological conditions (e.g. third parties diverting water away from the river for other purposes). To	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the extent that the Private Partner will generally not be in a position to restrict such activities, this will need to be a Contracting Authority risk.	
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in heavily treed, remote mountainous areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to notify and suspend work if a discovery is made and possibly also coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project (e.g. reservoirs), where practical they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK	**Community and businesses**	●	●		Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is	This issue is coming under increasing focus from multilateral agencies, development finance institutions and

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.				[●]	responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the hydro power project. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation and achieve key milestones on time. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses such as farms or compensation and livelihood restoration for people who carry out subsistence farming, hunting, fishing or similar, adjacent to the hydro power project). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Further, in view of the sensitivity of the environmental and social issues associated with large hydro projects (especially where the project may include the construction of a dam/reservoir), even if management of certain environmental and social issues rests with the Private Partner, the host government/Contracting Authority will have a significant role to play in facilitating initiatives at local level to explain the benefits of the project it is promoting. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced. Where legislation is insufficient and social risk obligations are passed onto the Private Partner, again detailed environmental and social annexes may be appended to and form part of the concession agreement to be adhered to by the Private Partner.
	Resettlement	●		[●]	The land requirements for hydro power projects can be significant and may involve the relocation of communities (especially where the project may include the construction of a dam/reservoir). Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation and livelihood restoration. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. Relocation will often mean constructing new housing, schools, medical facilities and other cultural community requirements (depending on the location) such as temples and churches. In some markets, these costs are all borne by

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						the Private Partner and form part of project costs. In addition to relocation, these communities (and others that are not relocated) will have lost land previously used (often informally) for subsistence farming, hunting, foraging and fishing. Livelihood restoration (with appropriate measures of success) will need to be carefully considered and planned. In addition to livelihood restoration, Contracting Authorities often use large-scale projects as a means to improve the livelihoods of remote communities previously living below the poverty line such that Private Partners are required to bring communities' incomes to a certain level above the poverty line on a long-term sustainable basis through employment, training and education. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are being considered. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards being included as contractual obligations. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions, the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some countries and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction.
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. See also *Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are being considered. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if the project is affected by prolonged drought conditions or flooding).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has granted third party rights upstream and this results in an adverse change to the hydrological conditions). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					An alternative may be to consider a separate contractual mechanism to address these type of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. In particular in the case of a hydro power project, the risk of such climate change leading to flooding (and possibly putting the safety of the dam at risk) or conversely long-term drought, should be considered carefully at the outset. *See also Force majeure risk and Operational risk.*	
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**			●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. For hydro power projects the Contracting Authority will likely specify whether the project should feature a dam and reservoir, or whether it should operate as a run-of-river project. In making this determination the Contracting Authority might need to weigh a number of factors including, the increased costs and added environmental and social impacts of a dam against the reduced operating flexibility that might be inherent in a run-of-river project. In any case, the Contracting Authority will wish to ensure that it satisfied as to the safety of the proposed project. This may include imposing a requirement that the Private Partner eventually have any dam designs reviewed by an international panel of experts. Further, the Contracting Authority may also wish to be more prescriptive regarding the design for projects within a cascade (or potential cascade), where efficiency of the system as a whole will need to be considered.	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. In emerging markets the Contracting Authority will also often provide a broad output specification.
				●	**Infrastructure being built for operation by the Contracting Authority:** If infrastructure, for example, transmission facilities, is being constructed and handed over at completion for operation by the Contracting Authority (or relevant designated nominee such as the offtaker), the Contracting Authority may require the relevant sub-contractor warranties to be assigned in favour of such entity. If the Contracting Authority prefers to continue to deal directly with the Private Partner, the Private Partner will mitigate its risk under the warranties to the Contracting Authority with back-to-back warranties with its sub-contractor.	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or exiting asset conditions, including geological conditions along tunnelling routes as described below) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.* Where projects involve large elements of tunnelling over long distances, it is likely that the available site survey information will not allow the parties to be certain about all subsurface conditions that may be encountered. In this case, it may be difficult for the Private Partner and its sub-contractors to efficiently price the tunnelling works on a lump sum basis. To ensure that it is receiving value for money, and that Private Partners and sub-contractors remain interested in the project, the Contracting Authority may need to consider allowing time and cost relief to the Private Partner in certain circumstances – for example, if the actual subsurface geological conditions experienced completing the tunnelling works are worse than an agreed baseline set of conditions assumed by all parties at the start of the project.	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. and obtaining appropriate security to the risk of non-performance (for example, parent company guarantees and performance bonds). The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA*	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Some hydro power projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					risk, Variations risk and Change in law risk. Such relief or compensation events might include circumstances where the Private Partner encounters actual subsurface geological conditions when completing tunnelling works which are worse than an agreed baseline set of conditions assumed by all parties at the start of the project. *See also Cost overruns under Construction risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the “longstop date” (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project’s construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority’s likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project’s revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner’s risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to integrate complex works. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects or services may also affect contract obligations and risk allocation**.** If some or all of the project is dependent either on the Contracting Authority carrying out particular works (e.g. development of a new transmission line and supporting infrastructure required to export net electrical output from the hydro power project to end users) or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will be the Contracting Authority’s risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. *See also MAGA risk.* *See also Suitability of design under Design risk and Maintenance standards under Operating risk.*	A hydro power project is a more complex (and risky) type of energy infrastructure, involving the construction of a dam (or dams), often reservoirs and sometimes canals to conduct water to the hydro power plant and a power plant with generating units. Moreover, and it is particularly relevant in emerging markets, it may include building associated infrastructure such as transmission lines or roads which may either be constructed by the Contracting Authority, whether the Government or by the state owned offtaker (and therefore the financing and completion of construction on schedule need to be considered in advance by the Government) or by the Private Partner (and handed over to the Government at completion or at the commercial operation date) in which case, the on-going operation and maintenance will be for the Contracting Authority.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the capacity payment (or, if there is no capacity payment, increasing the energy charge) to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. In a project featuring a dam the Contracting Authority will wish to ensure that that dam remains free from defects. The Contracting Authority's primary protection for defects which may impact the performance of the hydro power project (other than its safety) will be the reduction of any capacity payment or energy charge. *See also Performance/price risk under Operating risk. See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	Defects liability periods vary between legal systems and jurisdictions, and may be set contractually or in some cases by law. Market practice also varies between sectors.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the hydro power project and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the hydro power project.

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service or works changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service or works changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Cost overruns and Works completion delays under Construction Risk, Increased operating costs and affected performance under Operating risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation. The Private Partner's capacity payment or energy charge may be subject to abatement if availability criteria and performance-based standards are not met, including if the facility runs at a lower capacity than initially intended. The Private Partner will be penalised if the plant fails to meet the minimum contracted capacity. This compensates the Contracting Authority for the reduced benefit from the river resource. Where the plant is not available due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances (such as lower than expected hydrology), the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). *See also Force majeure risk and MAGA risk* and *Operational resources or input risk under Operating risk* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives.	The Contracting Authority should set standards which are achievable for the hydro power plant in the relevant market, taking into account, for example, historical hydrological conditions and weather patterns. In less mature markets or where there is insufficient historical hydrology and climate data, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the hydro power project has stabilized. This can mitigate the risk of long-term performance failure.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Operational resources or input risk		●		Hydrological risk is the main input risk for hydro power projects once they are operational. The sufficiency and quality of the water supply should be assessed by reference to detailed and accurate historical records maintained over a long period of years. In developed markets, the Private Partner often bears the principal responsibility to ensure sufficient water flow for the project. In such case the Private Partner will be required by its lenders to justify its hydrology assumptions based on several years of hydrology data collection and probability analysis of water levels and quality. The Private Partner can mitigate water quality and siltation risks through appropriate management of the catchment areas. The parties should also consider the impact of seasonality on the generation capacity of the project throughout the year (particularly for run-of-river projects), and whether climate change or third party activities upstream from the project might adversely impact the hydrological conditions at the site. *See also Climate change event under Environmental risk.* The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of the other input resources for the project (such as utilities and maintenance equipment and materials) and to manage the costs of those resources. There are limited other inputs for an operational hydro power project (the feedstock is water from natural sources) so this resourcing risk is generally seen as limited to the accuracy of hydrology forecasts and the risk of climate change over time. In some markets, there may be specific instances where certain input risk needs to be shared (e.g. in relation to availability of local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	In emerging markets, it is to be expected that the reliability of the water supply will be assessed by reference to detailed and accurate historical records which should have been maintained over a long period of years by the host country. The Contracting Authority will be expected to share the risk of lower than expected hydrological conditions if such detailed and accurate records do not exist. Different approaches to risk sharing may be adopted allocating more or less levels of such risk to the Contracting Authority. The agreed risk allocation will depend on a number of factors including the quality of the available hydrology data and whether analogous precedent hydro power projects are already operating in the region. Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the hydro power project and for intellectual property infringement. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain “day to day” operational health and safety responsibility. Subject to applicable law, the Private Partner’s liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner’s responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically	In many jurisdictions by law it is not possible to exclude or cap liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner’s control, for example a failure or lack of intervention by emergency services.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement (e.g. through abatements to the capacity payment or energy charge in connection with reduced availability of the plant), can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	The Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes.
		[●] ●		●	**Existing assets in the project:** As regards existing assets in the project, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** The Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of an existing (or other) hydro power network that integrates with the project as this will be key to providing access to the new hydro power project. *See also Access to the site and associated infrastructure under Land availability, access and site risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism	●		●	*See Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the hydro power project.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
DEMAND RISK	**General principles**				Demand risk is not generally applicable to hydro power projects where the power purchase agreement often works on either a capacity payment basis if the project features a dam and reservoir or a "must take"/"take or pay" basis where the project is run-of-river as the electricity produced cannot be stored. In each case the Contracting Authority takes the risk that the system does not require the electricity that the hydro power project is capable of generating. If the project is constrained by the system operator the Contracting Authority may be required to make compensation payments to the Private Partner or may remain obliged to make capacity payments. In certain developed markets the Private Partner may be required to sell the output into a power pool. In such cases the power purchase agreement with the Contracting Authority will operate as contract for difference where the Contracting Authority pays the Private Partner the difference between market prices for the electricity and the fixed price agreed between the Contracting Authority and the Private Partner during the procurement process. If market prices are higher than the fixed price the Private Partner will owe the difference to the Contracting Authority. In many developed markets there may be green benefits associated with the production of renewable energy. These benefits are usually transferred to the Contracting Authority and the price is included within the payment structure under the power purchase agreement agreed at the outset so there is no additional cost to the Contracting Authority. In some cases, the green benefits may be sold to the market and the benefits shared between the parties. In developed markets, it is common for certain renewable generators to have priority access to the electricity system on the basis that renewable generation is being encouraged and the resource can be intermittent (e.g. wind and sun).	In most emerging markets the electricity sector has not been liberalised and the utility (the usual contracting entity) is vertically integrated. Demand risk for independent power producers is borne by the Contracting Authority and it will assume the risk that there is no demand for the electricity produced. The Contracting Authority will mitigate the demand risk assumed under the power purchase agreement through system planning before and during the procurement process and operations. To the extent that supply exceeds demand in any period this is usually mitigated by reducing the output of flexible generation such as hydro power projects featuring a dam and reservoir or thermal generators. A recent trend in some developing markets is that the Contracting Authority may seek to retain any entitlement to carbon credits or other green benefits arising from the project.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index. In developed markets where there is a feed-in-tariff, the power purchase agreement does not provide flexibility to the Private Partners to increase the feed-in tariff on account of inflation.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the Contracting Authority. The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift or as an adjustment to the capacity payment or energy charge. There is always a time lag in how quickly the indexation price increase is available to the Private Partner.	
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					foreign currency, such as USD.	markets are more illiquid (such as in countries with less developed capital markets.
			[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid by the Contracting Authority in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as the USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. For example, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). In emerging markets, it is common to see the capacity payment or the energy charge having a local currency component (usually indexed to the relevant foreign currency) and a foreign currency component (generally based on the currency of the project financing) or for the full capacity payment or energy charge to be paid in foreign currency. Where a portion is payable in local currency, then the Private Partner and its financiers will look for reassurance from the Contracting Authority (or the relevant Government entity with the power to provide comfort on this point) of the availability of foreign exchange reserves and the ability to transfer monies offshore. *See also Strength of Contracting Authority payment covenant under Early Termination risk.*
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
						private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					uninsurable.	
	Refinancing		●	[●]	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include (depending on the payment structure): (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments; (c) a reduced capacity payment or energy charge; or (d) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation. As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects. A carve-out from these restrictions should always be included for enforcements by lenders to the project.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in	● (No Private Partner fault)		● (Private Partner fault)	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*					This risk is not applicable in the context of a transaction where the Contracting Authority has taken the demand risk and agreed to purchase all of the capacity or energy available from the project under a long term power purchase agreement.	
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be “natural force majeure” events (such as natural disasters and severe weather events, and possibly climate change events) and certain “political force majeure” events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank’s *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction. In hydro power projects, the Contracting Authority should be careful to consider to what extent certain natural risk events should be included as force majeure events (or that these are clearly included only to the extent that such events could not have been foreseen). For example, if the Private Partner is to take hydrology risk, then the Contracting Authority may want to expressly exclude drought and lack

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					length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 12 – 24 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	of rainfall. Similarly, any flooding that is usual should not provide relief to the Private Partner and the Contracting Authority may instead want to limit events to severe weather or natural disasters.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 12 – 24 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, the capacity payment or the energy charge could be increased. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event) or a natural risk event affecting the Contracting Authority rather than the Private Partner. *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In a capacity payment model, the plant may also be deemed available, and in energy charge payment only model there may be deemed generated energy. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the hydro power project is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**			●	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively.	
		●		[●]	Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project. *See also Maintenance Standards under Operating risk.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific hydro power project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the hydro power sector or to investors in hydro power businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply	

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					retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism.	Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The Contracting Authority may be required to make changes to the capacity payments or the energy charge or, if this does not provide sufficient relief, to make compensation payments to the Private Partner. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters. It is also considered unenforceable in many jurisdictions.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be

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					with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk..* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty. In emerging markets, it is common to see a government guarantee being provided in respect of the Contracting Authority's termination payment obligations.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner,

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	referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)				**Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 12-24 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted . In some jurisdictions, the level of compensation will be different depending on whether the force majeure event has impacted the Private Partner as against the Contracting Authority.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.*	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or

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					Compensation: The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100% although in some emerging markets this can be as high as 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset, the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX D:

Power Transmission PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: POWER TRANSMISSION

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a power transmission PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in power transmission PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in power transmission projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** See *Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new PPP power transmission project. Scope may include associated infrastructure, such as substations and connection to an existing power network/grid.
ASSUMPTIONS	The Private Partner finances the development of the new power transmission system and only starts to receive payment from the Contracting Authority (and/or where applicable, operating companies) once the power transmission system is in operation. The Contracting Authority owns and operates the existing electricity system in which the new transmission facilities will be built and interconnected. In the operating phase, the Private Party is responsible for the operation and maintenance of the power transmission system and is paid by the Contracting Authority. Power distribution is not included in the scope. The Contracting Authority could issue functional specification which would permit a variety of technical solutions (e.g. different conductor and tower configurations). The power transmission network is onshore.
MARKET APPROACHES	As well as PPP structures, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver power transmission infrastructure with private sector involvement, including traditional procurement of certain elements of the construction or operation of the network.. Privatising and regulating the national electricity market through an overarching licensing and tariff regime under an independent regulator is another approach, which may, as in the EU for example, include compulsory unbundling of generation, transmission and distribution as an anti-monopoly measure. Electricity market regulation is a complex area with many different structures. In markets with a privatised national electricity market regime, private sector businesses are granted licences to operate and there may be restrictions by law on businesses operating as generator, transmission operator and distributor to the end user. As regards distribution to end users and pricing, tariff setting is addressed under the regulated regime and tariffs (or caps on tariffs) and will be based on a formula which takes into account capital costs and efficiencies, for example on the basis of a "costs plus" or regulated asset base approach, and an element of equity return. Tariffs will be reviewed periodically by the market regulator and so can be adjusted appropriately to take into account actual and anticipated capital investment and receipts. In less politically and legally stable markets without a strong independent regulator, the risks associated with revenue collection and government commitment to regulation and payment can make unbundling distribution networks and procuring private sector investment challenging. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works). The cost consequences of certain risks in this matrix will feed through to elements of the regulated tariff formula approach which take into account costs, but as the model is different the risks themselves are typically not expressed or allocated contractually under the licence in the same way as described in this matrix.
PROJECT REVENUES AND OTHER PAYMENT MECHANISMS	Project revenues are generated either solely through availability payments by the Contracting Authority, or combined with operating company payments in the form of operator capacity payments by operating companies (which may be state owned entities). This will depend on the project circumstances and to whom the Private Partner is transmitting the power. The availability payment will typically cover the Private Party's finance costs, operating and maintenance costs and return, and will be paid to the Private Partner to the extent the transmission system is available. The matrix does not consider the implications of a regulated national electricity market structure (including any regulated pricing structures).
KEY RISKS	**Land acquisition and site risk:** Typically, it is a Contracting Authority risk to acquire suitable land, free of any restrictions, and with necessary planning consent in order to lay the transmission network. This may be more challenging in high density urban areas. As power transmission systems impact a large number of different landowners, the Contracting Authority may wish to consider whether to implement certain required aspects (such as the imposition of safety zones and the grant to the Private Party of access rights across third party land during operations) through legislation/regulation rather than contractually. Although the passing of new/updated legislation/regulation may increase the lead time for the project, it is often a more efficient way of

	dealing with these issues in the long run. *See Land availability, access and site risk.* **Environmental/social risk:** The impact of constructing a power transmission network on local habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries, must be carefully assessed and managed by the parties. The Private Partner will bear the risk of obtaining and complying with environmental consents, but there will be an element of shared risk in relation to changes in approach from permitting authorities and external environmental events. The risk of impact on the local community and businesses will be borne by the Contracting Authority, but there will be shared elements in relation to, for example, industrial action. *See Environmental risk and Social risk*. **Completion/operation commencement risk:** Completion of works on time and on budget will be a particular challenge for the Private Partner in difficult terrain and where design involves underground work. This is a key risk for the Private Partner, given the potential length and variety of terrain a power transmission network may cover. *See Cost overruns and Works completion delays under Construction risk.* **Disruptive technology risk:** New technologies or other foreseeable developments, such as battery storage and off-grid developments, may render the project unnecessary or overly expensive in comparison. The parties will need to agree if and how the impact of such developments might be treated in the contract.
OTHER CONSIDERATIONS	**Operation commencement:** The Contracting Authority will usually wish to implement a single-stage completion process for energizing transmission through the new cable. Although a single operation commencement regime is more common, a multi-staged operation commencement process enabling the Private Partner to begin to receive payment once significant components of the project are substantially completed may be appropriate in some cases subject to the project requirements and system design. This can help increase cash flow during the overall construction process, reduce the Private Partner's financing costs and incentivize the phasing of construction works in order to ensure critical components are completed on time. On the other hand, staged completion dates may also increase the complexity of the construction programme, limit the Private Partner's ability to mitigate construction delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** See *Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** See *Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** See *Environmental risk and Social risk*. **Additional equity and other funding support:** See *Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** See *PPP Project Preparation and Delivery in the Introduction*. Detailed ground surveys should be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: See *PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. See *Environmental risk and Social risk.*
	Having competent advisers: See *Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: See *Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: See *Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.			●
DEMAND RISK	The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	●		
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the transmission corridor and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. As power transmission systems impact a large number of different landowners, the Contracting Authority may wish to consider whether to implement certain required aspects (such as the imposition of safety zones and the grant to the Private Party of access rights across third party land during operations) through legislation/regulation rather than contractually. Although the passing of new/updated legislation/regulation may increase the lead time for the project, it is often a more efficient way of dealing with these issues in the long run. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* During the feasibility stage (see *PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the transmission system (including how the risks may change if elements of the transmission infrastructure and cabling are undergrounded). Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the transmission corridor, but the suitability of the transmission corridor may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	Undergrounding of the transmission system is more likely in urban areas or areas of social/environmental sensitivity.
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. The importance of this risk may depend on the extent to which Contracting Authority's specification and the Private Partner's solution includes undergrounding of transmission infrastructure and cables. *See also Site condition*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					under Land availability, access and site risk.	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction (including for example closing adjacent roads to enable construction to take place over them). Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.*	Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the transmission system. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the transmission system (for example, on environmental grounds), there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation/diversion of utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or relocations. Costs and delays caused by re-location or diversion of existing utilities which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism. Where existing utilities will remain in place at or in the vicinity of the site, the Private Party may be required (or wish) to enter into crossing agreements or proximity agreements with the owners of the relevant utilities.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances, market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project, where practical they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●	●	[●]	Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the transmission system. It may need to carry out social impact studies and aim to minimise any negative impact of the project (e.g. undergrounding the transmission system in sensitive locations). Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the transmission system (or new substations)). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties)will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation, although this may be mitigated by specific siting of the infrastructure. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory purchase laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in
	Obtaining environmental consents	[●]		●	**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]		●	**Post-signature:** Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk.* In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk.*	the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an earthquake damages key elements of the transmission network so that it cannot operate for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event if they damage the transmission system (or a new substation) or lead to legal action against the project by third parties. *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these type of risks over	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the system and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but defined design standards (which may be statutorily imposed) may render such a process less important than on other projects care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate site condition or existing asset surveys). *See also Changes to design under Design risk.*	Developed market transmission projects benefit from defined design standards which allow for increased innovation and productivity gains. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority.
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required route corridor or specified conductor or tower type constrains the efficiency of the design), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into an existing electricity transmission system (e.g. an existing interconnected transmission system), the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk)*. If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
property rights compliance; industrial action; and vandalism.					variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of undergrounding, this element of construction risk will be more carefully assessed by the Private Partner.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials or specialised digging equipment, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA risk, Variations risk and Change in law risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The Contracting Authority will usually wish to implement a single-stage completion process for energizing the transmission facilities. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Some projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities			●	**Project management:** Typically, the Private Partner assumes project management risk. The Private Partner is best placed to integrate the complex works, construction, energization and long-term operation and maintenance of the project to ensure reliable service. This may be managed through a single project joint venture / consortium or by the Private Partner managing a series of works, supply and operation/commissioning contracts. The Private Partner will be expected to demonstrate readiness for	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			energization before it is given permission to energize and operate the transmission assets. **Interface with other works/facilities:** Interdependence with other projects or services may also affect contract obligations and risk allocation**.** If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will generally be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of interconnection facilities to connect to an existing power network/grid. *See also MAGA risk.* *See also Suitability of design under Design risk and Maintenance standards under Operating risk.*	the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services. Some power cable projects have experienced issues with the cable system causing interference with third party telephone lines.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-	Defects liability periods vary between legal systems and jurisdictions, and may be set contractually or in some cases by law. Market practice also varies between sectors.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the transmission system and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk in certain political climates.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Cost overruns and Works completion delays under Construction Risk, Increased operating costs and affected performance under Operating risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk.*	
	Performance/ price risk	●		●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation. In an availability based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria may be linked to the system being able to transmit a certain level of power at particular times of day. Where certain availability criteria (or performance indicators) cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, if civil unrest causes damage to the transmission system. The Contracting Authority will generally retain the risk associated with outages (and related maintenance) caused by other transmission infrastructure which interconnects with the transmission system. *See also Maintenance standards under Operating risk, Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets.	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable driving and vehicle maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the transmission system has stabilized. This can mitigate the risk of long-term performance failure.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the transmission system and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk)*. The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits. *See also Existing assets below.*	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.*
		●	[●]		**Throughput higher than forecast:** If transmission load is much heavier than forecast and beyond the capacity specification required by the Contracting Authority, it may need to agree a mechanism to pay	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					compensation in respect of increased maintenance costs or agree a system upgrade variation.	
		●		●	**Existing assets in the project:** If any existing assets are to be integrated into the project system by the Private Partner, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). For example, if the system is part of an existing interconnected transmission system, the Contracting Authority may be required to guarantee and manage maintenance which is dependent on that system. **Existing (or other) assets interfacing with the project:** The Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of an existing (or other) power asset that integrates with the project if it is key to the availability of the new power transmission project (for example, an existing sub-station. *See also Access to the site and associated infrastructure under Land availability, access and site risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. *See also Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk in certain political climates and in certain geographical areas (i.e. whether the transmission infrastructure is located in an urban or non-urban area).
DEMAND RISK *The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*		●			Demand risk is not applicable as the Private Partner will typically be paid for having made the transmission available to a particular standard/capacity which is not reliant upon demand for electricity or actual transmission. As such, the Contracting Authority will retain all demand risk in relation to the transmission asset. The project cashflows could include an availability element and a user pays element, based on operator capacity payments. This will depend on the project circumstances.	
FINANCIAL MARKETS RISK *The risk of inflation; exchange*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the Contracting Authority (on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. On availability-based projects, this is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs.	managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid by the Contracting Authority in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as the USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. In addition, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.*

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	[●]	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects, there may be limited scope for the Contracting Authority to

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit; (c) a reduced availability payment; or (d) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase (i.e. post energization) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in			●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be	In some sectors in some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. In planning the project, the Contracting Authority will want to take into account that disruptive technology may impact its long term need for the asset. It may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as battery storage and off-grid developments. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. In many jurisdictions changes can also be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining to the extent which an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses.	The approach to cost and deductions relief varies across

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	consequences				However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as storms/hurricanes/excessive snowfall or where earthquakes are common.	jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation in relation to the PPP project; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a

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					unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	● ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where police fail to take action to remove trespassers who damage the transmission system or their presence means the transmission system has to be switched off so is unavailable). *See also MAGA.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific power transmission project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the power transmission sector or to investors in power transmission businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism .	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Change in law risk. **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. This may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. the transmission system may be usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX F:

Industrial Park PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: INDUSTRIAL PARK

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in an industrial park PPP transaction, together with guidance on how those risks are typically allocated between the Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in industrial park PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in industrial park projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, management, maintenance and transfer to the Contracting Authority (or retention by the Private Partner) (at the end of the PPP contract) of a new industrial park. Scope may include: (i) provision of cleaning, catering, caretaking, ICT provision and security; (ii) emergency accident and preventative responsibilities, roadside assistance (e.g. towing, fire extinction) and traffic management obligations with respect to the roads within the industrial park; (iii) to the extent relevant, interface with sub-contractor constructing and designing transport access (rail or roads) into the industrial park (if different from the Private Partner); and (iv) other (mandatory) service provision to other third parties (e.g. companies that lease the industrial buildings). Additional risk allocation considerations will be relevant if scope extends to the supply of new water or power infrastructure to service the industrial park. In some projects, the Private Partner may be required (depending on the location of the industrial park if no existing transport links or access exist) to design and build the transport access into the industrial park.
ASSUMPTIONS	The Private Partner finances the development of the new industrial park and only starts to receive payment from the Contracting Authority (and/or where applicable users) once the industrial park is in operation. The Contracting Authority provides the site for the new industrial park and transfers any existing buildings to the Private Partner for the purposes of the project. There are existing transport access routes to the site provided by the Contracting Authority, as well as access to grid electricity and water, and no new access roads or other electricity or water infrastructure need to be built other than roads within the industrial site itself. If the Contracting Authority retains certain responsibilities in relation to any existing or new industrial park buildings this must be factored into the risk allocation. The industrial park (and all related project assets) are handed back to the Contracting Authority on early termination or natural expiry of the contract, together with all consents and licences (including intellectual property licences) necessary to continue operating the industrial park, in accordance with the contractual handback requirements. The matrix also considers circumstances where the Private Partner retains the project assets beyond the term of the contract and as such the residual value of the industrial park at the end of the contract should be considered.
MARKET APPROACHES	As well as PPP structures such as availability or demand risk-based projects/concessions, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver industrial park infrastructure with private sector involvement. These include more traditional procurement of just the construction of certain elements of an industrial park project, the procurement of standalone maintenance and other service contracts or the sale of land to the private developer, subject to certain development conditions for an industrial park. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	Project revenues are most likely to be generated through payments by the tenants of the industrial park to the Private Partner. The Contracting Authority may grant the Private Partner a concession or right (depending on the nature of the industrial park) to develop and manage the industrial park during the concession period in return for the Private Partner paying a concession fee to the Contracting Authority based on the level of tenancy revenues. The Private Partner will receive payments directly from the tenants of the industrial park, which may, for example, include rental payments, grounds maintenance fees, security fees and waste management fees. This will incentivise the Private Partner to develop the park and obtain industrial tenants. In addition, if the purpose of the industrial park is to regenerate a particular area or create a centre of particular industrial expertise, the Contracting Authority may be willing to pay a subsidy to the Private Partner (or require no or a lower concession fee) for providing the industrial park which will supplement the revenues received from the tenants, and may enable the Private Partner to charge a lower rent to attract tenants. Alternatively the Contracting Authority may provide a form of minimum revenue guarantee. An availability payment model could be applied if appropriate, with the Contracting Authority collecting tenancy payments itself and paying the Private Partner for making available the

	industrial park, or a combination of the two approaches. The Contracting Authority may also support the project through providing tax and other financial incentives to potential tenants, as well as assist with marketing campaigns, particularly where it wants the industrial park to regenerate a particular area or create a centre of particular industrial expertise.
KEY RISKS	**Completion:** As the Private Partner's revenues will typically only commence on occupancy of the industrial park, it will want to ensure that tenants can move in as soon as possible, and in accordance with any dates it has committed to in tenancy leases. This will be particularly important if the lease terms contain penalties for late occupancy. *See Works completion delays under Construction risk.* **Occupancy:** Where the Private Partner is bearing demand risk, it will want to attract tenants as soon as possible. The parties should agree a marketing strategy and the Contracting Authority should help promote the industrial park in a timely way, particularly where the purpose is to regenerate a particular area. *See Demand risk.* **Tenant credit:** Under the concession model the Private Partner will be taking the risk of the tenants' ability to pay rent and will therefore need to carry out suitable credit checks before entering into the relevant leases unless the Contracting Authority is prepared to underwrite the rental payments in order to encourage occupancy of the industrial park. In an availability model, the Contracting Authority would be taking this risk, except to the extent the project scope included a requirement on the Private Partner to collect rents. *See Demand risk.* **Interface with third party contractors:** If construction of transport access, water or power infrastructure has been contracted to a third party developer and is being constructed concurrently, this is a key risk during the construction phase as any misalignment in the programme could impact the construction timetable. *See Suitability of design under Design risk and Project management and interface with other works/facilities under Construction risk.*
OTHER CONSIDERATIONS	**Staged operation commencement:** The parties may wish to implement a multi-staged operation commencement process on the industrial park to enable the Private Partner to begin to receive payment once significant components of the project are substantially completed (i.e. individual industrial buildings and access roads). This can help increase cash flow during the overall construction process, reduce the Private Partner's financing costs and incentivize the phasing of construction works in order to ensure critical components are completed on time. In a concession model, the Private Partner may well want to have this ability where it is bearing demand risk as regards tenants. It may enable the Private Partner to take on early tenants which in turn may encourage other tenants to lease space on the new industrial park. On the other hand, staged completion dates may also increase the complexity of the construction programme, limit the Private Partner's ability to mitigate construction delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner. This is likely only to be suitable where distinct sections of the industrial park can become operational in phases and where commencement of operation will not distract from ongoing construction requirements (or vice versa).
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** See *Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** *See Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** There may be increased standards relating to health and safety depending on the type of industry envisaged on the park. *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the Introduction*. In addition, studies for industrial park projects should include identification of land, interface with existing buildings (where applicable) and social and environmental impact of both the construction and operation of the industrial park. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. This will include assessing the potential increase in traffic around the site both during and after construction (e.g. particularly as if the project's aim is to promote commercial capacity and/or third party use of the park). See *Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the Introduction.*

	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. The Contracting Authority may also support the project through providing tax and other financial incentives to potential tenants, as well as assist with marketing campaigns, particularly where it wants the industrial park to regenerate a particular area or create a centre of particular industrial expertise. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk.*

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation/management.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.			●
DEMAND RISK	The risk of lessees being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]		[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK AND RESIDUAL VALUE RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority; and the risk of the residual value of the project assets/land.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of acquiring the required land interests for the project, whether through compulsory acquisition/expropriation or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. During the feasibility stage (see *PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the industrial park. Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through expropriation/compulsory acquisition/development consent order), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases or the consultation process). *See also Social risk.* Access to the industrial park (through public transport or other means) is usually an important element in the planning process as most industrial parks are typically constructed outside the city.	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. In this case, the Contracting Authority may need to provide assistance.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified after contract signature, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligation with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the land, but its suitability may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner and they are expected to price this risk in their bids. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					If zoning laws only allow for public services on the land, this may restrict the use of the buildings for commercial purposes. If this is important to the Contracting Authority (for example to optimise pricing or local support) the planning process needs to cater for such new / additional use.	
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction (including for example agreeing interface with any other contractors (where relevant)). This can be particularly key in densely populated areas. Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event or MAGA event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the impact on access roads of heavy loads. However, where the scope includes the provision of access roads to the industrial park, that will affect the risk allocation with respect to access.	Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.
		●		●	**Operation phase:** In circumstances where access roads will need to be built for the industrial park, it is in the Contracting Authority's interests to ensure lessees, staffs and visitors can get to the industrial park and typically this is a Contracting Authority risk. Preventing the Private Partner accessing the site to carry out the project may be treated as a compensation event or MAGA event. *See also MAGA risk.* However, where the scope includes the provision of access roads to the industrial park, that will affect the risk allocation with respect to access. Provision of access on the industrial park site itself is typically the Private Partner's responsibility (e.g. keeping entrances, corridors, internal roads and site walkways clear of snow/other obstacles).	
	Site security	●		●	Risk allocation with respect to site security will depend on the political climate, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the industrial park. **Construction phase:** Ordinarily the Private Partner will be responsible for construction site security. In certain cases, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction). Failure may be treated as a compensation or	For example, in some projects, there may be issues safeguarding the buildings and equipment.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.* There may be security interface issues in circumstances where the access transport links are being constructed by a party other than the Private Partner, which will affect the risk allocation arrangements with respect to site security.	
					Operation phase: Ordinarily the Private Partner will be responsible for day-to-day site security. Depending on the nature of the concession, where particular security issues exist, the Contracting Authority may in some circumstances be required to provide additional site security / assistance during operations to manage this risk. Failure to do so may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism risk under Construction risk and Operating risk.*	
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys for the relevant site during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. It should also carry out surveys and provide all available information to the Private Partner about the existing buildings (such as construction and materials used). Sharing the surveys and information will save bidders' costs (all of which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. where the existing site makes this difficult), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys on a less built-up site.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project and such assets are to be provided by the Contracting Authority, they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	Some projects (e.g. in the UK and Belgium) have treated asbestos risk and other existing buildings risk separately to other site risks. In the case of asbestos, this is because of its prevalence in certain construction eras, the costs involved in disposing of it and because it may only be discovered once refurbishment/demolition has begun.
SOCIAL RISK *The risk associated with the*	**Community and businesses**	●	●		Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.				[●]	responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation/management of the industrial site. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the site). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations.	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	

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	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from a nearby factory forces the lessees to leave the industrial park for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to enforce environmental laws and a resulting environmental incident on the park requires the lessees to leave the industrial park for a period). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these type of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**			●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards, energy efficiency standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the system and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications (e.g. as described under *Prescriptive output specification under Suitability of design)*. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and

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		[●]			and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate existing building/site condition surveys). *See also Changes to design under Design risk.*	take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority.
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the park or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required building design constrains the efficiency of the design), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk)*. If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action and vandalism.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk*) or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA risk, Variations risk and Change in law risk..* In most availability-based projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation

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					extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Unless there is a particular time pressure in relation to the opening of the industrial park from the Contracting Authority's perspective, the incentive on the Private Partner to commence revenue-generation should be sufficient, particularly in a concession-based model. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses (taking into account that it is not yet having to make availability payments), they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project management:** Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects or services may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party (for example, access roads to the site being ready) that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of transport access. *See also Utilities and installations and Access to the site and associated infrastructure under Land availability, access and site risk, Suitability of design under Design risk, Maintenance standards under Operating risk and MAGA risk.*	In both remote and densely populated areas, public transport access can be crucial to the successful use of the industrial park by lessees, staff and customers. In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price (in an availability–based model) to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety

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					Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	Defects liability periods vary between legal systems and jurisdictions, and may be set contractually or in some cases by law. Market practice also varies between sectors.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the industrial park and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) if the park is being handed back to the Contracting Authority to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	[●]	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where circumstances in the area are such that vandalism and petty crime are more prevalent.

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VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Cost overruns and Works completion delays under Construction Risk, Increased operating costs and affected performance under Operating risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation. In a concession user pays model, poor performance by the Private Partner may lead to penalties or deductions by tenants under the relevant lease/fee agreements as regards rental payments and other fees, adversely affect demand to rent and consequently impact on project revenues. It may also lead to penalties or deductions under the concession agreement with Contracting Authority, depending on its scope and applicable requirements and output/performance standards. *See also Demand risk.* In an availability based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria may be linked to the industrial area being, safe, open and operational and performance standards may be linked to room temperature and cleanliness key performance indicators or graffiti removal response measures. Where certain availability criteria or performance indicators cannot be met due to actions by the	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once performance has stabilized. This can mitigate the risk of long-term

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, lessees or customers have damaged the electricity system by plugging in unauthorised equipment. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets.	performance failure.
	Operational resources or input risk		●	●	Generally, the Private Partner is likely to be responsible for (a) providing security personnel and ensuring the industrial park is secure at all times, (b) waste disposal (depending on the type of industries that occupy the site), (c) building maintenance, and (d) ground maintenance. The Private Partner will bear the risk of the cost of these services going up as it is likely that it would charge a fixed fee, which may be subject to review at yearly, or 3 yearly intervals. However, it is very unlikely for there to be a sharp price surge for these services.	.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the industrial park and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) if the park is being handed back to the Contracting Authority to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (see also Unavailability of insurance under Financial markets risk). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement (as applicable) *(see also Condition at handback and residual valuerisk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risks.
		●		●	**Existing assets in the project:** As regards any existing structures, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** The Contracting Authority may be required to guarantee and proactively manage the maintenance of existing (or other) industrial buildings or facilities that integrate with the project where these impact on the availability of the project buildings. **Enforcement of regulatory regime:** Where the project scope includes roads, the maintenance obligations are closely linked to change of law risk and the regulatory framework. Maintenance costs, for example, will be affected by weight/charge limits for trucks, as well as other heavy impact aspects. If these restrictions are not complied with by road users or enforced, the maintenance costs will be higher. Changes to the regulatory framework or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA risk and Change in law risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Industrial action	●	[●]	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism is often a Private Partner risk in the operation phase, sometimes with a threshold/cap above which the Contracting Authority will bear/share the risk. The allocation and threshold/cap will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. For example, some materials can be more easily cleaned of graffiti. The Private Partner must fulfil its obligations as regards site security and materials which deter/minimise the effects of vandalism, or could prevent vandalism. Sometimes this is a risk the Contracting Authority may need to share, for instance where the Private Partner has complied with all requirements but could not prevent the vandalism. This risk can be shared by giving the Private Partner relief from performance deductions while the damage is remedied, or by cost contribution. The availability of insurance will also be relevant.	Vandalism may be more of a risk where circumstances in the area are such that vandalism and petty crime are more prevalent.
DEMAND RISK *The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*		[●]		[●]	In a concession model, the Private Partner will typically bear the risk of finding tenants and generating rental revenue and other fees, although the Contracting Authority may provide subsidies or guarantees, as well as marketing support and other tax and financial incentives to attract tenants. This may be particularly the case where its aim is to regenerate a particular area by developing the industrial park or it wants to increase commercial activity or create a centre of particular industrial expertise. In an availability payment model, demand risk is rarely applicable to the Private Partner as it will typically be paid for having made the industrial park available to a particular standard which is not reliant upon demand for the building/site facilities.	
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the Contracting Authority(on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift regime. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. This is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs. In a concession user pays model, inflationary cost increases will typically be borne by the Private Partner until rent and fee adjustments can be made in accordance with the terms of the relevant leases/agreements.	
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					foreign currency, such as USD.	markets are more illiquid (such as in countries with less developed capital markets.
			[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid by the Contracting Authority or users in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or the entire contract price is linked to a foreign currency, such as the USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. For example, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. In the concession model, some cost risk can be managed by passing the risk on to tenants through rent adjustments, but the ability to do this may be limited under the relevant leases. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.*
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. In the concession model, some cost risk can be managed by passing the risk on to tenants through rent adjustments, but the ability to do this may be limited under the relevant leases.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage in respect of the core services becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	solution to unavailability at the start of the contract.
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing			●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently.	Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs.
			●		Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%), but it will be more likely where public funds are being used to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments; (c) a reduced availability payment; or (d) by a combination of the	It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					above. For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in	●		●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step-in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step-in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner,

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step-in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery.
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory. statutory or constitutional protections are available to the Private Partner In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as smart water metering or energy through rooftop solar panels or allowing electric vehicles only in the industrial park. It may be appropriate to agree a cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, switching to rooftop solar power may have social and environmental benefits but will involve implementation and maintenance costs and potential redundancy of existing power systems. Moving to only permitting electric vehicles would render traditional car fuel facilities obsolete and require increased electricity charging points within the park, as well as sufficient capacity within and connection to local electricity grids. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be	In certain markets, it may be necessary to differentiate how

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the industrial park is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					such as monsoon or where earthquakes are common.	
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation in relation to the PPP project; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault or failing to ensure utility connection to the project); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	 ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where load limits exceed permitted levels on roads and increased maintenance costs are incurred). *See also Maintenance Standards under Operating risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific industrial park project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. Changes in law which adversely affect provision of other non-core mandatory public services may require a separate regime. Changes in law which adversely affect the Private Partner's ability to carry out permitted commercial activities may similarly require particular treatment, for example if the Private Partner has relied on such third party revenue to bid a lower contract price. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the industrial park sector or to investors in industrial park businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism.	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. In projects involving multiple industrial buildings or sites, it may be appropriate that a default event relating to one building or site gives rise to a termination event either for just that building or site or for the whole project. For example, the Contracting Authority might want some flexibility to ensure the continuity of the public service. In any case, the contract must be clear as regards the intention. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT	**Condition at**			●	If the industrial park assets or land are handed back to the Contracting Authority at the end of the PPP	In civil law jurisdictions, assets built on publicly owned land

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
HANDBACK AND RESIDUAL VALUE RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority; and the risk of the residual value of the project assets/land.*	**handback**				contract, the Private Partner bears the risk of them being handed back in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. the useful life of the asset/ buildings beyond the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.
	Residual value			●	If the industrial park assets or land will have an on-going or alternative use in the Private Partner's hands (a "residual value") at the end of the PPP contract, the Private Partner may be willing to bear this risk and take the assets or land at the end of the contract instead of handing them back. The ability to do so will depend on applicable law regarding the land and assets *(see also Condition at handback under Condition at handback and residual value risk*). If the Private Partner takes such "residual value risk", in theory it should be able to bid a lower price for the contract on an availability payment model, or a higher fee payable to (or lower subsidy receivable from) the Contracting Authority in a concession model. However, the Private Partner's financial model may depend on debt and equity return being paid out during the life of the project. Even if the contract provides for the Private Partner to bear residual value risk, its pricing/fee may in practice reflect little or no adjustment. A Private Partner may be willing to accept the risk of being left with an asset with no alternative use if it assesses the risk as being so low as to be inconceivable. This will depend on the nature of the industrial park and the relevant market.	The Private Partner is likely to be unwilling to accept an option where it bears any real residual value risk in a market where (a) the future demand and use of the asset is uncertain (which will depend on other infrastructure investment and maintenance – e.g. roads and utilities being built and maintained) and (b) the land value is unquantifiable. Accepting the risk of being left with an asset with no alternative use is more likely in a known and predictable market. In other markets, the Private Partner may be reluctant to take this risk, especially if the asset may have decommissioning costs associated with it.

APPENDIX G:

Submarine Cable PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: SUBMARINE CABLE

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a submarine power cable PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in submarine power cable PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in submarine power cable projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** See *Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new PPP submarine power transmission cable and onshore converter stations. Scope may include associated infrastructure, such as substations and connection to an existing power network/grid. Much of this matrix will be applicable to other forms of submarine cable project if they are structured on a PPP/availability model basis.
ASSUMPTIONS	The Private Partner finances the development of the new submarine power cable project and only starts to receive payment from the Contracting Authority (and/or where applicable, operating companies) once the submarine power cable project is in operation. The Contracting Authority owns and operates the existing system in which the new transmission facilities will be built and interconnected and power is transmitted to it or, as applicable, operating companies. In the operating phase, the Private Party is responsible for the operation and maintenance of the power transmission system and is paid by the Contracting Authority. Power distribution is not included in the scope.
MARKET APPROACHES	As well as PPP structures, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver submarine power cable infrastructure with private sector involvement, including traditional procurement of certain elements of the construction or maintenance of the infrastructure. Privatising and regulating the national electricity market through an overarching licensing and tariff regime under an independent regulator is another approach, which may, as in the EU for example, include compulsory unbundling of generation, transmission and distribution as an anti-monopoly measure. Additional considerations may typically apply in relation to submarine power transmission in this type of regulated market. The *Power Transmission PPP Risk Allocation Matrix* contains further detail on national electricity market models. As regards other types of submarine cable project, although the PPP model is not usually the contractual model, most projects involve private financing (with public sector support as applicable). The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works). In the case of telecommunications cable projects, most submarine telecommunications cables nowadays are laid and owned by global technology companies, possibly in consortium with one or more national interested parties (such as the national governments or national telecommunications providers involved) buy into the spare capacity/fibre pairs. The newly connected country then bears a proportionate share in the operation and maintenance cost of the main cable along with the other fibre pair owners.
PROJECT REVENUES INCLUDING PAYMENT MECHANISMS	Project revenues are generated either through availability payments by the Contracting Authority, or combined with user payments in the form of operator capacity payments by operating companies (which may be state owned entities). This will depend on the project circumstances and to whom the Private Partner is transmitting the power. The matrix does not consider the implications of a regulated national electricity market structure (including any regulated pricing structures).
KEY RISKS	**Land/seabed rights acquisition and site risk:** Acquiring suitable land, foreshore and seabed rights, free of any restrictions, and with necessary planning and other consents in order to lay the power cable network is a key risk. This may be more challenging where rights are not clearly recorded or there is opposition to the project. *See Land availability, access and site risk.* **Environmental/social risk:** The impact of laying a submarine power cable (onshore and offshore) on local habitat, marine life, (social) infrastructure and communities generally, as well as on adjacent properties and industries (such as fishing industries), must be carefully assessed and managed by the parties. *See Environmental risk and Social risk.* **Completion/operation commencement risk:** Completion of works on time and on budget will be a particular challenge for the Private Partner in difficult terrain onshore and offshore and where specialist vessels and equipment have to be available in suitable weather conditions and within specific laying windows. *See Cost overruns and Works completion delays under Construction risk.* **Disruptive technology risk:** New technologies or other foreseeable developments, such as battery storage, off-grid developments or other power sources, may render the project unnecessary or overly expensive in comparison. The parties will need to agree if and how the impact of such developments might be treated in the contract. *See Disruptive technology risk.*

OTHER CONSIDERATIONS	**Operation commencement:** The Contracting Authority will usually wish to implement a single-stage completion process for energizing transmission through the new power cable. Although a single operation commencement regime is more common, a multi-staged operation commencement process enabling the Private Partner to begin to receive payment once significant components of the project are substantially completed may be appropriate in some cases subject to the project requirements and system design. This can help increase cash flow during the overall construction process, reduce the Private Partner's financing costs and incentivize the phasing of construction works in order to ensure critical components are completed on time. On the other hand, staged completion dates may also increase the complexity of the construction programme, limit the Private Partner's ability to mitigate construction delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** See *Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner may enter into a lump sum construction contract with a construction sub-contractor (or a series of sub-contracts) to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor(s) will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract(s) being reached or warranty periods under the sub-contract(s) being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating/maintenance sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** See *Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** See *Environmental risk and Social risk*. **Additional equity and other funding support:** See *Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** See *PPP Project Preparation and Delivery in the Introduction*. Detailed ground, seabed and marine surveys should be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: See *PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, marine life/wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. See *Environmental risk and Social risk.*
	Having competent advisers: See *Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: See *Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: See *Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority/government may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	**Shared**	**Private**
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.			●
DEMAND RISK	The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	●		
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the relevant land corridor for the onshore parts of the power cable, as well as the sites for any connecting onshore converter stations, and the submarine route of the power cable (subject to applicable marine/offshore laws). It will be responsible for acquiring the required land interests and foreshore and seabed rights for the project, whether through compulsory acquisition or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority's interest because on expiry of the contract the asset will typically revert to public ownership and operation (and/or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land or equivalent marine title issues. During the feasibility stage (see *PPP Project Preparation and Delivery in the Introduction*), the Contracting Authority should undertake detailed assessments as regards ownership/use of the relevant land and marine sites and ensure that it has a complete understanding of the risks involved in acquiring the required interests. Similarly, it should understand those that will affect the construction and operation of the power cable both onshore and offshore (including the risks associated with elements of the cabling being undergrounded and/or offshore and marine life/wildlife and habitat considerations). Issues such as rights of access for installation, inspection, repair and renewal will need to be considered, as will the route of the power cable (particularly if it crosses or runs along railways, highways, rivers or near military establishments). Reinstatement obligations both onshore and offshore will also be key. Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land. In developed markets, there will be a range of consents required for the project, relating to both onshore and offshore. Examples of specific permits which may be required, depending on the market, include: planning consent for onshore cabling, power cable landing points and converter stations; power cable laying and trenching permits; land drainage, controlled waters and discharge consents; harbour licences; access to exclusion zones (e.g. around shipwrecks); and access to designated nature conservation areas. *See also Key planning consents and Access to the site and associated infrastructure under Land availability, access and site risk.*
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of acquisition of required land, foreshore and seabed rights before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land, foreshore, seabed rights by contract award, it will bear the risk of providing them in accordance with a contractually agreed programme. Failure to obtain these by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land, foreshore or seabed is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, foreshore or seabed, unless the need for it is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land, foreshore or seabed is only identified after contract signature then this will be a Private Partner risk as the need should have been	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
					identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land, foreshore or seabed is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land, foreshore, seabed or marine rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land, foreshore or seabed is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the relevant corridor, but its suitability may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	
		●		[●]	**Underground/seabed:** Risk with regard to stability and suitability of the underground/seabed sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. The importance of this risk may depend on the extent to which Contracting Authority's specification and Private Partner's solution includes undergrounding of the submarine power cable and associated infrastructure. *See also Site condition under Land availability, access and site risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	Examples of specific permits which may be required, depending on the market, include: planning consent for onshore cabling, power cable landing points and converter stations; power cable laying and trenching permits; land drainage, controlled waters and discharge consents; harbour licences; access to exclusion zones (e.g. around shipwrecks); and access to designated nature conservation areas. *See also Provision of main land – general and Access to the site and associated infrastructure under Land availability, access and site risk.* In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction and maintenance/operation (including for example closing adjacent roads/sea routes or ensuring relevant permits are available. Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event where it is a Contracting Authority risk. The Private Partner may need to comply with any specific conditions as to timing of access, particularly in relation to laying or maintaining the power cable. In this regard, specific vessels are required for laying undersea power cables and it is only possible in certain weather conditions. There may also be specific windows within which the power cable laying must take place so as not to interfere with marine life spawning grounds and seasons. The risk associated with these combined factors must be taken into account by the Private Partner in its works plan, as well as by the parties in allocating the risk of delays. *See also Works completion delays under Construction risk, MAGA risk, Environmental risk, and Provision of main land – general and Key planning consents under Land availability, access and site risk.*	Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.
	Site/asset security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the power cable both onshore and offshore. Ordinarily the Private Partner will be responsible for day to day site security during construction. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. For assets of significant public importance, such as transmission or communications cables that have limited alternatives and/or are key to a country's interests, the Contracting Authority may want to retain control of the security arrangements. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	Where there is public opposition to the power cable (for example, on environmental grounds), there may be protestor action, or there may be issues safeguarding the power cable and installation.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Utilities and installations	[●]		●	Costs or delays caused by relocation/diversion of utilities: To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or relocations. Costs and delays caused by re-location or diversion of existing utilities which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism. Where existing utilities will remain in place at or in the vicinity of the site, the Private Party may be required (or wish) to enter into crossing agreements or proximity agreements with the owners of the relevant utilities.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk. In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
		[●]	●		Costs or delays caused by utility provider: Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances, market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	
	Site condition	[●]		●	**Surveyed:** The Contracting Authority should undertake detailed geotechnical and ground/soil/seabed surveys during the feasibility stage (if not already publicly available) and disclose such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award, the risk for unsurveyable site aspects will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]	[●]	**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk. In submarine power cable projects, this risk may be allocated	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
					differently depending on if applying to land or seabed.	
		●	[●]		**Unexploded bombs, naval and land mines, and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded naval and land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project, where practical they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●	●		Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries (such as fishing industries) – both in terms of the construction and the operation of the submarine power cable. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for businesses affected by the location of the power cable. For example, fishing communities may have their fishing and other sea-	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties)will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	related businesses and livelihoods disrupted by the construction and subsequent presence of the power cable; and communities in the vicinity of the onshore cabling and converter stations may face environmental issues (such as noise pollution and community displacement). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the submarine power cable project and as with any project with a land-based element, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation, although this may be mitigated by specific siting of the infrastructure. This may include the removal of formal and/or informal housing or businesses (land or water-based) and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land/water use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
climate change.					as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.* *Environmental legislation in this sector may be more rigorous in regulated and more developed jurisdictions.*
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk.* In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk.*	
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. These may include: (i) identification, generation, storage, handling, transportation, disposal, record keeping, labelling, reporting of and emergency response in connection with hazardous and toxic materials or substances associated with the power cable; (ii) limits and noise emissions from the power cable/converter stations and safety and health standards and practice applicable to their operation; and (iii) environmental protection requirements relating to the discharge of air and water pollutants. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. As well as potential environmental effects onshore, the risk of offshore environmental issues must be taken into account. Destruction of marine habitat and damage of reefs and other fragile ecospheres and marine life and habitat must be surveyed in advance and taken into account in locating the project. Timing of works and maintenance may also be key, depending on local flora and fauna and marine life spawning grounds and seasons etc. Reinstatement requirements must be considered. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so. If pollution is caused due to the power cable damaging other pipeline (e.g. oil), liability as between the pipeline owners will typically be determined under the crossing agreements between them.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an earthquake damages the submarine power cable so that it cannot operate for a period). If pollution is caused due to the power cable being damaged by another pipeline, liability as between the pipeline owners will typically be determined under the crossing agreements between them.	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event if they damage the submarine power cable or lead to legal action against the project by third parties. *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events such as droughts or floods and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. undersea earthquakes above a certain scale). Design resilience is also an important mitigating factor, for example, for projects where earthquakes (on land or at sea) are common. An alternative may be to consider a separate contractual mechanism to address these types of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the system and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but defined design standards (which may be statutorily imposed) may render such a process less important than on other projects care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. The reliability of the technology used will be key to performance. The Contracting Authority will want to assess the service history and reliability record of the Private Partner's chosen design solution by reference to similar submarine power cable installations (e.g. the type of return power cable/conductor or thyristor and the converter station). If the technology is new or unproven and/or involves critical intellectual property rights available to a single supplier, this can create significant risk for the Private Partner (and consequently for the Contracting Authority in terms of the success of the project). In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate site condition surveys). *See also Changes to design under Design risk.*	
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required route corridor or specified conductor or tower type constrains the efficiency of the design), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into an existing power cable or power system, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk.	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk)*. If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, variations, as well as delays in – or mitigating potential delays in – the construction programme. For example, more rock dumping than originally priced may be required to achieve the necessary degree of power cable burial. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Contracting Authority variations, Change in law or provisions specifically addressing exchange rate risk during construction – *see also Variations risk, Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Works completion delays under Construction risk, Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation.. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of undergrounding, this element of construction risk will be more carefully assessed by the Private Partner.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping, variations and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. Damage to the power cable can in particular cause delay and this can be caused by fishing vessels and anchor drag, as well as by changes in the seabed. Damage can occur where there is inadequate external protection (such protection being typically effected through armouring combined with burial in the seabed or rock dumping over the installed power cable, depending on the local seabed conditions). One of the key causes of third party damage is by other power cables crossing the power cable; to mitigate this risk the Private Partner will typically enter into crossing agreements with other power cable and pipeline owners with mutual capped indemnities against damage caused by the other party's operations. Insurance will also be key. Specific vessels are required for laying undersea power cables and it is only possible in certain weather conditions. There may also be specific windows within which the power cable laying must take place so as not to interfere with marine life spawning grounds and seasons. The risk associated with these combined factors must be taken into account by the Private Partner in its works plan, as well as by the parties in allocating the risk of delays. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or change in law). *See also Force majeure risk, MAGA risk, Variations risk and Change in law risk..* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The Contracting Authority will usually wish to implement a single-stage completion process for energizing the transmission facilities.	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Some projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan, whereas the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	
	Project management and interface with other works/facilities	[●]		●	**Project management:** Typically, the Private Partner assumes project management risk. The Private Partner is best placed to integrate the complex works, construction, energization and long-term operation and maintenance of the project to ensure reliable service. This may be managed through a single project joint venture / consortium or by the Private Partner managing a series of works, supply and operation/commissioning contracts. The Private Partner will be expected to demonstrate readiness for energization before it is given permission to switch on connection through the submarine power cable. **Interface with other works/facilities:** Interdependence with other projects or services may also affect contract obligations and risk allocation**.** If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of interconnection facilities *See also MAGA risk.* There will also be third party interface if the project power cable will cross any other power cables or pipelines. This will need to be factored into the works programme and appropriate agreements entered into by the Private Partner with the third parties concerned. *See also Performance/price risk under Operating risk.* *See also Suitability of design under Design risk, Maintenance standards under Operating risk and MAGA risk.*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold. *See also Performance/price risk under Operating risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services. Some power cable projects have experienced issues with the power cable system causing interference with third party telephone lines.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	Defects liability periods vary between legal systems and jurisdictions, and may be set contractually or in some cases by law. Market practice also varies between sectors.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the power cable and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism is not a risk typically associated with submarine power cable projects and due to its nature the site will have security. Malicious damage may be a concern depending on the nature of the project, its location and accessibility, public opposition and the political climate.. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk in certain political climates.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Cost overruns and Works completion delays under Construction Risk, Increased operating costs and affected performance under Operating risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.
OPERATING RISK *The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates or variations (e.g. as regards maintaining external protection of the cable) to extreme weather events or the actions of third parties. These can also affect availability and consequently revenue. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions (e.g. in respect of Contracting Authority variations or changes in law) or hardship doctrines *(see Glossary definition)* in underlying law. *See also Variations risk, Change in law risk, Force majeure risk and MAGA risk..*	
	Performance/ price risk	●		●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). Performance monitoring also enables the Contracting Authority to monitor service levels generally and potentially to receive early warning of matters requiring improvement or remediation. In an availability based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria may be linked to the system being able to transmit a certain level of power at particular times of day. There may also be agreed circumstances where availability is deemed, such as during permitted de-energization periods. Where certain availability criteria (or performance indicators) cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, if an undersea earthquake damages the submarine power cable. The Contracting Authority will generally retain the risk associated with failures (and related maintenance) caused by other infrastructure which directly interconnects with the power cable. *See also Increased operating costs and affected performance above, Force majeure risk and MAGA risk.* The main risk to availability for any submarine power cable is damage caused by third parties or by	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable driving and vehicle maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the submarine power cable has stabilized. This can mitigate

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					environmental factors. This risk is typically borne by the Private Partner but, in some cases, it may be appropriate for the parties to agree that certain damage or equipment failure is a shared risk. Damage can be caused by fishing vessels and anchor drag and also by changes in the seabed. Damage can also occur where there is inadequate external protection of the power cable (such protection being typically effected through armouring combined with burial in the seabed or rock dumping over the installed power cable, depending on the local seabed conditions). One of the key causes of third party damage is by other power cables crossing the power cable; to mitigate this risk the Private Partner will typically enter into crossing agreements with other power cable and pipeline owners with mutual capped indemnities against damage caused by the other party's operations. Insurance will also be key. The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets. Technology risk is also a factor which may affect availability. The Contracting Authority will want to assess the service history and reliability record of the Private Partner's chosen design solution by reference to similar submarine power cable installations (e.g. the type of return power cable/conductor and converter station). If the technology is new or unproven and/or involves critical intellectual property rights available to a single supplier, this can create significant risk for the Private Partner (and consequently for the Contracting Authority in terms of the operating success of the project). *See also Suitability of design under Design risk.*	the risk of long-term performance failure.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the submarine power cable and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any construction issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Performance/price risk under Operating risk and Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance of the power cable and converter stations as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits. If the system is part of an existing interconnected transmission system, the Contracting Authority may be required to guarantee and manage maintenance where this is key for connection and operation of the new power cable. Maintenance of undersea power cables will typically include regular periodic surveys to assess the adequacy of the power cable's external protection. Scheduled outages will typically be planned for as part of the maintenance programme to enable the Private Partner to carry out necessary inspections and remediation.	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.*
		●	[●]		**Throughput higher than forecast:** If transmission load is much heavier than forecast and beyond the capacity specification required by the Contracting Authority, it may need to agree a mechanism to pay	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					compensation in respect of increased maintenance costs or agree an upgrade variation.	
		●		●	**Existing assets in the project:** If any existing assets are to be integrated into the project system by the Private Partner, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). *See also Maintenance standards under Operating risk.* **Existing (or other) assets interfacing with the project:** The Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of an existing (or other) submarine power cable network that integrates with the project as this will be key to providing access to the new submarine power cable network. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* **Enforcement of regulatory regime:** Changes to the regulatory framework which cause higher maintenance costs/shorter asset life or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA risk and Change in law risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism is not a risk typically associated with submarine power cable projects, not least due to the depth of the power cables and security of the converter stations. Malicious damage may be a concern depending on the nature of the project, its location and accessibility, public opposition and the political climate. *See also Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk in certain political climates.
DEMAND RISK *The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*					Demand risk is not applicable to the Private Partner as it will typically be paid for having made the submarine power cable available to a particular standard/capacity which is not reliant upon demand for electricity. The project cashflows could include an availability element and a user pays element, based on operator capacity payments.	
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the Contracting Authority (on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. On availability-based projects, this is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
			[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid by the Contracting Authority in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. In addition, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.*
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●		●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	[●]	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit; (c) a reduced availability payment; or (d) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation as has been the case, for example, in some sectors in the Philippines. As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the	In regulated markets, the Private Partner will require a transmission licence which may be subject to revocation in certain circumstances (e.g. insolvency of the licensee or its parent or certain change in ownership).

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.					project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	In regulated markets, if the sub-contractor holds the required transmission licence, this may be subject to revocation in certain circumstances (e.g. insolvency of the licensee or its parent or certain change in ownership).
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase (i.e. post connection) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in	● (No Private Partner fault)		● (Private Partner fault)	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In some sectors in some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging*				●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	●		(e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. In planning the project, the Contracting Authority will want to take into account that disruptive technology may impact its long term need for the asset. It may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as storms/hurricanes/excessive snowfall or where earthquakes are common.	
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with*	**Compliance with applicable law**			●	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other	In regulated markets, the Private Partner will require, and must comply with, a transmission licence and be subject to the prevailing regulatory regime. Other licences and

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
applicable law; and changes in law affecting performance of the project or the Private Partner's costs.		●		[●]	mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where load limits exceed permitted levels and increased maintenance costs are incurred). *See also Maintenance Standards under Operating risk.*	consents may also be required. *See also Key planning consents under Land availability, access and site risk.*
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific submarine power cable project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. Regulatory changes or new permit, consent or other approval conditions (e.g. which impose more comprehensive and stringent compliance requirements) could adversely impact the project, particularly if the power cable is not able to operate within the new parameters. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled.
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the submarine power cable sector or to investors in submarine power cable businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions	Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					typically contained in the pricing mechanism .	Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no

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						compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. the power cable may be usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they

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Authority.					and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. There may be decommissioning responsibilities associated with an undersea power cable which the Private Partner will need to price into its bid. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

Important Information

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