



Infrastructure
and Projects
Authority



UK Government

Project Development Routemap

for Infrastructure Projects

International Module

Procurement

International version of UK Government's Project Routemap



Interactive
document

								Handbook
								Hb 00
Rationale	Governance	Systems Integration	Execution Strategy	Organisational Design & Development	Procurement	Risk Management	Asset Management	
Ra 01	Gv 02	SI 03	ES 04	OD 05	Pr 06	RM 07	AM 08	



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Preface

The UK Infrastructure and Projects Authority (IPA)¹ is proud to present this international module on the Project Development Routemap for Infrastructure Projects.

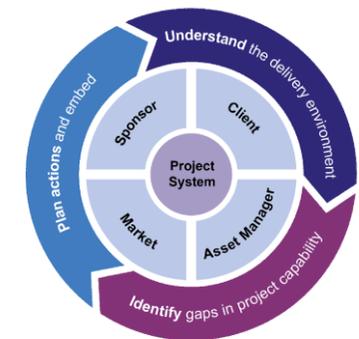
Projects that enhance and expand access to infrastructure are critical to achieving inclusive, sustainable growth and reducing poverty. However, infrastructure projects often encounter problems in their early stages. Poor project development constrains project delivery and limits the benefits it can drive from investment.

The Project Development Routemap (Routemap) is a structured and tested methodology used to set up projects for success. It ensures best practice and learning about the most common causes of project failure are considered at crucial early stages of development. In this module, we use the term ‘project’ to encompass projects, programmes and portfolios.

Routemap principles are core to any infrastructure project, and especially helpful where project teams undertake complex projects that test the limits of their organisational capability. It is a structured approach that brings project stakeholders together, to improve project-specific capabilities, enable governments and supply chains to maximise value for money and, where appropriate, increase opportunities for international investment. It gives confidence to people developing projects, those approving them, and those investing in them.

Since 2012, Routemap has been applied in the UK to projects totalling over £300bn, with significant and sustained impact on public policy, professional practice and economic benefit.²

Routemap aligns with the G20 Principles for the Infrastructure Project Preparation Phase (the G20 Principles), the United Nations Sustainable Development Goals (in particular, supporting environmental and social sustainability) and was identified by the Global Infrastructure Hub as a leading practice in good project preparation.



This international module was produced as part of the Global Infrastructure Programme³, sponsored by the UK’s Prosperity Fund⁴ to provide practical instruction on the Routemap. It builds on both UK and international experience and is tailored to the needs of audiences in a broad range of countries. The IPA would like to thank the United Kingdom’s Foreign, Commonwealth and Development Office and embassies, and the governments of Colombia and Indonesia who have provided invaluable assistance in the development of the Routemap for international use.

We hope this guidance is useful, practical and will improve the quality of infrastructure development in your country.

¹ The IPA is the centre of expertise for infrastructure and major projects, sitting at the heart of Government and reporting to the Cabinet Office and HM Treasury in the UK.

² The Project Development Routemap has been adapted from the UK Project Initiation Routemap, 2016, now replaced by Project Routemap, 2021: <https://www.gov.uk/government/publications/improving-infrastructure-delivery-project-initiation-routemap>.

³ This was a UK cross-government programme delivered by the FCDO, the IPA and the Department for Business Energy and Industrial Strategy. It aimed to enable the provision of sustainable and resilient infrastructure, as a critical enabler for economic development in middle-income countries.

⁴ The Prosperity Fund supported the UN Sustainable Development Goals and the 2015 UK Aid Strategy by promoting growth and prosperity in developing countries.

Introduction: Routemap Modules

The Routemap modules (modules) help you to identify and address gaps in capability across seven commonly challenging areas of project development. You should use these modules alongside the *Project Development Routemap for Infrastructure Projects: International Handbook*.⁵

The Handbook explains the Routemap methodology and describes the 10-step process for its application to projects, which results in a detailed action plan to close the gaps in project capability.

There are eight modules, one covering each of the following areas:

- Rationale
- Governance
- Execution Strategy
- Organisational Design & Development
- Procurement
- Risk Management
- Asset Management
- Systems Integration (UK module, included due to relevance for international audiences)

The module content applies to all types of infrastructure projects, including PPP and publicly funded projects. It supports project teams to identify risks to project outputs, and wider economic, environmental and social outcomes. It helps align projects to the G20 principles of ‘quality infrastructure’,⁶ internationally recognised standards like the

⁵ Infrastructure and Projects Authority’s Project Development Routemap for Infrastructure Projects: International Handbook, 2023: <https://www.gov.uk/government/publications/project-development-routemap>

⁶ These non-binding principles reflect the G20’s common strategic direction and aspiration for quality infrastructure investment: https://www.g20-insights.org/related_literature/g20-japan-principles-quality-infrastructure-investment/

International Finance Corporation Performance Standards,⁷ and the United Nations Sustainable Development Goals.

There are also examples of good practice to help project teams plan and improve project development. They come from the experience of UK public sector-driven infrastructure projects and from international authorities. Examples have been specifically selected for relevance to international audiences.

Routemap modules can be:

- useful when applying the Routemap 10-step process which is described in the Routemap handbook (the following diagram shows how the sections of the module support different steps in the process)
- a stand-alone resource to identify potential risks and improvements in project capability development, and relevant good practice from other projects

The modules are not a complete guide to project development, nor a substitute for business case development.⁸ They are based on real-world experience from large infrastructure projects and complement best practice found elsewhere. You need to consider each project’s individual characteristics and context and then you can identify what will be most helpful to the project.

⁷ See Section 1 and Appendix E of the Routemap Handbook for further detail on the importance of sustainability.

⁸ For detailed guidance on infrastructure business cases and their development process, see: Infrastructure and Projects Authority’s Infrastructure Business Case: International Guidance, 2022.

The Routemap modules are useful when applying the Routemap 10-step process which is described in the Handbook. The diagram below shows how the different sections of the modules (listed in the left column) can support the different steps in the process.

Module chapters	Setup				Diagnosis			Action planning		
	01 Whether to apply the Routemap	02 When to apply the Routemap	03 Routemap strategy	04 Planning the application	05 Information gathering	06 Conducting a gap analysis	07 Agreeing the findings	08 Developing recommendations	09 Action planning	10 Integrate and capture benefits
Characteristics of good practice			Comparing project information with the characteristics of good practice may be helpful in identifying areas of interest in the Routemap scope.			Comparing your project with these characteristics of good practice may help you identify areas for improvement.				
Useful documents			You may find it helpful to review these types of project documents , to define the areas of interest in the Routemap scope.		You may find these documents helpful to develop interview questions.	You may find it helpful to cross-check this document list against existing project documents, to help identify capability gaps.				
Typical findings						You may find it helpful to review these when articulating your findings .		If your findings contain statements like these, this Module could help strengthen capability.		
Considerations					This section lists a series of questions or considerations that can help you to validate the effectiveness of existing arrangements.			Working through these questions or considerations can help you understand the root causes of the findings and develop solutions.		
Good practice examples and suggested reading										You may find these good practice examples and suggested reading useful in developing actions to address capability gaps..

Procurement, and why it is important

Procurement is the dynamic, competitive process that identifies the best way to source goods and services for your project to achieve value for money.

Procurement is one of the biggest levers for embedding economic, environmental and social value into projects. This is achieved by delivering the intended project outcomes, but it also provides an opportunity to drive additional value through the way resources are used, labour procured and how stakeholders are engaged.

Your approach to procurement allows you to explore market opportunities and to implement strategies that deliver the best possible outcome to the organisation, its stakeholders, project affected persons, its customers, and the wider environment and society. Good procurement will allow you to create value through active participation and collaboration with the supply chain and beyond. Clients in particular must consider how this value, along with funders' ESG criteria, are cascaded into contracts and evaluated during tender and performance management and reporting.

The good practice in this module can support you in developing your procurement approach and applies to all infrastructure projects including PPP and publicly funded projects. It can help the client organisation to:

- define the work to be procured
- engage with the market and prepare them to respond
- optimise risk allocation between the client organisation and the market

⁹ These are the three principles supported by the World Trade Organisation, further information available at https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm

- identify the most appropriate procurement route

A procurement process should always be underpinned by these three principles⁹.

- **Equality** - How can the procurement process support equal opportunities and gender equality? How can the process support opportunities for small and medium sized enterprises? How can we encompass all relevant social, environmental and other equity issues in the evaluation process?
- **Fairness** - How will we treat bidders equally through the procurement process? How will we prevent bias or discrimination towards bidders?
- **Transparency** - How will we make the bid evaluation process transparent?

You will also need to consider how to integrate environmental, social and wider impacts with deliverability, affordability and value for money considerations. For example, in the UK it is mandatory for bidders to show how they contribute to net zero and social wellbeing.

Longer-term, multi-organisation and more complex projects will require additional effort and structure. In these cases, experienced technical specialists are invaluable in areas such as finance, contracting, risk management, environmental stewardship, social development, labour and working conditions, and land acquisition and resettlement.

The *market capability assessment* in the Routemap Handbook is a useful tool for project teams to examine the broader market's ability

and appetite to respond to requirements over the life of the infrastructure, as part of the Routemap 10-step process.

The IPA's *Infrastructure Business Case: International Guidance*¹⁰ provides additional guidance – largely within the Commercial Case - on procurement activities through the business case stages.

Citation

‘Public procurement refers to the purchase by governments and state-owned enterprises of goods, services and works. As public procurement accounts for a substantial portion of the taxpayers’ money, governments are expected to carry it out efficiently and with high standards of conduct in order to ensure high quality of service delivery and safeguard the public interest.’¹¹

(OECD)

¹⁰ Infrastructure and Projects Authority, *Infrastructure Business Case: International Guidance*, 2022.

¹¹ OECD, *Public Procurement*: <https://www.oecd.org/gov/public-procurement/>

Characteristics of effective procurement

Good procurement will both optimise the delivery of project requirements and clearly articulate the allocation of risk. It provides an opportunity to focus attention on economic, environmental and social value and prepare the market to deliver enhanced benefits for project-affected persons. Procurement can also drive innovation and collaboration through shared objectives and developing the right contracting model, designed to incentivise these behaviours.

The procurement approach should¹²:

- Identify the appropriate route to market to maximise value for money, considering social and environmental risks and opportunities
- Engage with advisors and the market in the pre-procurement phase to identify likely costs, risks and contingencies and to confirm the market has the appetite, capability and capacity to deliver the goods and services required
- Foster and support strategic engagement to develop market capability
- Be based on a shared understanding of key drivers, expected outcomes and objectives between the client and the supply chain, enabling them to align their efforts and work together collaboratively
- Specify the required environmental and social standards through the process, i.e. at early market engagements, in the key documentation, e.g. terms of reference, evaluation criteria etc.
- Enable the client and supply chain to understand the risks related to delivering the requirements, including environmental and social risks
- Allocate risk to the party best able to manage it. This should be based on an understanding of the risks best managed internally (based on the client's risk appetite) and the risks the market can better manage externally
- Develop a contracting model which incentivises collaboration and innovation where desired, e.g. through financial pain/gain based on performance against contractual Key Performance Indicators
- Adopt and comply with a clear and transparent procurement process (including approvals and assurances)
- Recognise shared reputational impacts, benefits, risks and rewards
- Be completely compliant with procurement regulation and legislation, so that you avoid unnecessary challenges and wasted effort
- Develop clear and appropriate payment and performance mechanisms
- Support the project's overall execution strategy and client model.

¹² Action 9 of the Infrastructure Business Case: International Guidance, 2022, contains further principles of good procurement approaches for infrastructure. Please refer to this guidance for

more detail, and how procurement fits into the 5 case model approach to developing business cases

Characteristics of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested reading

Pillars of effective procurement

Effective procurement is characterised by six pillars:

Pillar 1: Understand the requirements

- Understand the project's requirements and expected outcomes and benefits, including the wider socio-economic and environmental outcomes that result as a by-product of delivery.
- The procurement strategy will need to develop in line with both the execution and other operational strategies, along with any ESG criteria (if applicable)

Pillar 2: Engage the market

- Engage the market to understand appetite, capability and capacity to deliver the requirements, e.g. can it meet the standards for environmental and social sustainability
- Potential suppliers can note their interest and you can learn from their drivers and outcomes

Pillar 3: Developing work packages

- Break up the works into practical and deliverable packages which make them manageable for the market but still meet the client's needs.

Pillar 4: Selecting the contracting model

- Choose the best model for allocating risk (the contracting model) between the client and the market.
- It should align with each party's risk appetite, their ability to manage risks, and the client model.
- Consider how the contracting model allows for opportunity, innovation and collaboration

Pillar 5: Choosing the route to market

- Choose the route to market that the client will use to contract with suppliers for goods and services, e.g. single stage procurement, multi-stage or framework
- Select suppliers using evaluation criteria based on project outcomes, ability to deliver social and environmental value, collaboration, behaviours and alignment to organisational values, any relevant ESG criteria, and value for money.

Pillar 6: Communicating the outcome

- Quantify and measure success, including how the procurement strategy contributes to the overall outcomes.
- Ensure there is a plan for performance management that drives and incentivises the desired behaviour and outcomes. Capture and apply lessons learned.
- Ensure that any relevant ESG criteria are tracked and reported on.

Together these six pillars underpin an effective procurement approach. If one pillar is missing or out of balance, the procurement may be inefficient and may lead to greater risk or loss of value. Reviewing your procurement approach against these pillars can help to identify potential areas for improvement.

The pillars are expanded in the *Considerations* section of this module.

In Routemap, these pillars support **(Step 6) – Gap analysis**. Considering them in the context of your current procurement arrangements can help you to identify areas for improvement.

Useful documents

These documents, components or reports usually contain information on procurement arrangements. They may be helpful when reviewing and developing the procurement approach for your project.

- Procurement plan and strategy
- Invitation to tender and bid selection criteria
- Asset management or operational strategies
- Sponsor requirements
- Business case
- Execution strategy
- Corporate procurement policies
- Existing framework agreements
- Risk management strategy
- Organisational design and development strategy
- Environmental, health and safety strategies
- Social value/corporate responsibility strategy
- Stakeholder engagement plan
- Sustainable procurement plan

You may find it useful to review these documents to identify the 'areas of interest' when scoping a Routemap **(Step 3)** – *Routemap strategy*.

These documents may also be helpful in **(Step 6)** – *Gap analysis*. When cross-checked against existing project documentation, they may help to identify capability gaps.

Typical findings related to procurement

This list describes typical issues that might arise during project development, and would indicate that the approach to developing the project's procurement needs improvement:

- Contract incentives seem to misalign with sponsor's requirements or client model, so the supply chain does not perform as you would expect.
- Market appetite for the project is unproven.
- The client or market organisations do not have much experience of the proposed procurement model. This means that they may need capabilities they do not have.
- The client or market organisations do not understand the extent of capability development required by the market to deliver the project.
- The client over-prescribes how the supply chain should do the work, so it may not have the opportunity to innovate or add value.
- The procurement process (including the market engagement, terms of reference and bid evaluation criteria) does not make the environmental and social requirements sufficiently clear or set ESG criteria for suppliers. This leads bidders to submit sub-standard proposals or to be ill-prepared to manage the associated downstream risks.

During Routemap, these example findings may be helpful when identifying issues and articulating your own findings (**Step 6**) – *Gap analysis*.

If your findings contain statements like these, this module could help you to develop recommendations to strengthen capability (**Step 8**) – *Developing recommendations*.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Considerations for effective procurement

The considerations questions help you understand the root causes of the capability gaps and suggest improvements. You may not need to review all the considerations, just use the most relevant ones for your project.

These questions will help you:

- to review and validate your existing procurement strategy
- to target areas for improvement
- to test the design of a new procurement strategy.

The questions are grouped around the six pillars of effective procurement: understand and communicate requirements; engage the market; package the works; choose the risk allocation model; choose the route to market; and communicate the benefits.

You may need to revisit the procurement strategy as you develop the requirements and execution strategy, so it will be useful for you to review this list of considerations again at major decision, transition or approval points.

During Routemap, working through these considerations can help you to validate the effectiveness of existing arrangements **(Step 5)** – *Information gathering*.

They can also help you identify reasons for the findings and ways to address them in **(Step 8)** - *Developing recommendations*.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Pillar 1: Understand the requirements

Key areas / considerations

Requirements and benefits

- What is the status of the business case?
- Are the requirements well-articulated and easy to understand?
- Are the requirements around environmental and social standards and sustainability agreed and clearly communicated, including ESG criteria?
- Has legal advice been sought to ensure the environmental and social standards for the project comply with regulation?
- Are policies in place regarding child labour and modern slavery in the supply chain?
- Has the client undertaken a capability assessment to inform the procurement strategy and scope? Does the client team have the capability to manage the procurement strategy?
- Has that assessment considered specific capabilities relating to environmental and social risk management?
- Have minimum levels of environmental and social governance been set for suppliers?
- Will the client model enable delivery of the requirements?
- Are there procurement laws or a policy document that govern the procurement activities?
- If there is a policy document, does it include requirements around transparency?
- Is there a clear timeline for the procurement activities including responses from bidders?
- Is there a balanced scorecard so that you can prioritise, evaluate and communicate requirements?
- Have the risks been identified that may impact the delivery of the requirements? Do these include environmental and social risks?
- Are third party obligations clear (including funders/regulators/assurance bodies)?
- Is the interface with the asset management and operational strategy clear?
- What responsibility and liability does the supply chain have for continuation of operations?
- Is the corporate risk strategy clear, and how will it influence procurement activity?
- What is the impact of project funding/financing on procurement options? Are these considered in the commercial case of the business case?

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Pillar 2: Engage the market

Key areas / considerations

Market relationship

- Does the client (i.e. the procuring authority) understand the marketplace for the goods and services it needs?
- Has the client analysed their need against the market's capacity to supply?
- What is the client's experience of the market and its ability to deliver what is needed locally?
- Does the market have the ability to meet environmental and social standards? How can the client help businesses reach these standards?
- Does the client understand the importance of engaging with small to medium sized enterprises to drive economic and social value (this can deliver value to the local economy and community by creating resilience and inclusive growth)?
- How does the market perceive the client and the client's maturity level?
- Does the client have a long-term strategic relationship with the supply chain e.g. partnership agreements?
- Is there a visible programme of future work that could support a more strategic relationship with suppliers? Does the client understand how and where the market can most add value to the project?
- Does the market offer a service approach the client has not previously considered?
- What key factors will enable a strategic relationship with the market?

Market engagement

- Has the client identified a target supply chain? Does it have suitable capabilities and capacity? Is the client confident that there will be a good level of competition for the project?
- Does the procurement process enable the client to engage with a wide range of market providers? e.g. specialist environmental and social service providers, small and medium-sized enterprises.
- Is finance available to support the proposed model, e.g. bond market or banks, and if not, who will finance it? What are the roles of the MDBs and Donor Agencies?
- How could market engagement be improved? Does market engagement demonstrate the client's commitment to transparency and fair treatment of bidders?

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Key areas / considerations

- Has the client engaged the market about their capability concerning any relevant ESG criteria, including:
 - Their past track record of delivering against ESG criteria
 - Their ability to decarbonise their own operations
 - Their approach to reporting
- Are there any environmental and social safeguard standards that need skillsets not typically provided by the existing market? e.g. addressing sexual exploitation and abuse, linked to project development? How can you identify these early in the process, to help raise awareness across the market?
- Does the client have an initial understanding of the market appetite that needs to be generated and their preferred allocation of risk? (see Pillar 4)
- What market engagement approaches have other clients successfully adopted?
- Has the client considered a variety of market engagement methods? e.g. meetings with the market, issuing requests for information?
- Has the client allowed enough time in the schedule for meaningful market engagement? e.g. to allow time for joint ventures/consortia to form, particularly involving international and local bidders.
- Are there legislative or statutory provisions that the client needs to meet before taking the proposal to market engagement stage?
- Has the client tested the outline packaging and contracting strategy with the market?
- Can the client take confidence from the market engagement response to its procurement opportunities?
- Has the client thought about how its market engagement activity may affect existing, incumbent relationships?
- Has the client thought about how it will engage the sub-tier supply chain – has it tested the procurement strategy with them?

Market appetite

- Does the client understand the appetite of the market to meet its demand (including for delivering services in line with environmental and social standards)?
- If market appetite is lower than expected, does the client know why? Having found out the reasons, how far is the Authority willing to go to de-risk the project? e.g. allowing a longer procurement schedule to allow joint ventures and consortia to form, avoiding changes mid-way through the procurement process etc.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Key areas / considerations

- Has the client identified any steps to encourage and increase market appetite?
- Are any other clients procuring services on a similar timeline that may use an identical supply chain? What impact could this have on market appetite?
- What is the policy for managing unsolicited bids? If unsolicited bids are allowed, how is value for money ensured?¹³
- Does the procurement strategy recognise 2nd tier/sub-tier supply chain members and set out how they can be engaged through the procurement?
- Is it clear how investment will result in corporate risk and reward?
- Do the market engagement results give the client confidence in the market appetite for its procurement opportunities?
- Does the procurement process allow the client to avoid surprises by tracking appetite? and gain understanding of the reasons for any changes?
- Has the client tested the outline commercial models within the marketplace?
- Is the relationship between asset creation, operation and market appetite clear?

¹³ Competitive procurement promotes value for money, with competitive pressure driving prices down and quality up; it also aids transparency (with all bidders being treated equally). If unsolicited proposals and/or private offers are allowed, they should still be subject to the strategic, economic, commercial, financial and management analysis described in the IPA's Infrastructure Business Case: International Guidance, 2022, and some competitive pressure should be retained.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Pillar 3: Developing work packages

Key areas / considerations

Risk approach

- Can the client clearly describe and evaluate the project risks? Does this include environmental and social risks?
- Has the client conducted an environmental and social impact assessment (ESIA) and developed a related environmental and social management plan (ESMP) which covers the full range of potential risks? Are they part of the key procurement documents?
- Are the responsibilities for risk management clearly defined?
- Are risks allocated to the parties best able to manage them? Are there any risks where the management should be shared?
- How much risk should the client manage in-house and how much should it pass on to the supply chain? How should the client transfer this risk?
- Is the risk allocation aligned with the balanced scorecard measures?
- Does the risk allocation align with the cost certainty and schedule requirements?
- Is risk allocation clear and sustainable?
- Is risk and reward transfer equitably balanced?
- Has the client tested its proposed risk transfer with the market?
- Does the risk transfer strategy align with the corporate risk approach, including 3rd party requirements such as regulations?
- Does the risk allocation and management strategy reflect the capability and complexity assessments?

Interfaces between supply chain partners

- Has the client considered the soft (non-contractual) and hard (contractual) interfaces created by the packaging strategy?
- How are environmental and social standards integrated into consideration of these interfaces? Is it clear which party is responsible for ensuring compliance with these standards?
- Does the client organisation have a structure that can manage the technical/commercial/operational interfaces that the packaging strategy will create?

Characteristics
of good practice

Useful documents

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reading

-
- What approaches, e.g. alliancing or partnering arrangements, would help soften contractual interfaces and encourage collaboration?
 - How will the client manage the scope boundaries and the risks associated with interdependencies between packages?
 - How has the client scoped and sized the packages so that it can manage the interfaces?
-

Packaging strategy

- Does the packaging strategy encompass the entire scope?
 - Has the feedback from the market engagement informed the packaging strategy? When the packaging strategy changes, does the client go back to the market for input to test its appetite?
 - Does the packaging strategy bundle the works appropriately?
 - Has the client taken the timing and availability of funding into account when it structured the work packages?
 - Is there an open dialogue with the suppliers throughout development and delivery? This communication should be two-way, to take advantage of supplier's expertise and to foster a culture of open and collaborative engagement throughout from the start of the project lifecycle
 - Do the suppliers have the skills and capabilities required for different works, so they can price themselves competitively and the client has confidence in their ability to perform?
 - Are the packages of work structured so that they can be easily commissioned and transferred at the start of operation?
 - What are the provisions for change, contract variation and contract termination?
 - Are the work package sizes appropriate for the client's corporate risk philosophy?
 - Do the economic conditions have an impact on the packaging strategy?
 - Would there be the revenue benefits from the early transfer of assets into operation?
-

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Pillar 4: Selecting the contracting model

Key areas / considerations

Contracting approaches

- Is there a suitable mix of contracting solutions to realise the benefits?
- Is the form of contract as close to industry standard as possible? Does the market understand it? This will help clarify client and supply chain obligations and risks.
- Do contracts incorporate a balanced scorecard with clear and measurable parameters? Are there appropriate key performance indicators (KPI's)? Are there KPIs for environmental and social risks and impacts?
- Do the contracts establish the required levels of control?
- Will the incentives and collaboration tools encourage behaviours that will realise the benefits?
- Does the client want a transactional or relational relationship with the market?
- Does the client's commercial strategy enable all parties to meet their commercial needs?
- What is the proposed extent/duration of the desired relationship?
- Is it clear who owns each element of project design?
- What opportunity/benefit is there for the supply chain to contribute to design?

Testing the contracting strategy

- Has the client adopted this approach before? If so, what did they learn?
- What are the client's and supply chain's attitudes to risk? Have these been considered in the contracting strategy?
- Does the contracting strategy complement the packaging strategy?
- Does the contracting strategy cover all physical and contractual interfaces?
- Is the client's organisation structure sufficient to effectively administer the proposed contracting strategy?
- Does the contracting strategy correspond with the sponsor and client priorities, including environmental and social standards and sustainable development priorities?

Characteristics
of good practice

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Considerations

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reading

Key areas / considerations

- Is the strategy deliverable within the project's budget constraints?
- Is there a mechanism in place to drive fair payment practices throughout the supply chain?

Managing delivery

- During the contract period, is it clear how the project is managed to control costs and avoid/resolve disputes?
- As construction progresses, is it clear how all parties will report on and monitor the project? Is reporting aligned with the agreed environmental and social standards, performance management mechanisms, payment mechanisms and any risk sharing?
- What are the remedies or penalties for non-performance, non-compliance with environmental or social standards, dispute resolution and contract termination?
- Has the client considered fair payment practices throughout the supply chain?
- Has the client thought through how to oversee testing and commissioning procedures, production of operation/maintenance manuals and as-built records?
- How will social and environmental good practices integrate throughout the project delivery lifecycle?
- How will safeguarding risks be managed appropriately across project delivery? What are the penalties for non-performance both during construction (e.g. liquidated damages) and operational phases (e.g. deductions)?
- Have the exit strategies been considered?

Characteristics
of good practice

Useful documents

Typical findings

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Pillar 5: Choosing the route to market

Key areas / considerations

Route(s) to Market

- Has the client considered who designs the procurement approach and who owns this design?
- Have all the project requirements, including the agreed environmental and social standard, been considered? Will the proposed procurement route(s) support their achievement?
- Does the client recognise that all three routes (single stage, multi-stage and framework) may be needed to realise the benefits, especially for major programmes of work? Has the client for example, considered setting up a supplier framework?
- Do the procurement routes proposed enable the client to optimally allocate the risks with the market?
- Do the procurement routes proposed factor in market feedback and the decisions on packaging and contracting?
- Has the client thought through the effort required, efficiency and effectiveness when selecting the route?
- Is there enough time to secure the optimal route versus desire to allocate risk, e.g. within the annual funding cycle?
- Does the procurement approach meet all of the legal and corporate regulatory obligations?
- Does the chosen route provide the most effective basis for identifying/managing risk, and enabling innovation from the supply chain?
- Does the client understand the regulations that apply to the procurement of the requirements?

Evaluation process

- Do the evaluation criteria reflect the business case and the required capability, culture and behaviours?
- Do the evaluation criteria treat all bidders fairly? and have they been published in advance demonstrating the project's commitment to transparency?
- Does procurement have evaluation criteria in place to support equal opportunities and non-discrimination?
- Are there specific evaluation criteria relating to environmental and social requirements? Do they consider track record of performance against environmental and social standards? Are these aligned with the project business case and environmental and social management plan?
- Are there evaluation criteria relating to organisational cultural alignment with values, and behavioural competencies (such as collaboration)?

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Key areas / considerations

- Would it be useful to have a third-party expert panel, to act as advisor or as a compliance unit?
- Does the evaluation process include environmental and social advisors as part of the evaluation panel?¹⁴
- Has the client tested the evaluation model? Is it appropriate and clearly understood?
- Does the market understand the process?
- Does the process comply with legislative criteria?
- Does the process comply with internal governance procedures?
- Does the process comply with internationally accepted standards in transparency and good governance?
- Is the length of process commensurate with the risk/reward associated with the procurement?
- What is the process for testing if unsolicited bids present good value for money?
- Will the evaluation provide adequate feedback to unsuccessful parties?
- What is the process for settling legal disputes if the award is challenged?

¹⁴ An expert panel can have specialisms that are specific to each project. They might include specialisms such as environmental impact, project safety, social development, or specific technical expertise of the type of infrastructure.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Pillar 6: Communicating the outcome

Key areas / considerations

Measuring the benefits

- Has a mechanism been established to measure the benefits of the procurement exercise?
 - How will the supply chain's performance be measured, assured and fed back, including with reference to social and environmental risk management? Does this performance measurement drive the desired kind of behaviours and outcomes? What are the audit rights of the authority with regards to the main and sub-contractors?
 - How much of the monitoring of contractual KPIs is done on a self-reporting basis? Are there procedures in place to verify self-reported KPIs?
 - Is there a mechanism to ensure compliance with relevant ESG criteria?
 - What is the approach to on-going relationship management including governance?
 - Is there a mechanism to obtain external data to benchmark performance/benefits delivered?
-

Lessons learned and feedback

- How will the procurement process capture the lessons learned, and feedback on them during the delivery phase?
 - Is there enough time at the end of the project to reflect and evaluate?
 - How will the client organisation communicate what lessons came from the project, both within its own organisation and to the supply chain/broader industry? How will the client organisation make improvements?
-

Good practice examples

This section offers supporting material to plan improvements for effective procurement.

We give examples of good practice to help you:

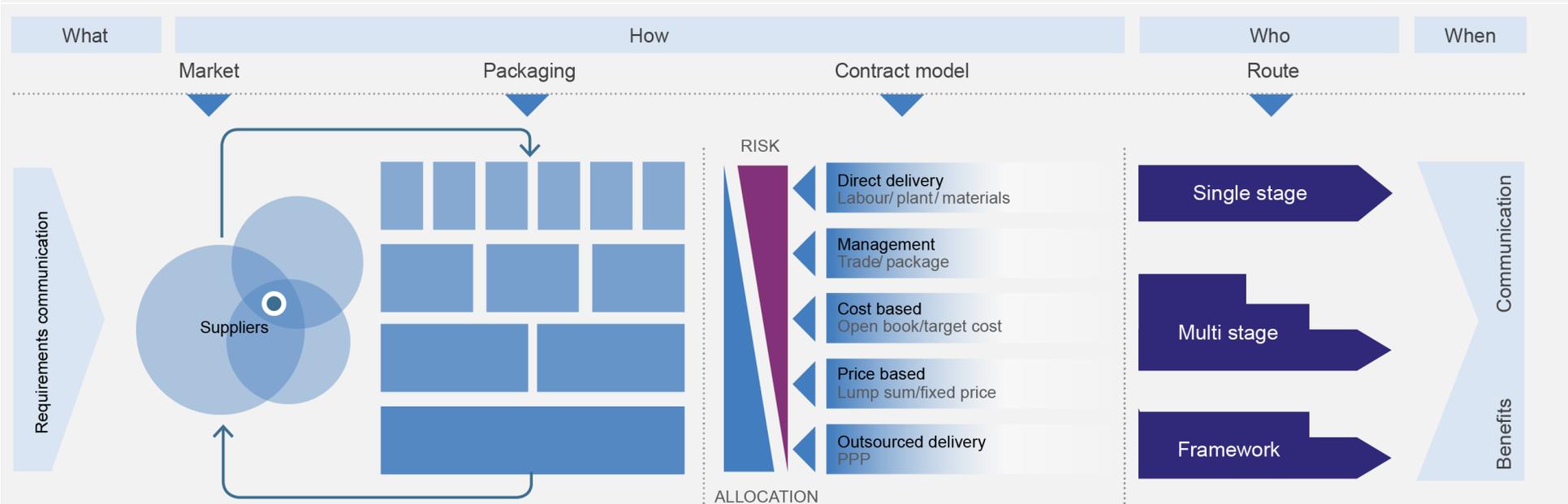
1. Appreciate the typical flows and structures in a procurement model
2. Engage the market effectively
- 3/4. Develop the packaging strategy
5. Appreciate how risk allocation informs the procurement approach and contracting model
6. Understand the alternative contracting models
7. Select the appropriate contracting model based on risk and complexity of requirement
8. Consider the role the private sector can play in financing and delivering infrastructure projects
9. Compare the alternative routes to market
- 10/11. Use procurement to drive economic, environmental, and social value

These examples will not be relevant to every project. They are a collection of good practice that may be helpful, in specific circumstances. It is important to assess and tailor any good practice to the specific project and its wider context.

Likewise, the *suggested reading* is a starting point for further research. You should look for other sources relevant for your project, to support capability strengthening.

Within Routemap, the examples of good practice support capability strengthening in **(Step 9)** – *Action planning*.

1. Good practice: Procurement model overview



The diagram above illustrates the stages of procurement. You need to understand *what* the project requires, *how* the client sees its position within the market, *who* can supply the service, and *when* is the best time to approach the market.

The model shows how the client and the market work together to determine the best packaging and contracting model based on risk, complexity, capability and technical requirements. The approach balances risk benefit analysis, to inform decisions on the Contracting Model, based on the approach to technical, commercial, environmental and social requirements, and the market's ability to deliver the requirements.

There are many labels used to describe different procurement models (design/build, alliances, ECI, two-stage, etc.). More often than not, these just serve to characterise different approaches to contracting, payment type, incentivisation, design responsibility and risk transfer. The categories under *contract model* above show the generic range, based on indicative risk allocation from client to supplier. This is also indicative of the range from an input specification approach to an output specification approach: a direct delivery contract is more based on the inputs supplied, whereas outsourced delivery or fixed price delivery is more focused on delivering specific outputs.

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

2. Good practice: Engaging the market effectively

Engagement with the market has a dual benefit:

- **to the client** - understanding what the market can or cannot do (capability), and what the market will or will not bear (capacity) in pursuit of an opportunity
- **to the suppliers** - insight into future opportunities, as well as the risks and rewards associated with that opportunity.

Successful market engagement allows the supply chain to begin planning their resources in anticipation, i.e. get themselves ready to supply, particularly in cases where new or innovative approaches are required. More importantly, it enables the client to identify potential risks in its packaging strategy.

The market capability assessment in the *Routemap Handbook* will provide a good characterisation of the wider marketplace.

A client organisation needs to consider and reflect on the market environment in which it operates, and the maturity of its strategic relationships. Once it has done this, it can test the market with various options, or more specifically, gauge the market's reaction e.g. to risk transference, technical solutions, the commercial and operational interfaces created by the packaging strategy etc.

The greater the maturity level of strategic market relationships, the greater the possibility of achieving an enhanced offering and of nurturing market appetite over the longer term.

Appetite in the market is key to successfully procuring and delivering a project. The client will achieve better value for money if there is appetite in the market, because responding bidders will be more competitive.

3. Good practice: Developing the packaging strategy (i)

You need to fully consider and prioritise the technical aspects of the scope when packaging the requirements.

If the packaging strategy involves multiple packages, then the client may consider using a *clustering model* which would make the procurement process more efficient. If there are common components or commodities, then the client may consider a *common components* strategy to benefit from a standardised approach.

Clustering

Using clustering or categories enables standard sets of contract solutions (see contracting model). Clustering or categorisation can provide consistency in the tendering process, allowing bidders to become familiar with documents, risk allocation, pricing requirements and the criteria used in assessing capacity and capability. It is important to cluster or categorise similar elements of work, design or service at a sufficiently high level, to allow effective communication with the target market(s).

The key considerations when grouping scope into clusters or categories are:

- The technical aspects of delivery including methodology and technologies
- The timing of the delivery
- The physical location of the work or service
- The economic benefits
- That the market exists, is recognisable and able to provide healthy competition
- The capacity and resource are available in the supply chain to deliver the required quantity and quality

Common components

There are economic and delivery advantages to considering common components and commodities. It is important to consider this standardisation early in the development of the procurement strategy. Some of the benefits of a common component strategy, as a sub-set of the overall packaging strategy, include:

- Having a co-ordinated approach to certain components
- Potential for consistent design
- Improved quality
- Reduced cost and need for testing
- Controlled capacity and delivery

Characteristics of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested reading

4. Good practice: Developing the packaging strategy (ii)

For many infrastructure projects the decision as to how the works are packaged is complex. Typically, the optimum packaging (or contract bundling) approach needs to balance potentially conflicting construction, commercial and market issues.

Mapping these competing objectives in a simple matrix (see example below) can be a useful way of ensuring the procurement strategy takes into account some of these broader objectives, which can often get lost in the drive to optimise commercial considerations.

Work Breakdown Structure (WBS) ...or similar functional breakdown of activities	Construction/engineering							Commercial			Market			Issues
	Geography or asset types?	Scope for building off-site?	Interdependency/complexity?	Whole life impact?	Safety impact?	Optimum design transfer?	Outcome based specification?	Procurement model?	Contract value?	Impacts on risk allocation?	Impacts on market appetite?	Market maturity / capability?	Depth of supply chain?	
Employers design	
Surveys & investigations	
Civil engineering	
Monitoring and evaluation systems	Asset	High >10%	High	High	None	RIBA B	Yes	Design and build	£100k	High	None	High	1 st and 2 nd tier	Standard components may be better VFM if procured as a separate contract
Systems integration	
Maintenance services	
Etc...	

Notes:

Geography vs asset classes	Would this package be business wide, regional or based on asset type?	Outcome based specification	As a discrete package could it be specified in output terms (e.g. "passengers per hour" approach)?
Scope for build off-site (DFMA potential)	Does the package present a low, med or high likelihood of being built offsite?	Optimum procurement model	Notwithstanding package size and integration what would the optimum procurement strategy be?
Interdependency/Integration / Complexity	Does this package have a low, med or high integration requirement with other packages and as such what is the level of complexity?	Size / Volume (£m)	Package value - what would be the optimum size for the market based on risk and capacity?
Whole life consideration	What is the impact on whole life outcomes?	Risk allocation	Is sponsor/client risk best managed through large or small packages – impact on client resourcing?
Safety specific considerations	In delivery of the package are there any unusual safety considerations?	Likely market appetite	Is there likely to be market interest and sufficient competition?
Design ownership and transfer	Who will own the design and will there be a transfer - if so when will this happen?	Market capacity	Is there good capacity in the market to deliver the scope or very few suppliers / organisations with the capability?
		Sub-tier model	Will sub-tier suppliers be procured directly by the client or through a 1st tier?

Characteristics of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested reading

5. Good practice: Risk allocation

You cannot develop the optimum procurement approach and contracting model without first considering the allocation of risk. For example, ‘price certainty’ is bought by paying the contractor to accept the risk of fixing a price in a commercial, changing market. You must assess the risks involved in key aspects of delivery, so that you can work out if it is more economical for the sponsor, client or contractor to manage them. These decisions need to be aligned to the risk management capability in each organisation, and the client model that you are using for delivery.

It is common practice to construct a risk allocation matrix to inform these decisions, as set out in the example below. It may also be helpful to refer to the Risk Allocation model in Schedule 2: Workshops of the IPA’s Infrastructure Business Case: International Guidance, 2022.

Example risk allocation table	Potential allocations			Key issues
	Sponsor/Asset Mngr	Client	Supply chain	
Policy risk	✓			
Sponsor requirements	✓			
Planning and consents		✓		
Design		✓		
Construction (to cost and time)			✓	
Availability and performance	✓			
Commissioning			✓	
Procurement risks		✓		
Technology and obsolescence risks	✓			Low level technology...
Funding (or financing)	✓			
Legislative and regulations	✓	✓	✓	
Other risks				

The preferred risk allocation will then need to be considered in relation to other criteria to determine the preferred Contract Model.

Other criteria are reflected in the alternative contracting models set out on the following pages and may be used in a format as shown in the illustration below.

Contract Model Option 1, 2, 3 etc

Selection criteria	Speed – design and construction	Cost certainty	Dealing with complexity	Supply Chain Innovation	Capacity for variations	Incentivised performance	Separation of design and management
	High	Dark Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Light Blue	Dark Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	Light Blue	Light Blue	Dark Blue	Light Blue	Light Blue	Light Blue	Light Blue
Low	Light Blue	Light Blue	Light Blue	Dark Blue	Light Blue	Light Blue	Light Blue

Characteristics of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested reading

6. Good practice: Alternative contracting models

The different contracting models illustrated in the table below represent a spectrum of risk allocation. The table gives some basic advice about contract choice.

Model and features	Pro	Con	Considerations
<p>Direct Delivery The works are constructed by directly employed in-house management and labour using owned or hired plant and materials purchased on a supply only basis.</p> <ul style="list-style-type: none"> ■ Expertise in-house ■ Clear requirements ■ Limited complexity and innovation ■ Majority of risk held internally ■ Confidence in budget 	<ul style="list-style-type: none"> ■ Subject matter expertise ■ Prior experience ■ Prior cost, quality and schedule indicators and learning 	<ul style="list-style-type: none"> ■ Sufficient internal resource (labour, plant, materials) for delivery ■ Business continuity as majority of risk resides internally ■ Reputational considerations 	<ul style="list-style-type: none"> ■ Capacity ■ Learning from prior projects is available and utilised
<p>Management A management contractor is engaged by the client to manage the construction process. The management contractor has direct contractual links with all the works contractors and is responsible for all the construction works. The management contractor is paid a fee on top of the construction costs for the services provided.</p> <ul style="list-style-type: none"> ■ Need specialist expertise ■ Need support defining requirements ■ Project lends itself to clear packages ■ Risk split across trades but ultimate integration and management with client ■ Budget may be released in gateways 	<ul style="list-style-type: none"> ■ Quicker completion if no complexity, as the management contractor is incentivised to get the work done quickly ■ High availability of management services in the market ■ Enables performance of supply chain to core strengths so reduces "learning curve" risks 	<ul style="list-style-type: none"> ■ Relationship between Management Contractor lacks definition so risk transfer does not occur as intended ■ Trade contracts exploit interfaces/dependencies ■ Risk transfer does not occur as intended ■ Budgets and programme/s are not fixed 	<ul style="list-style-type: none"> ■ Scope any management appointments clearly and define responsibilities of Construction Manager if external appointment ■ Plan interfaces and dependencies ■ Share internal data with construction manager
<p>Cost Based The works are designed and/or constructed by a main contractor that is reimbursed for all of its allowed costs plus additional payment to allow for a profit. The arrangement can be incentivised via a target price.</p> <ul style="list-style-type: none"> ■ Performance on quality and schedule to be enhanced through commercial incentives ■ Reliant on Market knowledge for complex elements ■ Shared risk profile 	<ul style="list-style-type: none"> ■ Can support collaborative initiatives if correctly implemented ■ Clear visibility of actual costs to support benchmarking and efficiency challenges ■ Proactive management of risk if correctly managed 	<ul style="list-style-type: none"> ■ Inadequate client understanding of risk transfer erodes incentive scheme ■ Incorrect or inflexible performance or commercial measures ■ Collaborative in letter not in spirit ■ Reactive management of risk 	<ul style="list-style-type: none"> ■ Does the client have cost data to make informed decisions, if not then seek this out or seek advice ■ KPIs/commercial incentive needs validation against balanced scorecard ■ Informed understanding of optimal level of risk transfer ■ Requires engagement of client

Characteristics of good practice	Useful documents	Typical findings	Considerations	Good practice examples and suggested reading
----------------------------------	------------------	------------------	----------------	--

Model and features	Pro	Con	Considerations
<p>Price Based The works are designed and/or constructed by a main contractor that is paid based on tendered prices.</p> <ul style="list-style-type: none"> Price key driver Commodity or prior category delivery Limited complexity Risk allocated and included in price 	<ul style="list-style-type: none"> Client familiarity with subject matter Simple procurement process Speed to market, reduced negotiation time Price certainty if scope is locked down 	<ul style="list-style-type: none"> Least likely to consider balanced scorecard although not irrelevant Quality considerations not captured in tender Price risk entirely with contractor (subject of course to client change) 	<ul style="list-style-type: none"> If used for complex/innovative projects then change erodes price risk transfer No regard to benchmarks Has to be clear scope and known or limited variations
<p>Outsourced The client transfers ownership of an asset for an extended period of time, such as under a PFI arrangement. An organisation with design, construction, maintenance and operational expertise and financing capability is appointed under a single contract to design, build, operate and maintain the asset.</p> <ul style="list-style-type: none"> Complexity or frontier in scale and in scope Client unable to manage and/or carry delivery risk 	<ul style="list-style-type: none"> Full transfer of delivery and operational risks Life of project considered in detail at outset as contract needs to cover extended period Temporary transfer of financial risk to private sector 	<ul style="list-style-type: none"> Deal complexity Time to market and costs of preparation/negotiation Obtaining opex value for money Sustainability of contractor delivery entity 	<ul style="list-style-type: none"> Whole-life considerations to be consistent in both design & operations phase to get an availability regime and opex costs that deliver Client to consider where it can support process and generate value e.g. planning and regulatory. Risk transfer should not engender "sit on hands" approach Client carries reputational risk Client underestimates resource to manage contract

Whenever feasible, the contracting model should be kept as simple as possible and have a consistent, logical approach. As described earlier, it is important for the client to have worked through (in detail) its desired risk allocation, so that it is clear who is best placed to manage the appropriate risks. This risk allocation exercise will have led to clarity on which interface risks are best managed by each of the parties.

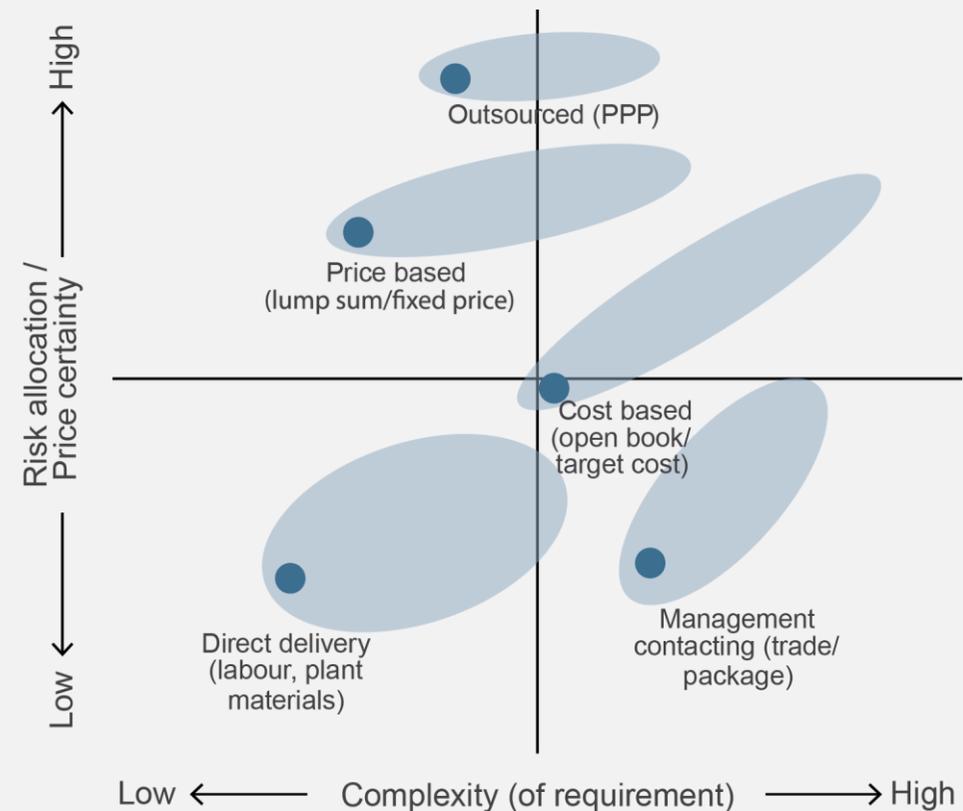
The contract models represented in the table above have different risk profiles, which are applicable to different programmes of different complexity. To provide guidance on the relative 'uses' of each of the contract models, the diagram on the next page has been developed.

7. Good practice: Selecting the appropriate contracting model based on risk and complexity of requirement

The selection of an appropriate contract model will be informed by consideration of: requirement, market, packaging, risk appetite etc., as set out in this module.

It should also take into account a wider assessment of complexity/capability, target operating model and delivery model considerations (see also Governance module).

The chart shown here illustrates how two of these elements (risk and complexity of requirement) relate to alternative contract models.



Characteristics of good practice

Useful documents

Typical findings

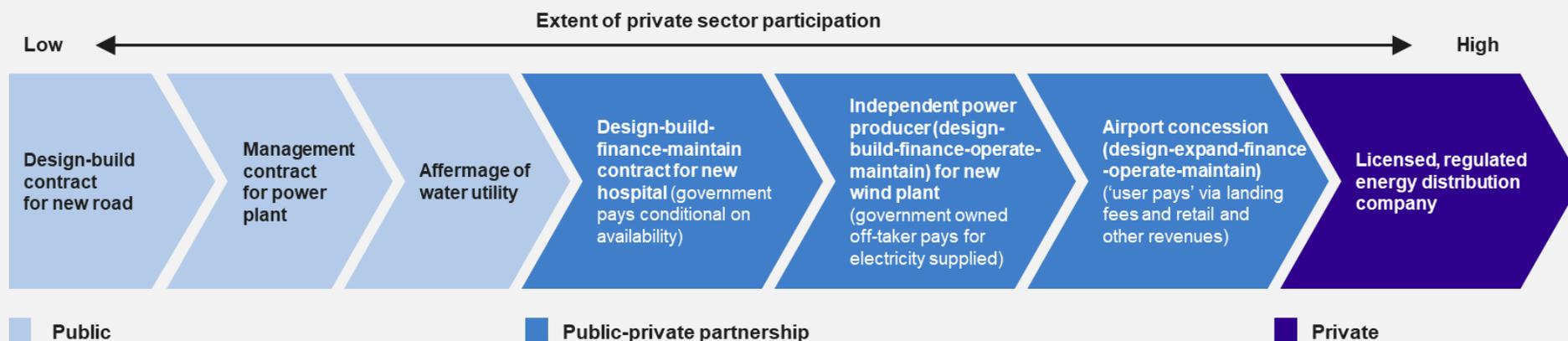
Considerations

Good practice examples and suggested reading

8. Good practice: Private sector participation

The private sector can play a vital role in financing and delivering infrastructure projects. PPPs are not the only way the private sector can be involved in infrastructure, as is illustrated here.

Examples of PPP contract types



Note on terminology used in this good practice example:

Affermage – affermage contracts are generally public-private sector arrangements, under which the private operator is responsible for operating and maintaining the utility but not for financing the investment.

Offtaker – the off-taker is the party who buys the product being produced by the project, or who uses the services being sold by the project, e.g. electricity, mined material or a pipeline.

Source: PPP Knowledge Lab: <https://pppknowledgelab.org/guide/sections/6-ppp-contract-types-and-terminology>

9. Good practice: Routes to market

The term route is used in this module to describe the selection process adopted by the client to determine the supplier. There are a variety of routes to market available. The single and multistage routes can be defined by the number of formal or informal supplier down selection steps that are taken. The Framework route can be subject to down selections but, most commonly, results in multiple contract awards being made to provide the facility.

■ Single stage

A more traditional route. To be effective, the client needs to have absolute clarity on requirements. This is suitable for less complex procurements or ones with unique attributes;

■ Multi Stage

Suitable where there is a lack of definition on what is required. An initial filtering stage is needed to determine whether the supplier is fit to supply. A subsequent stage/s determines the delivery and price elements. Unless carefully structured this route may increase the cost of bidding for both the supply chain and the client. This approach provides the opportunity for the client to work with the supply chain on requirements and scope definition;

■ Framework

Suitable where there is a lack of definition on what is required. An initial filtering stage is needed to determine whether the entity is fit to supply. A subsequent stage/s determines the delivery and price elements. Unless carefully structured this route may increase the cost of bidding for both the supply chain and the client. This approach facilitates engagement with and contribution from the supply chain in the development of project scope and detail. This approach lends itself to long term relationships where repeat work is required but actual composition of projects is as yet unknown.

The selection of the route to market is essentially a balance of 'effective plays efficient'. The thinking being that a multi-down selection approach can be the most effective in its outcome and have the ability to drive a better solution and reduce risks. However, it may be inefficient from both the market(s)' and the client organisation's perspective, with regard to the resource and time involved. This is opposed to a single stage approach which can be very efficient, but might lack the required effectiveness to drive out all the risks and realise opportunities.

It is therefore important to determine the resource requirement that will be necessary to undertake the down-selects on both the client organisation and the supply chain side, together with the elapsed time for the process. This should then be balanced against the risk reduction and the benefits created.

Characteristics of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested reading

10. Good practice: Driving economic, environmental, and social value through the supply-chain (i)

Economic, environmental and social value is not just created as a result of the intended outcomes of a project, but also as a result of well-designed and executed project implementation.

For example, a project may be undertaken to improve public transport links to an economically deprived area, with the intended benefits of improving inclusive economic growth and reducing carbon emissions due to decreased reliance on private cars.

However, additional economic and social value will be created if construction of the new transport link creates local jobs (particularly if there is a recruitment emphasis on unemployed people) and provides training and skills development so that the workforce can move onto other jobs once the project is finished. If, on the other hand, contractors bring in people from a different area and working on the project does not contribute to improving their overall skills, that additional value will not be created. This is just one example of how additional value can be created through the right procurement approach.

When looking to deliver social value through the supply-chain, either through meeting project objectives or as a by-product of the project, there are three key things to consider:

- **Where will the value be created and distributed, and for who?**
- **Are the supply-chain incentivised to create value?**
- **Can you have confidence in the supply-chain to deliver value and reduce any negative consequences?**



All three of these factors are supported by setting targets with measurable performance metrics that are reflected in procurement evaluation criteria and ongoing contractual key performance indicators (and any financial incentivisation used, e.g. pain/gain mechanisms. The table below shows a generalised example of economic, environmental, and social value outcomes, how they can be driven through procurement, and how these can be measured and/or incentivised. These are aligned to the [UN Sustainable Development Goals](#).

Theme	Type of value	How procurement makes a difference	Examples for measuring and incentivising performance
Diverse and resilient natural environment  UNSDGs: 6,7,11,12,13,14,15	Climate	Embedding this into the selection and performance management processes means that, with the right contracting model, suppliers are incentivised to find ways to deliver the project in ways that reduce greenhouse emissions. Where applicable, they can design an asset that also contributes to this goal.	<ul style="list-style-type: none"> Reduction in emissions of greenhouse gases arising from the performance of the contract, measured in metric tonnes carbon dioxide equivalents (MTCDE). Reduction in water use arising from the performance of the contract, measured in litres. Number of green spaces created Reduction in waste to landfill arising from the performance of the contract, measured in metric tonnes
	Air Quality		
	Water		
	Land		
	Biodiversity	The project team should also consider the impact (positive or negative) of activities further down the supply-chain and report on these.	
Strong, resilient and inclusive economy  UNSDGs: 1,2,7,8,9,10,12	Good governance throughout the supply-chain	Part of economic resilience is ensuring that the businesses that make up that economy are appropriately governed and take ownership of risks. This helps to safeguard the project purposes and drive resilience into the supply-chain.	<ul style="list-style-type: none"> Demonstration that risks of modern slavery are being managed throughout the supply-chain Demonstration of mitigating the risks relating to cyber-security
	Reducing minority employment gaps	In many communities there are particular groups who are directly or indirectly prevented from accessing work or career progression, e.g. women, people with disabilities, or certain ethnic groups. This has a negative impact on health and well-being as well as a financial impact. Improving work opportunities for all leads to a stronger economy. Diversity of workforce also drives resilience, innovation and performance for businesses.	<ul style="list-style-type: none"> Number/total percentage of full-time equivalent (FTE) people from groups under-represented in the workforce employed under the contract, as a proportion of the total FTE contract workforce. <p><i>(Note: suitable parameters for what constitutes an 'underrepresented group' will vary depending on region and industry).</i></p>

Characteristics of good practice	Useful documents	Typical findings	Considerations	Good practice examples and suggested reading
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	<p>Creating a skilled workforce</p>	<p>A local economy will be strengthened if the overall skill level of the local workforce increases through the life of the project. This can be enhanced by hiring and training people who are currently untrained, and providing career progression opportunities for all.</p>	<ul style="list-style-type: none"> • Number of hires on entry-level training schemes, e.g. apprenticeships • Proportion of workforce who undertake career-progression training over the course of the project. • Number of people-hours of learning interventions delivered under the contract.
	<p>Generating and distributing wealth within the local community</p>	<p>Projects involve a large amount of spend, but the way in which services are procured will determine where that money ends up and who it benefits. Healthy economies will result in increased wealth for all, rather than all benefits being confined to the profits of a few individuals. The use of a wide supplier-base of small and medium sized enterprises, ensuring that workers are paid a fair wage, and hiring labour and workforce locally, all lead to wealth being created and distributed more evenly.</p>	<ul style="list-style-type: none"> • Number/value of contract opportunities under each contract awarded to start-ups, small and medium sized enterprises and voluntary, community and social enterprises (VCSEs). • Proportion of workforce under the contract employed locally (as defined by relevant parameters)
<p>Cohesive, happy and inclusive society</p>  <p>UNSDGs: 1,2,3,4,5,6,10,11</p>	<p>Health, safety and well-being of workforce</p>	<p>Health and safety standards in many developing countries are notoriously poor. Vulnerable workers (informal workers, women etc) can be forced to work in dangerous or unhealthy conditions. This can go unreported due to fear of losing their jobs. Workplace stress is also a big cause of stress and ill-health. The right work and work environment can improve physical and mental health.</p>	<ul style="list-style-type: none"> • Level of resources available to support staff well-being • Measures taken to reduce sexual exploitation, abuse and harassment (SEAH) risks (see Project Development Routemap Handbook, Appendix E for more information) and risks of modern slavery • Measures taken to ensure safe working, including provision of correct training and equipment, and actions to foster a safe working culture. • Number of close calls/near misses reported per hours worked* • Staff engagement surveys and improvement of scores over time <p><i>(Note: various measures from other aspects of value also contribute to the health and well-being of the workforce, such as reducing the minority employment gap and creating a skilled workforce.)</i></p>

Characteristics of good practice	Useful documents	Typical findings	Considerations	Good practice examples and suggested reading
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			<p><i>(*Note: whilst accident/incident frequency rates are necessary to record, it is generally not good practice to use these metrics as a measure and incentivisation of performance, as this can encourage under-reporting. It is more advisable to incentivise frequent reporting of close calls/near misses as this encourages proactive safety behaviour.</i></p>
Community integration and wellbeing	<p>Large-scale construction projects can inevitably have some temporary negative impacts on the local community during construction – from noise, to closures of amenities and increase in construction traffic, to the impact of an influx of (predominantly male) workers. However, there are a number of ways to mitigate these impacts. Additionally, suppliers can undertake activities to actively increase the health and well-being of project-affected persons.</p>	<ul style="list-style-type: none"> • Measures taken to engage with local communities and project affected communities • Measures taken to reduce sexual exploitation, abuse and harassment (SEAH) risks (see Project Development Routemap Handbook, Appendix E for more information). • Person-hours spent on community engagement initiatives <p><i>(Note: various measures from other aspects of value also contribute to community well-being, specifically inclusive economic growth, creating a skilled workforce and improvements to the natural environmental in which people live.)</i></p>	

Source: Adapted from UK Government Social Value Model, 2020

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

11. Good practice: Driving economic, environmental, and social value through the supply-chain (ii)

An example of how social value can be driven through the supply-chain is shown below. This example provides a form of balanced scorecard for defining and communicating the desired outcomes of a project. Such tools should be used to inform contractual documentation, design transparent tender evaluation criteria, and form the baseline for post-project completion evaluation.

The Social Housing Decarbonisation Fund (SHDF) is a change programme in the UK's Department for Business, Energy & Industrial Strategy (BEIS) to improve the energy performance of social housing through targeted investment and collaborative engagement with landlords and other government departments. Over a nine year spend period, SHDF aims to reduce the carbon emissions from social housing, reduce the number of tenants in fuel poverty, and lower fuel bills. It will make an important contribution to a large proportion of the social housing stock by 2030, as a significant stepping stone to achieving the government's ambition of net zero by 2050. It will also build capacity in social housing landlords and the supply chain to continue the journey to net zero after completion, with less input from government.

A project outcome profile tool has been used to support the SHDF programme in its initiation phase during the development of the Strategic Outline Business Case, in particular for benefits mapping. Use of this tool enables effective communication with stakeholders including the supply chain, of how the programme's objectives are aligned with the government's priority outcomes and how it will monitor, and ultimately measure, its success. In this example, it also highlights links with other government departments, such as the UK's Department for Levelling Up, Housing and Communities (DLUHC), supporting greater alignment of departmental activities.

The image on the next page shows how Departmental Outcomes translate into Programme Outcomes, under the theme of Environment, Health and Economy, along with metrics used to measure the success against each outcome.

Project Development Routemap for Infrastructure Projects: International Module, Procurement

Characteristics of good practice	Useful documents	Typical findings	Considerations	Good practice examples and suggested reading
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Themes	Environment - We live sustainably, reducing our carbon emissions		Health - We are improving physical and mental health		Economy - We have strong economic growth and improving productivity			
Departmental outcomes	Department for Business, Energy & Industrial Strategy (BEIS): Reduce UK greenhouse gas emissions to net zero by 2050		Department for Levelling Up, Housing and Communities (DLUHC): More, better quality, safer, greener and more affordable homes		BEIS: Back business by making the UK the best place in the world to start and grow a business		BEIS: Support increased productivity through unleashing innovation and new knowledge throughout the country	
Programme outcomes	Reduction of carbon dioxide emissions due to social housing	Build social housing landlords' capacity and capability to decarbonise their stock by 2050	Reduction in fuel poverty in social housing	Improve the health, comfort and wellbeing of social housing tenants in the homes treated	No increase in fuel bills due to SHDF programme	Development of the green economy and associated jobs	Increase the retrofit supply chain capability and capacity	Development of the retrofit innovation and installation value-for-money in accordance with qualitative measures
Example metrics	MtCO2e (million tonnes carbon dioxide equivalent) Non-Traded carbon savings	Self-reported levels of confidence and capability amongst social housing landlords Number of applications for funding versus stock which requires funding	Number of social homes improved to EER (Energy Efficiency Ratio) C by SHDF	Self-reported broader mental and physical health outcomes (from satisfaction survey)	Number of homes seeing no increase in fuel bills for equivalent home warmth	Number of jobs supported/created	Number of Trustmark and Microgeneration Certification Scheme	Average time for retrofitting (across each measure)

Characteristics
of good practice

Useful documents

Typical findings

Considerations

Good practice examples and suggested
reading

Suggested reading

Within Routemap, the suggested reading supports **(Step 9) – Action planning**.

Here are some sources of good practice information and guidance on procurement:

Project Development Routemap for Infrastructure Projects: International Handbook, Infrastructure and Projects Authority, 2020
<https://www.gov.uk/government/publications/project-development-routemap>

Business Case Development for Infrastructure Projects: International Guidance, Infrastructure and Projects Authority, 2020
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1062669/Infrastructure_Business_Case_International_Guidance.pdf

Public Private Infrastructure Advisory Facility
<https://ppiaf.org/>

PPP Reference Guide
<https://pppknowledgelab.org/guide/sections/83-what-is-the-ppp-reference-guide>

World Economic Forum – Strategic Infrastructure Steps to Prepare and Accelerate PPP, 2013

<https://fr.weforum.org/reports/strategic-infrastructure-steps-prepare-and-accelerate-public-private-partnerships>

International Finance Corporation (for Private Sector Funded Projects)

https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home

IFC Performance Standards, 2012

https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards

Inclusivity in Procurement: Entry Points in the Project Cycle, Infrastructure and Cities for Economic Development Facility (ICED), 2019

<http://icedfacility.org/resource/guidance-note-inclusivity-in-procurement/>

Characteristics
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reading

ISO 20400 Sustainable Procurement

<https://www.iso20400.org/>

Mobilising Finance for Infrastructure, Cambridge Economic Policy Associates, 2015

https://assets.publishing.service.gov.uk/media/57a08979ed915d622c00022b/61319-DfID_3_Three_page_summary.pdf

OECD 2015 – Fostering Investments in Infrastructure

<https://www.oecd.org/daf/inv/investment-policy/Fostering-Investment-in-Infrastructure.pdf>

OECD Public Procurement Toolkit

<https://www.oecd.org/gov/public-procurement/>

Infrastructure Financing Instruments and Incentives, OECD, 2015

<http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf>

Concessions, Build Operate Transfer and Design Build Operate Projects

<https://ppp.worldbank.org/public-private-partnership/agreements/concessions-bots-dbos>

Major Projects Knowledge Hub Good Practice Contract Management Framework, 2016

<https://www.majorprojectsknowledgehub.net/resources/good-practice-contract-management-framework/>

National Audit Office Commercial and Contract Management: Insights and Emerging Best Practice, 2016

https://www.nao.org.uk/wp-content/uploads/2016/12/Good_practice_contract_management_framework.pdf

<https://www.nao.org.uk/wp-content/uploads/2017/12/A-Short-Guide-to-Commercial-relationships.pdf>

G20 PPP Contract Management

https://managingppp.github.org/?utm_source=English%20media%20release&utm_medium=Media%20release&utm_campaign=PPP%20Contract%20Management%20launch

European Commission Public Procurement Guidance for Practitioners, 2015

https://ec.europa.eu/regional_policy/sources/docgener/informat/2014/guidance_public_proc_en.pdf

ICED: Sexual exploitation, abuse and harassment (SEAH) Infrastructure Tool (DFID Safeguarding Unit)

<http://icedfacility.org/wp-content/uploads/2019/07/ICED-SEAH-Infrastructure-Tool.pdf>

World Bank, Guidance Note: Procurement arrangements applicable to Public-Private Partnerships (PPP) contracts

<https://ppp.worldbank.org/public-private-partnership/library/procurement-arrangements-applicable-public-private-partnerships-ppp-contracts-financed-under>

Characteristics
of good practice

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World Bank, Procuring Infrastructure Public-Private Partnerships, 2018

https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/Procuring%20Infrastructure%20Public-Private%20Partnerships%20_2018_EN2_0.pdf

World Bank, Procurement for Projects and Programs

www.worldbank.org/en/projects-operations/products-and-services/procurement-projects-programs

United Nations Economic Commission for Europe (UNECE): Women's Empowerment in People-First Public-Private Partnerships, 2020

http://www.unece.org/fileadmin/DAM/ceci/ppp/Documents/Drafts/PPP_Brief_1_Women_s_empowerment_in_PfPPPs.pdf

UK Government Social Value Model

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940826/Social-Value-Model-Edn-1.1-3-Dec-20.pdf

Glossary

This glossary identifies key terms for the Procurement Routemap module. The *Project Development Routemap for Infrastructure Projects: International Handbook* contains a comprehensive glossary of terms related to the Project Development Routemap generally.

Assessment(s): Refers to either the complexity or capability assessments (or both).

Asset management: Asset management is the coordinated activity within and between organisations, to realise value from their assets.

Balanced scorecard: A set of criteria to evaluate different applicants for a procurement decision. Should balance the different objectives and considerations of the project, including, for example, cost, quality, environmental standards, gender inclusion.

Capability: Routemap uses capability to describe the ability of the sponsor, client, asset manager and market to organise for effective and efficient delivery. It refers to a part of the business and not the individual, as most barriers to best-practice are institutional and not individual actions. Stakeholder perception of capability is assessed by capability assessments.

Capability gap: The difference between the existing organisational capability and the capabilities required to successfully deliver the proposed project or programme.

Client: The client is the organisation that is responsible for fulfilling the requirements and delivering the benefits. The client translates the requirements from the sponsor and manages the delivery outcomes.

The client selects, procures and manages supplier/s to meet project objectives. The Client organisation may be referred to as the Implementing Agency or the Government Contracting Agency. The Client may be internal or external to the department or line ministry.

Client model: The client model refers to how the client organisation structures and resources the project execution activities between the client, advisors/partners and supply chain (e.g. in-house vs. external). This is a key consideration in determining organisational design and procurement strategies.

Commercial model: The commercial model is the long-term plan for how an organisation will manage commercial arrangements while delivering the project requirements.

Complexity: Project complexity is a measure of the inherent difficulty of delivering a project. This is assessed on factors such as the stability of the wider delivery environment, the level of innovation required, and the number of stakeholders involved.

Contracting model: The contracting model refers to how risk will be allocated between the client and suppliers. It should align with each parties' risk appetite, their ability to manage risks and the client model.

Delivery model: The delivery model refers to the organisational entity that will be appointed to deliver the project, e.g. establishment of a special purpose vehicle. This is a key consideration in determining governance arrangements.

Design for Manufacture and Assembly (DFMA): Design for Manufacture and Assembly (DfMA) is a design approach that focuses on ease of manufacture and efficiency of assembly. By simplifying the design of a product, it is possible to manufacture and assemble it more efficiently, in the minimum time and at a lower cost.

Down selection: Down selection happens as you move through the procurement process and suppliers are not selected to be taken forward to the next stage.

Economic, environmental and social value: the impact a project has on the environment, economy, and society. This may be global or localised, and may result both from meeting the project's objectives (e.g. improved transport link) and from by-products of delivery (e.g. job creation). It relates to reducing negative impacts as well as increasing positive impacts, and it is important that value delivered against one category is not at the expense of another (e.g. delivering economic development, but at significant cost to local biodiversity).

Environmental, social and governance (ESG) criteria: These are key criteria for sustainability reporting, in response to widespread investor and consumer demand. They are also increasingly used to inform investment decision making.

Environmental and Social Impact Assessment (ESIA): An environmental and social impact assessment is conducted to identify and evaluate environmental and social risks in projects.

Environmental and Social Management Plan (ESMP): An environmental and social management plan contains mitigation measures and actions in order to mitigate environmental and social risks and to maximise potential environmental and social benefits over the life of a project.

Interface: A point where two systems, subjects, organisations, etc. meet and interact.

International Finance Corporation (IFC) Performance Standards: An international benchmark for identifying and managing environmental and social risk that has been adopted by many organizations as a key component of their environmental and social risk management.

Infrastructure: Infrastructure includes the physical and organisational networks and systems that supply and support reliable and effective domestic and international transport, digital communications, energy, flood protection, water and waste management, health and social services.

Market: A market is a group of organisations that integrates and competes to provide goods or services to one or more clients.

Open Book Contract Management (OBCM): The scrutiny of a supplier's costs and margins through the reporting of, or accessing, accounting data.

Political economy: Political economy focuses on the interrelationships among individuals, governments, and public policy and how these create economic, environmental and social outcomes.

PPP: Public Private Partnerships (PPP) is a form of contract between public and private sector whereby, characteristically, the private sector design, build, finance and operate a publicly provided service against payment by the Sponsor (for an Availability based PPP) or by users (for a Concession based PPP). There are many different possible definitions.

Prime contractor: The contractor responsible for the day-to-day oversight of a programme, including management of vendors and traders and the communication of information to all involved parties throughout the course of the programme.

Procurement Model: The approach taken, and the contracting model used to purchase goods and services from the supply chain.

Project: Throughout this document, the term *project* means project, programme or portfolio.

Project affected person: A person who has been affected by the project due to loss of land, housing, other immovable assets, livelihood or a combination of these due to project activities. These include protected and/or marginalised groups such as indigenous peoples, women, children, persons with disabilities and informal sector workers.

Risk: The uncertainty of outcome, whether positive opportunity or negative threat, of actions and events.

Risk appetite: The amount and type of risk that an organisation is willing to take in order to meet their strategic objectives.

Risk tolerance: The maximum level of risk that an organisation is willing to take for each individual risk and also collectively.

Route to market: Route to market is used to describe the selection process adopted by the Client to determine the Supplier.

Scenario planning: A strategic planning method to help predict uncertainties within an organisation. Scenario planning involves predicting what future conditions or events are probable, what their consequences or effects might be and how to best respond to them.

Safeguarding: The organisational system in place to prevent harm or unethical behaviour being perpetrated by individuals [engaged in project development and delivery].

Senior responsible owner (SRO): This is the person who is ultimately accountable for a programme or project meeting its objectives, delivering the required outcomes, and realising the required benefits. They own the business case and are accountable for all aspects of governance. They will usually sit in the sponsor organisation.

Sexual exploitation and abuse (SEA): Sexual exploitation is any actual or attempted abuse of a position of vulnerability, differential power or trust for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another (UN Glossary on Sexual Exploitation and Abuse 2017, World Bank 2019). Sexual abuse is the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions (UN Glossary on Sexual Exploitation and Abuse 2017, World Bank 2019)

Sexual harassment: Any unwelcome sexual advances, request for sexual favours, and other verbal or physical conduct of a sexual nature.

Sponsor: The sponsor organisation secures the funding, owns the business case and is responsible for specifying the requirements to the client. In some contexts, the sponsor and client could be from the same organisation.

Sustainability: This means making the necessary decisions now to stimulate economic growth, maximise wellbeing and protect the environment, without affecting the ability of future generations to do the same.

Target operating model: The end state of how the asset will be: used; funded; owned; operated and maintained.

UN Sustainable Development Goals (SDGs): Adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 SDGs are integrated and recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.

Value for money: The optimum combination of whole-of-life costs and quality or fitness for purpose of a good or service that meets the user's requirements (though there are many different possible definitions).



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