Initial Report

National Processes Facilitating Project Preparation – Illustrated by country examples

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CRISIL Risk and Infrastructure Solutions Limited

A G20 INITIATIVE
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1. The infrastructure challenge

STUDY BACKGROUND

The 2018 Argentinian G20 Presidency aims to put forth a people-centred vision for global transformation under three priority areas: The Future of Work; Infrastructure Development; and a Sustainable Food Future. In addition, the G20 aims to open a global conversation on creating a universal consensus on policies and practices to drive social and economic growth.

The G20 appreciates that the Infrastructure Development challenge mandates a revised collaborative approach to crowd in private capital in order to harness the large pool of private savings towards long-term investment. Towards this objective, the G20 Infrastructure Working Group (IWG) has identified the key elements for infrastructure growth and proposed that the work progresses under a strategic roadmap to “Developing infrastructure as an asset class”. The roadmap is organised into three overarching pillars with the principal objectives of:

i) improving project development;

ii) improving the investment environment for infrastructure; and

iii) promoting greater standardisation.

The G20 have now endorsed the G20 Principles for the Infrastructure Project Preparation Phase developed by the IWG which are aimed at improving assessments of project rationale, options appraisal, commercial viability, long-term affordability, and deliverability. They have also welcomed the work of the Multilateral Development Bank (MDB) Infrastructure Cooperation Platform, which has prepared guidance on good practice to inform MDB approaches and efficiency of support on project preparation.

The Global Infrastructure Hub (GI Hub) – created as an initiative of the G20 to facilitate knowledge sharing and multi-institutional coordination to help increase the flow and quality of infrastructure development – fully supports the roadmap initiative. The GI Hub works with the public and private sectors globally to increase the flow and quality of infrastructure projects around the world. It shares data, knowledge and leading practices, and helps the public and private sectors work more closely to deliver crucial public infrastructure projects.

This document is an intermediary output, to be followed by the detailed design of a complete reference tool on Leading Practices on National Processes Facilitating Project Preparation, which will then act as a guidance document for governments and practitioners to identify critical factors towards successful project preparation. This initial document is intended to provide a high-level perspective on the current global infrastructure project preparation landscape – its challenges and possible approaches to solutions. This overview, and the final reference tool, are designed to be complementary to the G20 IWG Principles for the Infrastructure Project Preparation Phase and the MDB guidance on project preparation, so that national governments may be better placed to utilise the Principles and also, where applicable, the available PPFs. The reference tool will be finalised by the end of 2018.
CONTEXT

$94 trillion is required by 2040 to meet global infrastructure needs.

GI Hub’s Global Infrastructure Outlook estimates that $94 trillion will be needed by 2040 to meet global infrastructure needs. Roads and Power will continue to demand the highest share of investment need, followed by Water and other forms of Transport. More than half of this investment will be needed in Asia followed by the Americas, Europe and Africa.

Governments will need to supplement their budgets with greater private sector participation to accelerate investment in infrastructure.

To meet this substantive investment need, the overall average spending on infrastructure will need to grow from 3% of global GDP at present, to 3.5% of global GDP by 2040. With governments across the globe tending towards greater fiscal prudence as gross national debt widens to more than 100% of the global GDP, doubling from 2008-levels for most regions in the world, government budgets alone will be challenged in meeting this need – thereby making it critical to encourage private sector investment and participation, including through the public-private partnership (PPP) model.
2. A global context to project preparation

Addressing the infrastructure gap of $94 trillion by 2040 will require global efforts to build prioritised project pipelines that are implementable.

Often, demand for infrastructure does not directly result in project implementation – factors such as poor project fundamentals, inadequate risk-adjusted returns, and lack of capacities to deliver the project can derail implementation. Project preparation, which spans activities from conceptualisation and feasibility analysis to deal structuring and transaction support, is integral to creating bankable projects.

Inadequate support at the project preparation stage can result in critical projects being scrapped prior to implementation or increasing the implementation costs to a prohibitive degree. Quality project preparation is thereby an essential step to translate the vision and demand for global infrastructure into infrastructure development.

What is project preparation?

Project identification and concept definition
- Identifying desired outputs
- Identifying project partners
- Drafting action plan

Project pre-feasibility and feasibility studies, and due diligence
- Technical and commercial due diligence
- Financial and economic viability
- Socio-economic impact

Project structuring and delivery planning
- PPP analysis
- Structuring financing
- Drafting of project documents
- Engineering design

Project processing and approval
- Finalisation of project agreements
- Approvals to commence construction

Project preparation is used to collectively refer to four key activities that occur prior to procurement, and covers:

- **Project identification and concept definition.** This is the early stage of concept design, wherein the need to undertake the project is identified (often as a response to a challenge/gap in existing infrastructure) and the expected outcomes from the project are laid out.

- **Project pre-feasibility and feasibility studies, and due diligence.** At the second stage, the project’s blueprint is further defined, along with high-level (pre-feasibility) and detailed (feasibility) examinations of the viability of the project. Parameters along which a project is evaluated include technical feasibility, value for money, financial viability, socio-economic benefits, socio-environmental impacts, etc.

- **Project structuring and delivery planning.** Once a project is deemed feasible, the next step is to define how the project will be implemented. This involves identifying key stakeholders and their role, and creating an appropriate technical, legal, and commercial structure, including public-private options assessment.

- **Project processing and approval.** In this phase, all administrative and operational endorsements are obtained, as prescribed by the laws governing the country and/or region.
To define good practices for project preparation, the IWG has identified five principles that must be considered when creating project pipelines. They are project rationale, options appraisal, commercial viability, long-term affordability and deliverability. However, for these principles to be effective, the G20 highlights the need to have a robust institutional framework, as the foundation of quality project preparation. To address this, governments the world over have attempted to strengthen their project preparatory activities, through the use of frameworks, specific guidance, structured processes, capacity building initiatives and financing mechanisms.

### Project preparation – Global and regional deficit

A study conducted by the World Bank Group (WBG)\(^1\) on assessing the strength of regulatory frameworks and institutional arrangements to prepare, procure and manage infrastructure projects in 82 countries, highlights significant regional and income group differences in the maturity of project preparation activities.

Of the high-income countries surveyed, project preparation activities received an average score of 70 (out of 100), lower than the scores for procurement, contract management and the management of unsolicited proposals (USPs). Middle income and lower income countries scored lower – with average scores for project preparation declining from the high 40s for middle income countries to 34 for low income economies.

Thereby, a pattern clearly emerges that the gap in project preparation is higher in lower income countries. On the regional front, while high income OECD countries scored a high 70 on project preparation, regions such as South Asia, Latin America and Europe received only the median score of 49. Regions such as sub-Saharan Africa and the Middle East and North Africa stood out as being the low scorers on project preparation. However, there are some exceptions too (i.e., India and the Philippines, who score higher in their income groups).

#### Notes


2. ECA – Europe and Central Asia; EAP - East Asia and Pacific; LAC – Latin America and Caribbean; MENA – Middle East and North Africa; OECD – Organisation for Economic Co-operation and Development; SAR – South Asia; SSA – Sub-Saharan Africa

### Benchmarking PPP Procurement (WBG) – Scores by income-level group, out of 100

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Preparation</th>
<th>Procurement</th>
<th>USPs</th>
<th>Contract Management</th>
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<td>High income</td>
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<td>Upper middle income</td>
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<tr>
<td>Low income</td>
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### Benchmarking PPP Procurement (WBG) – Project preparation scores by region, out of 100

<table>
<thead>
<tr>
<th>Region</th>
<th>Preparation</th>
<th>Procurement</th>
<th>USPs</th>
<th>Contract Management</th>
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<td>ECA</td>
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<td>OECD high income</td>
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<tr>
<td>SAR</td>
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### Initial Report: National Processes Facilitating Project Preparation

<table>
<thead>
<tr>
<th>Country</th>
<th>Score (out of 100)</th>
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<tbody>
<tr>
<td>United Kingdom</td>
<td>96</td>
</tr>
<tr>
<td>South Africa</td>
<td>96</td>
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<tr>
<td>Philippines</td>
<td>96</td>
</tr>
<tr>
<td>Canada</td>
<td>92</td>
</tr>
<tr>
<td>South Korea</td>
<td>83</td>
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</table>
One of the major reasons for the regional deficit in project preparation maturity is the inadequacy of project preparation funding, which leads to sub-optimal project preparatory standards and inflated costs. A literature review on project preparation financing shows that about 3-5% (developed markets) and 5–10% (emerging and frontier economies) of total investment in infrastructure is consumed by project preparation, translating to approximately $5-6 trillion in project preparation needs by 2040.

| Indicative Estimates on the Share of Project Preparation in the Total Project Cost |
| Global Infrastructure Basel: Unleashing Private Capital Investments for Sustainable Infrastructure Greenfield Projects, 2014 | 3 – 5% in developed markets, could go up to 10% in frontier markets |
| United Nations: Catalysing Early Stage Investment, 2011 | 5% |
| Global Green Growth Institute: Infrastructure Finance in the Developing World, 2015 | 5 – 10% |
| World Bank | 3 – 5% in developed economies; 10 – 12% in emerging economies |
| InfraCo Africa | 10% in small scale energy projects |

Typically, activities for project preparation are financed by national or sub-national government agencies sponsoring projects, through their respective budgets. Recognising the financing gap for project preparation, multilateral development banks (MDBs) have been scaling up their project preparatory financing and technical assistance to government agencies for project preparation activities since the late 1990s. Although MDBs have a global presence, the focus of this assistance is particularly prevalent in lower-middle income and low-income countries. MDBs provide financing directly at the national government level or through trust funds established by the MDB.

In the past decade, specialised facilities and dedicated funds have been created for project preparation, collectively referred to as Project Preparation Facilities (PPFs). PPFs have been designed to address the market failure in public policy related to weak public sector capacity and insufficient allocation towards project preparation. Typically, PPFs extend financial assistance related to project preparation and transaction advisory. These are usually provided as grants or on a credit basis, with partial/full cost recovery.

Prominent facilities include the Global Infrastructure Facility (GIF), a multi-donor platform, housed at the World Bank with total contributions of $84 million, and the Asia Pacific Project Preparation Facility, a multi-donor trust fund managed by the Asian Development Bank (ADB), focused on Asia and the Pacific with initial commitments of $73 million.

Country-focused PPFs have also been established, such as the Project Development & Monitoring Facility in the Philippines, sourced mainly from the Philippine Government, with contributions from the Australian Government, and managed through the consultant procurement framework of the ADB. Furthermore, there are also specialised national level financial institutions that provide project preparation assistance, such as Indonesia’s Infrastructure Guarantee Fund, Mexico’s Fondo Nacional de Infraestructura and South Africa’s Development Bank of Southern Africa.

Linked to this steady increase in financing is the global effort in enhancing the quality of project preparation. As governments globally adopt a learning-by-doing approach, the canopy of project preparation is undergoing continuous improvement through local innovation and the adoption of global best practices.
This intermediate paper attempts to synthesise key elements of project preparation that can help countries leverage their limited funds to attract more private investment and deliver higher quality infrastructure.

To draw out lessons learned, the paper looks at five case studies of national approaches to project preparation from developed and developing countries. This paper is an intermediary output, and the national project preparation reference tool, also currently under development, will cover a wider section of countries and learnings from the country case studies.

The cases covered in this paper include:

**United Kingdom:** Considered a global pioneer in project development, the UK has seen its framework progressively evolve since the 1990s. Today, the UK has developed a sophisticated approach to project preparation, creating a centre of expertise within the government treasury department, the Infrastructure and Projects Authority (IPA).

**South Korea:** Drawing lessons from the 1997 Asian financial crisis, South Korea's framework for project preparation focuses on strengthening public investment management and is led by their specialised project preparation agency – Public and Private Infrastructure Investment Management Centre (PIMAC).

**Netherlands:** The Netherlands' implementation of project preparation has imbibed lessons from the challenges of its early PPP programme of 1980. The country has developed a unique collaborative approach for the development of projects, the Multi-year Programme for Infrastructure, Spatial Planning and Transport (MIRT) framework, which has enabled implementation of large, complex PPPs over the past two decades.

**South Africa:** South Africa's success of its large-scale Renewable Energy Independent Power Producer Procurement (REIPPP) Programme can be attributed to its systematic approach to project development. Led by the dynamic leadership team from the Central PPP unit and the line department, REIPPP has managed to raise $15 billion in private investment.

**Mexico:** Mexico’s Fondo Nacional de Infraestructura (FONADIN) was established as a pragmatic response to institutional capacity challenges in the country's toll-road programme. FONADIN has enabled financing of project preparation, bolstering project appraisal and quality control processes.

To help governments achieve the objective of a robust project preparation framework, an analysis of five countries based on a wide range of parameters, including institutional frameworks, process standards, documentation, appraisal, review and public finance management was conducted. The analysis resulted in the identification of key project preparation preliminary lessons, which will serve as guidance for infrastructure planning and development. These initial findings will be further tested and refined through greater detailed analysis and stakeholder discussion during the next phase of development of the reference tool.

**KEY PRELIMINARY LESSONS**

**LESSON 1**

**Building public sector capacity to deliver on globally accepted procedures**

Strengthened government capacity for upstream activities helps to provide an enabling environment and unlock incremental value in the development of infrastructure projects. To this end, a dedicated process to build capacity at all levels of the government is essential to assemble an experienced, capable team of project champions.

The UK has developed a tool to help individuals to identify areas of development in their skill sets, in line with the capabilities needed to deliver infrastructure projects, outlined in the Project Delivery Capability Framework (PDCF). Based on the training needs identified, senior civil servants undergo training at the UK’s Major Projects Leadership Academy (MPLA), widely known as the gold standard of training in project management. To date, 250 professionals have graduated from MPLA.

Mexico augments project delivery capacity by ensuring that FONADIN’s oversight committee has a judicious mix of government representation, banking and financial sector expertise, as well as subject-matter private sector expertise.

Further analysis of leading practices on public sector capacity building initiatives, considering both internal and external (in the case of developing countries) resources, will be looked at during the next phase of development of the reference tool.
LESSON 2
Availability of a robust project identification framework with a multi-year capital investment planning horizon.

A defined framework with a multi-year planning horizon serves as a common goal for all stakeholders to work towards, promoting a shared understanding — with the goal itself structured to help the country solve its long-term infrastructure problems.

Mexico’s National Development Plan (NDP) has identified 743 projects for implementation over the 2016 – 2021 period.

Prior to 2016, the UK’s IPA published National Infrastructure Plans annually. Now, the National Infrastructure Commission (NIC), set up in 2016, not only outlines a strategic vision for infrastructure investment for the next 30 years, but also holds the government to account for the implementation of the project pipeline.

LESSON 3
Availability of a sustainable source of funds for project preparation.

Ministerial budgets are not always sufficient to finance large project preparation costs, given the high risk involved — not all projects at the development stage will be implemented. However, creating a sustainable source of project preparation financing will help in creating a strong project pipeline.

National and regional project preparation facilities have been established in South Africa, such as the National Treasury’s Project Preparation Fund. The country also receives project preparatory financing from multi-lateral agencies and donor agencies. Availability of dedicated financing for the REIPPPP programme has been critical in obtaining access to a high quality, dedicated team to lead the programme to successful implementation.

Mexico’s FONADIN provides differentiated project preparatory financing depending on the project type — recoverable lines of credit for profitable projects and non-recoverable grants for socially important but less profitable projects.

LESSON 4
Strong process orientation with a focus on quality assurance.

Independent reviews for quality assurance are established by governments to ensure that their public investments are in line with strategic goals, fulfilling the needs of end users and sustainable in the long-term.

The UK’s Office of Government Commerce (OGC) Gateway Review Process is a comprehensive multi-stage peer review process mandated for all infrastructure projects. Further, the IPA and Major Projects Review Group (MPRG) support the quality assurance process through reviews by experts chosen from a vast pool of 1,600 independent reviewers from government and industry.

In South Korea, PIMAC sets up multi-disciplinary independent reviews of project proposals, with clear and transparent assessment criteria covering three facets — economic, policy and regional development.

LESSON 5
Availability of standardised guidance documents and templates for project development.

Standardisation of documents, including pro forma technical specifications and performance rules, results in considerable savings in time and costs for project preparation. This helps to develop greater private sector engagement and stronger project pipelines.

The UK’s Her Majesty’s Treasury (HM Treasury) provides guidance documents covering all stages of the project lifecycle, from needs identification, to monitoring of the project post execution. Critical documents include the Green Book, Integrated Assurance and Approval Plan (IAAP) guidelines, and the Project Initiation Route Map.

South Korea’s PIMAC provides standard output specifications by facility and standard sectoral guidelines for Pre-Feasibility Studies (PFS). The Netherlands’ MIRT framework provides extensive guidance materials on preparatory processes and output standards.
LESSON 6
Transparency in project preparation processes and continuous market appetite testing.

*Transparent project development is necessary to promote a common understanding of the risks-rewards for the project, enabling all stakeholders to make informed decisions during the project lifecycle and helping to promote public trust.*

In the Netherlands, details on planning and implementation of government projects are published in the Annual Budget and are accessible to the public. Furthermore, all decisions taken on government projects are required to be presented to the House of Representatives, along with periodic progress updates.

The success of South Africa’s REIPPP programme can be attributed to continuous engagement with private sector players and bankers to shape the programme design in line with market expectations.

LESSON 7
Up front stakeholder identification and continued involvement in project preparation.

*To avoid infrastructure projects being considered a ‘failure’ due to lack of public support, integration of the wider community and more effective stakeholder communication (related to issues associated with the project) are critical. Incorporating market feedback during the development stage will help to make projects more attractive to industry partners and stakeholders.*

The Netherlands encourages a collaborative approach to project preparation by requiring that projects be steered by a ‘Consultations Committee’ that comprises civil servants, industry experts and representatives from NGOs. Members of the steering committee are jointly responsible for implementing the project and providing financial resources wherever required.

In South Korea, PIMAC’s PFS studies are guided by a transparent stakeholder engagement process, known as the ‘Five Meetings Rule’ which requires at least five review meetings to be conducted at various check points in the project preparation process with representatives from the Ministry of Economy and Finance, line departments, PIMAC and private sector field specialists.

Further analysis on success factors on appropriate engagement with public stakeholders, end users and the community during the development stage will be explored in the next phase of development of the reference tool.

LESSON 8
Establishing distinct structures with clearly defined governance arrangements and responsibilities for implementation of major projects.

*The more complex a project, the more necessary it becomes to create an enabling structure operating outside of the government’s bureaucracy framework. This helps with the compartmentalisation of efforts and financing, culminating in effective project delivery.*

To implement South Africa’s REIPPP Programme, the Department of Energy (DOE) and the National Treasury’s PPP Unit established the DOE IPP Unit. This unit functioned outside the departmental structure, staffed with cross-functional experts from both departments.

In the UK, major projects are often implemented through special agencies with their own budgets. For example, Transport for London (TfL), the local government transport body for Greater London, set up Crossrail Ltd. to implement new railway lines in London. Once completed, these lines are transferred to TfL for operations.

Further analysis of the key success factors in ensuring success of the ‘distinct structures’ will be further assessed in the next phase of development of the reference tool.
## Snapshot of the Project Preparation Framework in Selected Countries

<table>
<thead>
<tr>
<th>Factors</th>
<th>United Kingdom</th>
<th>South Korea</th>
<th>Mexico</th>
<th>South Africa</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apex institution for overall guidance and policy framework</td>
<td>Her Majesty’s Treasury (HM Treasury)</td>
<td>Ministry of Economy and Finance (MOEF)</td>
<td>Secretariat of Finance and Public Credit (SHCP)</td>
<td>National Treasury (NT)</td>
<td>Ministry of Infrastructure and Water Management (MIWM)</td>
</tr>
<tr>
<td>Specialised agency for capacity building support in project preparation</td>
<td>Infrastructure and Projects Authority (IPA), UK</td>
<td>Public and Private Infrastructure Investment Management Centre (PIMAC)</td>
<td>Fondo Nacional de Infraestructura (FONADIN)</td>
<td>The Government Technical Advisory Centre (GTAC)</td>
<td>MWM</td>
</tr>
<tr>
<td>Project planning and prioritisation framework</td>
<td>National Infrastructure Assessment (30-year Vision document) by National Infrastructure Commission (NIC); Annual plans by line departments</td>
<td>Medium term Project Plan (5-year plan) by each line department</td>
<td>National Development Plan (6-year) by SHCP; National Infrastructure programme (NIP) (5-year) by SHCP; National Program of Financing For Development (5-year) by SHCP; Sectoral plans by Line Departments (5-year)</td>
<td>National Development Plan 2030 by Treasury; National Infrastructure plan by PICC; Strategic plan (5-year plans); Annual Performance Plan and Annual User Asset Management Plans by line departments</td>
<td>Structural Vision on Infrastructure and Spatial Planning (to 2040); Multi-year Programme for Infrastructure, Spatial Planning and Transport (MIRT) project plan (updated annually)</td>
</tr>
<tr>
<td>Project preparation financing</td>
<td>Budgetary allocations to line departments/ministries</td>
<td>Budgetary allocations to line departments/ministries</td>
<td>Budgetary allocations of line departments; PPP projects are financed by FONADIN</td>
<td>Multiple project preparation facilities; Budgetary allocations of line departments; PPP specific facility – GTAC Project Development Account</td>
<td>Budgetary allocations to line departments/ministries</td>
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<tr>
<td>Independent Quality assurance mechanisms</td>
<td>Office of Government Commerce (OGC) Gateway Review process by Major Projects Review Group (MPRG) or IPA</td>
<td>Independent Review by PIMAC</td>
<td>Multi-tier process of quality control for projects financed by FONADIN</td>
<td>Treasury PPP unit or designated specialised agency such as DOE IPP unit for the REIPPPP programme</td>
<td>MIRT decision process; The Dutch Gateway Review Method by Bureau Gateway</td>
</tr>
<tr>
<td>Project approval agency</td>
<td>Approval for major projects is provided by HM Treasury</td>
<td>Centrally funded projects – MOEF; Other projects – Line departments to approve and notify MOEF and PIMAC; PPP projects – Project Review Committee chaired by MOEF</td>
<td>Centrally funded projects and NIP projects – Investment Unit, SHCP; Other Projects – Line departments and get a binding opinion from Investment Unit, SHCP; PPP projects – Inter-ministerial Commission, and FONADIN</td>
<td>Large projects – Approval under Budget Facility for Infrastructure (BFI) including NT, PICC, and Department of Planning, Monitoring and Evaluation (DPME); Other capital projects – Approvals by Line departments/agencies as per the provisions of the Capital Planning Guidelines; Approvals by PPF agencies based on the PPF facility</td>
<td>Consultations Committee and MIWM</td>
</tr>
</tbody>
</table>

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3 Infrastructure Investment Programme for South Africa (IIPSA), DBSA Project Preparation Fund, ECOWAS Projects Preparation and Development Unit, SADC Project Preparation & Development Facility, Sustainable Energy Fund for Africa, Climate Resilient Infrastructure Development Facility, NEPAD Infrastructure Project Preparation Facility
4. United Kingdom

FACT SHEET

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KEY LEARNINGS

UK’s project preparation ecosystem has been widely recognised as a global hallmark for government agencies. It has progressively evolved since the early 1990s in response to implementation realities, and today, comprises:

- Creation of a centre of expertise to guide government agencies in project planning, preparation and development activities;
- Guidance documentation related to all major aspects of project preparation;
- Use of independent experts for quality assurance against a clear set of project standards;
- Sophisticated approaches to training and developing project leaders.

The UK has often been regarded as a pioneer of project delivery globally, providing a useful learning opportunity for developing countries embarking on the implementation of large projects. Through its Private Finance Initiative (PFI), launched in 1992, the UK has delivered £56 billion of private sector capital investment in over 700 projects over two decades. Today, the government is implementing one of its most ambitious policy agendas ever – the current portfolio of the government’s major projects (GMPP) includes 143 projects worth over £455 billion ($586 billion), across 17 departments. These projects are increasingly diverse in their nature, objectives and complexity: ranging from capital intensive infrastructure projects like High Speed Two (HS2) – a new high speed rail network linking the south and north of the UK – to major transformations like the Her Majesty (HM) Courts Reform, which will modernise the way people interface with the courts service.

Institutional Framework

Project preparation activities in the UK are decentralised, with each line department and local government being responsible for their own project preparation as procuring authorities. Procuring authorities plan, structure and procure projects, and pay for the services. Activities for project development are funded through the federal or local government budgets. Quite often for major projects, special agencies are created that are provided with separate budgets.

For example, Crossrail Limited has been incorporated by Transport for London (TfL) to plan and implement the new railway lines in London. Once completed the railway lines will be handed over to the TfL for operations. Similarly, HS2, the railway linking London, Birmingham, the East Midlands, Leeds and Manchester, is being developed by High Speed Two (HS2) Limited, a company limited by guarantee established by the UK government.

\(^1\) Source: IMF
\(^2\) Source: GI Hub
To guide the above-mentioned implementing agencies, the government has created two unique institutions. The Infrastructure and Projects Authority (IPA), reporting to Her Majesty’s Treasury (HM Treasury) and the Cabinet Office has been formed to oversee the general policy on project delivery and quality assurance of specific business case proposals. Established in 2015 by the merger of Infrastructure UK (IUK) and Major Projects Authority (MPA), IPA has a long history of managing and delivering major infrastructure projects through its founding institutions.

The IPA does not implement projects and focuses on the overall project delivery system, which includes the projects, people and processes that together create the right environment for successful delivery. It is part of a wider institutional framework for infrastructure planning and delivery.

To help shape a futurisitc vision of the UK’s economic infrastructure, the Treasury has created the National Infrastructure Commission (NIC). The NIC has prepared its first National Infrastructure Assessment (NIA) in 2018, which analyses the UK’s long-term economic infrastructure needs, outlines a strategic vision over the next 30 years and sets out recommendations for how the identified needs should be met. The NIA will be tabled in the Parliament and the NIC will monitor progress on the government’s implementation. The NIC is a unique entity that has independent experts and industry leaders as its commissioners. Although funded by the Treasury, it functions at arm’s length and provides independent advice and progress monitoring.

**Project Preparation Landscape**

The Her Majesty’s Treasury (HM Treasury) recommends specific guidelines for all new major projects requiring HM Treasury and IPA approvals. Interesting aspects of the project preparation process are highlighted below:

**A merged IPA combines the expertise in delivery, assurance and financing, helping to manage major infrastructure projects within one government entity – thus defined as ‘the UK government’s centre of expertise for infrastructure and major projects.’**

**Business Case Development:** All line agencies must prepare business cases for their spending proposals. These cases are prepared according to a model which views proposals from five interdependent dimensions – known as the Five Case Model. These dimensions are: strategic, economic, commercial, financial and management. The business case evolves as the project preparation for the project progresses. For projects, a strategic outline case is prepared at the conceptualisation stage, thereafter an outline business case is prepared at the pre-feasibility stage, which is followed with a more comprehensive full business case and its updates prior to implementation.

**OGC Gateway Review**: The UK has instituted a comprehensive and mandatory peer review process at key decision points in the project lifecycle to enhance the quality of project preparation and setting government expectations in project delivery. The Office of Government Commerce (OGC) Gateway Review process was introduced in 2000 after several project failures in the UK and the reevaluation of the government’s effectiveness in projects and programme delivery.

**Major Projects Review Group (MPRG):** Sponsored by HM Treasury, the IPA coordinates the MPRG, which is an independent group of experts from the government and private sector. The MPRG challenges projects on deliverability, affordability and value for money at key points in the HM Treasury approvals process and as required at other key decision points during a project’s lifecycle.

**IPA Quality Reviews:** In addition, the IPA has enhanced the quality review process with a range of different independent assurance reviews. Depending on the project cost and the department’s track record of executing projects of similar complexity, these reviews range from formal gateways to more bespoke ‘critical friend’ reviews.

**How is IPA making a difference in public sector project delivery?**

The IPA, including its predecessor entities such as the MPA and the IUK, have contributed remarkably to enhancing the project preparation ecosystem in the UK. These include:

- **Setting project standards and good practice guidance:** This includes documentation related to all major aspects of project preparation and project evaluation, such as project initiation route-maps, independent assurance methodology and other technical guidance documents and templates.

- **Infrastructure Delivery Support:** IPA has a team
of commercial specialists that provide direction to the government and its agencies on all aspects of infrastructure delivery. The specialists can be deployed alongside the senior leaders and project teams to strengthen client capability. IPA also provides HM Treasury and the Cabinet Office with commercial advice on business case approvals for specific projects.

- **Training and leadership development:** Based on the recognition that great project leaders deliver great projects, IPA has partnered with Oxford Said Business School to create the Major Projects Leadership Academy (MPLA). MPLA aims to improve the ability of senior civil servants to lead major projects and is regarded as the gold standard for project leadership training. It improves the senior civil servants’ ability to lead major projects with the aim of creating a cadre of world-class project leaders. Over 400 professionals have enrolled in the MPLA, and 250 have graduated to date. The MPLA received a Silver Award from the European Foundation for Management Development (EFMD) for their Excellence in Practice Awards, in the category of professional development. In addition, there are other project leadership training, apprenticeships and future leaders’ programmes that have been launched by IPA.

- **Project leadership development:** The IPA plays an important role in equipping project leaders with the right skills, training and capabilities to deliver infrastructure projects. In 2017, the IPA launched the Project Delivery Capability Framework (PDCF) which outlines a common language for the profession and defined career paths to help manage their careers. This framework is now being used by all major departments to help drive professionalism. In addition, the Government Online Skills Tool (GOST) supports the roll-out of PDCF by allowing individuals to assess their skills and competencies against any project role, and to identify appropriate development. It is currently being used by over 4,000 project professionals across government, and this number will grow following full roll-out.

- **Independent quality assurance:** IPA uses independent experts for peer review and quality assurance of projects at critical stages, against a clear set of project standards. During 2017-18, the IPA conducted 230 independent assurance reviews on the Government Major Projects Portfolio (GMPP) projects. The IPA has created an assurance review pool of over 1,600 independent assurance reviewers from across government and industry.

- **Performance Review:** The IPA have developed the Transforming Infrastructure Performance report to identify ways the government, working with industry, can improve the quality, cost and performance of UK infrastructure, building on the Infrastructure Cost Review 2010 - 2014. At the upstream end, the IPA supports the preparation of the National Infrastructure Delivery Plan, which brings together all of the government’s infrastructure delivery priorities over the next five years; and the National Infrastructure Construction Pipeline which is a forward-looking pipeline of planned projects and programmes in economic and social infrastructure and housing.

### IPA IN PRACTICE

The IPA has collectively supported over 720 PPP projects with a capital value of over £57 billion ($73 billion) and 6 PF2 projects with a capital value of £1 billion ($1.2 billion), including 46 schools under the Priority Schools Building Programme and the £430 million ($438 million) Midland Metropolitan Hospital.

Although not one of the 720 PPP projects mentioned above, another major project supported by the IPA is the Thames Tideway Tunnel, a 15-mile sewer tunnel under the River Thames. While it is financed and delivered by the private sector, and supported by the Department for Environment, Food and Rural Affairs (Defra), the IPA has supported the successful delivery of the project by:

- Providing direct support in establishing a finance package and engagement with potential investors
- Policy advice at key stages of the project such as ministerial approval and the passing of legislation
- Senior project leaders graduating through the Major Projects Leadership Academy
- A long-term secondment to Defra to provide ongoing expert input
5. South Korea

FACT SHEET

| 1.5 | 3% | 3.5% | 3.02% | 41 |

KEY LEARNINGS

South Korea’s project preparation framework has evolved rapidly since the 1997 Asian financial crisis, with emphasis on strengthening its public investment management processes, which now incorporate independent transparent reviews and a sharp focus on total cost management, including use of robust quantitative frameworks for feasibility studies and value for money analysis.

While line departments largely drive project feasibility and implementation, setting up and vesting powers in PIMAC to operate as a specialised project preparation agency has helped augment capacity and create necessary guardrails to facilitate greater rigour and integrity in project preparation.

1 Source: IMF
2 Source: GI Hub

Project Preparation Landscape

Although South Korea has sought to put in place mechanisms to manage infrastructure investments since the mid-1970s, including the creation of the Economic Planning Board (EPB) for investment planning and the Deliberative Committee (IPDC) for investment reviews, the major transformational reforms happened in 1994, with the introduction of the Total Project Cost Management (TPCM) system and the Private Capital Inducement Act (PPP Act). Under TPCM, the Ministry of Economy and Finance (MOEF) closely monitors expenditure on large scale projects. The PPP Act, did not, however, translate into large investments, owing to limited risk evaluation, lack of government support, limited experience of staff and inadequate process rigour and limited budgets.

Learning from the fiscal impact of the Asian Financial crisis, the Korean Government, in 1999, introduced a slew of measures to improve the public budgeting system, as well as to remove some of the constraints to the PPP model. Accordingly, the Enforcement Decree of the Budget and Accounts Act established that a separate Pre-Feasibility Study (PFS) undertaken by the Public Investment Management Centre (PIMA) for large projects be made mandatory. In addition, a new PPP law, ‘The Act on Private Participation in Infrastructure’, was adopted to remove critical constraints of PPPs. The Private Infrastructure Investment Centre of Korea (PICKO), was created to provide project preparation support including in the preparation of feasibility studies, project reviews, and evaluation. While PICKO was focused on reviving private sector investment, PIMA was created to ensure quality control and independent review for large public investment projects.

Momentum in the development of infrastructure picked up further post-2005, following a second amendment to the PPP Act. PICKO and PIMA were merged to form the Public and Private Infrastructure Investment Management Centre (PIMAC) under this Act.
Since then, the PPI Act 2005 and the PPI Act Enforcement Decree 1998 have provided the over-arching legal framework for both public and private infrastructure investments. The PPP Basic Plan and the PPP Implementation Guidelines provide the framework for project preparation and implementation.

The Ministry of Economy and Finance (MOEF) is the apex institution for private investment in infrastructure. PIMAC provides technical support and guidance for line departments and MOEF in managing project preparation, procurement and implementation.

A snapshot of the project preparatory landscape in South Korea is summarised below:

**Project conceptualisation and planning:** At the beginning of every year, line departments prepare a medium-term (5-year) project plan based on which MOEF finalises its National Fiscal Management Plan (NFMP). The NFMP serves as the reference planning and fiscal management document for line departments to prepare their respective annual budget plans. NFMP 2017-21 envisages an aggregate expenditure of KRW 2270 trillion ($2 trillion), with government spending on infrastructure estimated at KRW 16-20 trillion ($14-18 billion).

**Project feasibility studies and structuring:** This stage may involve multiple agencies, depending on the nature of project assistance. While feasibility studies are managed largely by the line departments, PIMAC plays a significant role in the case of PPP projects and preparatory studies for large projects. In the case of large projects, which require central assistance of more than KRW 50 billion ($44 million), MOEF approval is required before initiating the feasibility study. The MOEF approval is based on the recommendation of the Pre-Feasibility Study (PFS) report by PIMAC. In the case of a PPP project, PIMAC undertakes an independent assessment of the line department studies under the Value for Money (VfM) test. Based on the VfM test results, MOEF and PIMAC suggest alternate financing models for maximising benefits. Between 1999 and 2015, PIMAC conducted VfM tests for more than 479 projects and the PFS test for 631 projects.

**Project appraisal and review:** The project appraisal and review follow distinct paths (under a unified framework) for PPPs vs. public sector projects. In the case of solicited projects using public financing, the projects are part of the budget plan of the line department subject to approval from MOEF. In the case of solicited projects using the PPP model, project approval is provided by the Project Review Committee, chaired by MOEF where the project size is greater than KRW 200 billion ($178 million) or the central government subsidy exceeds KRW 30 billion ($27 million). In other cases, the line departments approve the project and notify MOEF and PIMAC.

**Financing project preparation:** Project preparatory activities for public and private projects are largely financed by budgetary allocations at the federal and sub-national level.

In the case of unsolicited projects using PPP financing, the project plan is prepared by the private sector, while the project review is undertaken by PIMAC.

**PIMAC – Building quality and rigour in project preparation**
PIMAC’s role in the project preparation process is an example of continuous learning and adaption. Created to enable comprehensive and systematic management of both traditional public investment and PPPs, PIMAC is organised along three divisions, namely, (i) Public Investment division, (ii) Public-Private Partnerships division and (iii) Policy and Research division.

- **The Public Investment division** conducts and manages PFS, supports policy research on public investment management and manages the Reassessment Study of Feasibility (RSF).
- **The PPP Investment division** formulates PPP Annual Plans and develops PPP guidelines, conducts evaluation of PPP projects, undertakes research on PPPs, supports financing and refinancing of PPPs, and undertakes capacity building and training.
- **The Policy and Research division** supports research on project evaluation methodology, and SOE project appraisal.

PIMAC has spearheaded the implementation of multiple policy and process interventions to improve the quality of project preparation and thereby reduce wasteful expenditure, including the following:

- **Independent review process for project approval:** PIMAC provides an independent review for project preparation by conducting various studies and evaluations, including the PFS, RSF, Reassessment of Demand Forecasts (RDF) and ‘Feasibility study and VfM analysis’ (for PPP projects). While the PFS provides an initial filter for project selection, the RSF and RDF reformulate and independently check outcomes of feasibility studies and demand forecasts. PIMAC organises a multi-disciplinary expert team, along with its in-house staff, for these evaluations. The review leverages PIMAC’s multi-
sectoral internal know-how and brings in expertise from external stakeholders, including from KDI (project management), university professors (transportation demand analysis), and private engineering firms (cost estimation).

**BETTER DILIGENCE THROUGH PFS AND ITS IMPACT**

Pre-Feasibility Studies (PFS) were introduced in 1999 and formalised in 2006 for large-scale projects to improve rigour in project preparation. To be completed within a timeframe of four months, the PFS assigns analytical hierarchy process (AHP) weights to different facets: Economic analysis (35-50%), Policy Analysis (25-40%), and Balanced Regional development (25-35%). If the AHP score is ≥ 0.5, a project is appraised as feasible.

Such an independent review process, with clear and transparent assessment criteria, has helped in the early identification of unviable proposals and has led to significant cost savings.

Between 1994 and 1998, 32 of 33 large projects were approved as feasible. Post the introduction of the PFS and stringent guardrails, 422 of the 665 projects reviewed by PIMAC (63% of the projects) were deemed feasible. The process is estimated to have enabled budgetary savings of KRW 129.4 trillion ($115 billion).

- **Stakeholder engagement in project development:** PIMAC’s PFS studies are guided by a transparent stakeholder engagement process and follow a ‘Five Meeting Rule’. The Five Meeting Rule includes i) Progress Check meeting, ii) KDI 1st Check meeting, iii) MOEF 1st Check meeting, iv) KDI 2nd Check meeting, and v) MOEF 2nd Check meeting. The review includes MOEF, line departments, PIMAC and field specialists from the private and public sector.

- **RIGOROUS VFM EXAMINATION**

  Article 7, Paragraph 3 of the Enforcement Decree of the PPP Act stipulates the implementation of a VfM Test. The Competent Authority uses VfM reports as basic material to make a judgment on whether to move forward with the PPP project proposed by the private proponent.

  The VfM test is strongly controlled by PIMAC and supports decision making at three stages: (i) Decision to invest, (ii) Decision to implement by PPP, and (iii) Present a best practice. The VfM test reports are an important input into tender evaluation and in negotiations.

- **Mapping guidelines for preparatory activities:** PIMAC has formulated guidelines for all major project appraisal and approval processes, including ‘Feasibility and VfM’ test guidelines, Request for Proposals (RfP) preparation, tender evaluation, Build-Transfer-Lease (BTL) project management, etc. In a bid to standardise output quality, PIMAC has also prepared standard output specifications by facility (school, military housing, and integrated school facility) and standard guidelines for PFS in general, road, and railway sectors.

- **Risk allocation frameworks and cost management:** PIMAC has revised risk-sharing mechanisms, incorporating lessons from the former Minimum Revenue Guarantee scheme, to enhance private interest while rationalising government support. PIMAC also undertakes resource (cost and time) reviews for large projects at each stage of the project lifecycle under its Total Project Cost Management framework.

- **Capacity building programme:** PIMAC offers periodic capacity building programmes for elected officials and technical staff. This includes domestic programmes sponsored by PIMAC and MOEF or international programmes by multilaterals/donor agencies. The objective is to inculcate the learnings from the PPP processes globally.

The efficacy of Korea’s policy framework and project preparation processes is reflected in its infrastructure delivery outcomes. By 2016, an estimated 699 projects involving an expenditure of $93.8 billion had been implemented since the framework became operational in 1999.
6. Netherlands

FACT SHEET

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KEY LEARNINGS
The Dutch Multi-Year Programme for Infrastructure, Spatial Planning and Transport (MIRT) provides a unique approach to integrated planning and collaborative project preparation, by implementing sustainable solutions that address multiple issues. Its salient features include:

- A systematic funnelling of problems into a solution-oriented approach
- Taking a broad approach by looking beyond the sectoral boundaries
- Creating a pipeline of projects through a long-term planning horizon
- Administrative reliability, transparency and management of finances.

Project Preparation Landscape
The responsibilities for project preparation are decentralised to respective line departments and sub-national entities, and the Ministry of Finance is responsible for establishing the policy on budget execution, including the Design Build Finance Operate Maintain (DBFOM) policy, monitoring application of the budget execution policy, and providing guidance on cross-project issues.

For large infrastructure projects, the Netherlands has adopted a unique collaborative approach, namely The Multi Year Programme for Infrastructure, Spatial Planning and Transport (MIRT) framework, developed by the Ministry of Infrastructure and Water Management (MIWM). MIRT comprises infrastructure projects and programmes in which the national and regional governments collaborate to find a common solution to specific problems, after conducting analysis from different perspectives and development objectives.

PROBLEM ORIENTED APPROACH
While a typical solution to tackle the daily tailbacks on a section of the motorway near a big city would be to upgrade the motorway, the Netherlands adopts a more holistic approach. MIWM consults the province, the municipalities, and the regional business community, asking about their plans for the area. The province has conducted a mobility analysis of the region and knows that the tailbacks are mainly caused by local commuter traffic. The municipality has launched a ‘Move Yourself to Health’ programme and aims to encourage residents to cycle. Together, the parties arrived at a joint ambition: improving mobility between the residential area and the business park and improving residents’ health.

1 Source: IMF
2 Source: National Accounts of Netherlands
Following an exploration of several solutions, they decided to go for a solution that involves an express bicycle connection to the business park, in combination with agreements with employers regarding the promotion of cycling and flexible working hours, and influencing the behaviour of motorway users in order to improve traffic circulation. The package offers a solution to both accessibility and health issues. In addition, it contributes to the sustainability goal of MIRT, namely to reduce CO₂ emissions.

The MIWM is a participant in all MIRT tracks (project or programme). However, other ministries and regional partners may also participate or launch MIRT tracks. Such regional partners may be the provinces, municipalities, transport regions, or district water boards. NGOs and businesses may also participate by providing input to solutions.

In the MIRT framework, the country is divided into five regions, with the central and local governments jointly designing the Area Agenda for each MIRT region. The Area Agenda presents a coherent vision for development in the area. Annually, administrative consultations take place between the central and local governments for discussion on current projects in the region and for making financial and/or administrative agreements where necessary.

The MIRT process for project preparation

In an MIRT track, the parties work phase by phase to substantiate the task in increasingly concrete terms. Every MIRT phase ends with a political/administrative decision on the subsequent phase. The starting point for every MIRT track is the Initial Decision to launch an MIRT Exploration. The Initial Decision stipulates the role to be played by each of the stakeholders and requires that financing sources for 75% of the cost of the most obvious solution are identified. As options are collectively evaluated, the Committee may reach a ‘Preferential Decision’. At this stage, the chosen option is documented in fair detail, along with the legal requirements and financing method. Subsequently, at the ‘Project Decision’ phase, the project design is finalised to enable procurement at the ‘Acceptance Decision’ stage.

MIRT projects can be either implemented through public financing or through PPPs on a DBFOM basis. Each year, the MIRT is presented to the Lower House as an appendix to the Budget of the MIWM and this provides the necessary political and fiscal commitment to the MIRT.

Bureau Gateway review for quality enhancement

The Dutch Gateway Review Method is based on the Gateway Program in the United Kingdom. It is housed in the Bureau Gateway in the Ministry of Interior and Kingdom Relations. Since 2007, over 50 high risk projects and programs have been reviewed with very positive results. This is part of the Dutch Government’s initiative to improve management and delivery of high risk projects by providing an independent confidential assessment and improving the capability of project management skills in government via actively sharing lessons learned. Typical project level gateway reviews include:

**Gateway 1** – Purpose and justification is performed at the start of a project to confirm its rationale.

**Gateway 2** – Preparation and Procurement Stage is executed once the project approach is firm and seeks to examine whether the project’s rationale and the intended results are still demonstrable and desirable.

**Gateway 3** – Realisation Stage is executed as soon as the suppliers are formally approached and seeks to verify whether the intended approach will be successful in this realisation phase.
Gateway 4 – Readiness for implementation
is performed before the project team transfers
its result to the line organisation(s) or just before
the implementation phase.

The Gateway Review is not mandatory and is usually
performed as a confidential peer review assessment
at the request of a manager. The Gateway Review
provides an independent view on the current progress
of the project or program including observations
and recommendations.

How has the MIRT framework streamlined project
preparation in the Netherlands?

• **Good practice guidance on project preparation:**
  Through the former PPP Knowledge Centre, the
  Netherlands has developed a knowledge base of
good practices in developing large infrastructure
  projects. This know-how has evolved into the
  sophisticated framework of the MIRT. MIRT project
  preparation is steered by good practice procedural
guidance and tools such as social cost benefit
  analysis, preparation of business cases, risk
  management, project governance, gateway
  reviews etc. that have contributed to successful
  project execution.

• **Prescribing a wide base approach for project
evaluation:** Complex projects benefit greatly
  from an integrated region-oriented approach
to decision making that cuts sectoral barriers.
Through the prescribed Consultations Committee,
MIRT helps in bringing in varied perspectives on
spatial functions, such as transport, residential and
commercial development, flood risk management,
and environmental impact, into the decision-making
process for a project.

• **Enhanced ownership by all stakeholders:**
  A consultative approach to project development
can often fail unless it is complemented by
allocating responsibility for implementation.
The MIRT framework requires that all stakeholders
involved in the consultation are responsible for
ensuring the feasibility of the project by providing
financial resources wherever required and
enabling implementation through legal and policy
interventions. This furthers the wide base approach,
as inputs from multiple stakeholders must be
accompanied by ‘an intention to work things
out together, from start to finish.’

• **A multi-layered decision-making approach:**
The MIRT process prescribes a funnelling approach
to decision making, with decisions being taken
at multiple phases of project preparation and
implementation. For each phase, the framework
specifies the nature of the decision to be taken
and the process to be followed. This multi-layered
approach allows for less optimal solutions to be
filtered, along with compelling the Consultations
Committee to re-evaluate project decisions
at each stage.

• **Increased transparency and accountability:**
The MIRT Overview, published on an annual basis
as an annexure to the Budget, is an informative
publication on the state of affairs and the planning
of government projects and government programs
in the MIRT framework. Furthermore, all decisions
taken by the Consultations Committee for an area
are presented to the House of Representatives,
along with progress updates on site visits by
members of the committee. MIRT also requires
that all projects have a clear vision, and well-
articulated goals and success factors, to enhance
understanding.

• **Creation of a pipeline of bankable projects:**
  Under the five-year planning horizon of MIRT, a pipeline
  of projects is developed. As projects are filtered
  through each of the decision stages, the quality of
  projects in the pipeline is increasingly strengthened
  – allowing for only viable projects to reach the
  realisation stage. Information on the project
  pipeline and their progress are kept updated
  on the MIRT portal.

• **Extensive capacity building initiatives to coach
practitioners on the framework:** MIWM has
deployed a learning portal, with published guidance
documents on the MIRT process, as well as a
platform for practitioners to share their experiences
and engage in discussions. The Ministry also
conducts intensive courses on the framework,
open to civil servants as well as private experts,
along with Knowledge Meetings and Masterclasses
on various aspects of the framework.

• **Gateway review process for quality enhancement:**
The Dutch Gateway Review process also provides
an opportunity for government project managers
to enhance the quality of their project
preparedness.
CASE EXAMPLE: SMARTWAYZ.NL

Initiated by the province of North Brabant, Smartwayz.NL is a programme modelled on the MIRT framework. The programme comprises eight related projects in two provinces – North Brabant and Limburg. These projects are diverse but inter-connected, including smart mobility solutions to widening motorways and tackling transport hubs.

Smartwayz.NL is managed by a programme council comprising representatives from government, from both provinces and municipalities, MIWM, and Rijkswaterstaat\(^4\), and knowledge institutes and private sector specialists. While each of the individual projects are managed by their own steering groups, the Council is responsible for managing the interdependency between the projects and the steering groups.

Together, the council has raised funds of €1 billion for the implementation of these projects. Smartwayz.NL moves away from exploring enhancing accessibility through the construction of roads only – it also looks at strengthening public transport, as well as incubating technological innovations such as automated driving and logistics management.

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\(^4\) The national agency in charge of the implementation of public works and water management.
7. South Africa

FACT SHEET

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KEY LEARNINGS

South Africa has adopted a systematic approach to project planning and preparation that has delivered large success in crowding-in private investment in infrastructure. One such example is the Renewable Energy IPP Programme (REIPPP), whose success can be attributed to:

- Dynamic leadership, expertise and autonomy, which helped in delivering the program to international standards
- Adoption of a programmatic approach to energy auctions in consultation with market participants, which created high credibility
- Adequacy of project preparatory financing, which led to high quality documentation and processes
- High governance standards and professionalism of the programme team, which encouraged private participation

Project Preparation Landscape

Project preparation responsibilities in South Africa are mostly handled by the respective government departments, sub-national governments and sector parastatals, such as ESKOM (energy), Transnet (surface and marine transportation), and SANRAL (highways).

Project conceptualisation and planning: The New Growth Path and the National Development Plan (NDP) 2030 prepared by the National Treasury serve as vision documents, while the National Infrastructure Plan championed by the Presidential Infrastructure Coordinating Commission (PICC) details 18 Strategic Infrastructure Projects to focus on.

The line departments prepare five-year strategic plans, and annual asset management plans, which form the core planning documents and inputs to the budget document. Based on the project plan, the Treasury finalises a three-year Medium-Term Expenditure Framework (MTEF), which serves as the guidance document on the fiscal situation of the Government.

Project appraisal and review: The Treasury’s Standard for Infrastructure Procurement and Delivery Management (SIPDM) provides standards for the concept note, pref feasibility and feasibility studies.

The project appraisal and review are done through a multi-institutional framework and depend on the nature of project assistance. The project appraisal process covers financial analysis (lifecycle cost and Internal Rate of Return (IRR)), economic analysis (cost-effectiveness analysis, and economic impact assessment), risk assessment, sensitivity analysis, and review of the implementation and procurement plan. Approval for projects are:

- Centrally-funded: as per capital planning guidelines.
- Strategic projects: as per the Budget Facility on Infrastructure.

1 Source: IMF
2 Source: GI Hub
PPP projects: PPP Unit under the National Treasury supported by the Government Technical Advisory Centre (GTAC) and department-level PPP units like REIPPP. Projects also need to be approved by the respective sponsors of project preparation facilities.

The Treasury follows a four-stage review process at the following stages:

- Approval I Completion of the feasibility study
- Approval II A Preparation of the bid documents
- Approval II B Evaluation of bids
- Approval IV Conclusion of negotiations

Project preparation financing: Financing for project preparation comes from three sources:

- Budgetary allocation within the respective line agencies and state-owned enterprises (SOEs), including SANRAL (Roads), TRANSNET (Rails, Ports and pipelines), PRASA (Railways), ESKOM (Power), SAFCOL (Forestry), Trans-Caledon Tunnel Authority, Rand Water, and DBSA (Project financing).
- National and regional level project preparation facilities. For example, the National Treasury has created a project preparation fund to support the preparation of projects targeting private investment.
- Bilateral financing, such as the European Union-funded National Development Policy Support Programme for supporting NDP implementation and the Government Technical Advisory Centre (GTAC) Project Development Account for PPP projects.

Independent Power Producer Procurement programme (REIPPP) transformed the PPP landscape

While the project preparation track record for South Africa has been mixed, the Renewable Energy Independent Power Producer Procurement (REIPPP) programme of 2011 stands out as a positive story, despite some current challenges.

The REIPPP programme was a landmark initiative implemented by the Department of Energy (DOE) to rapidly scale-up grid connected renewable energy generation through private participation. REIPPP was created against the historical backdrop of several failed initiatives to contract Independent Power Producers (IPPs), owing to institutional shortcomings, capacity gaps and weak incentives to wean the monopoly of the incumbent parastatal.

To overcome these limitations and to run the REIPPP as a sophisticated, multi-project, multibillion-dollar international competitive bidding process for renewable energy, the DOE co-opted and used the assistance of the National Treasury’s PPP Unit to

ROLE OF STATE-OWNED ENTERPRISES IN PROJECT PREPARATION

The State-Owned Enterprises (SOEs) are independent entities partially or wholly owned by the government. South Africa is reported to have over 700 SOEs that together account for an estimated 76% of the country’s infrastructure investment. Some of the major SOEs include SANRAL, TRANSNET, PRASA, ESKOM, ALEXKOR (Mining), DENEL (Military equipment), SAFCOL, Trans-Caledon Tunnel Authority, Rand Water, and DBSA. These SOEs seek to promote a programmatic approach to project preparation, although fiscal challenges and credit limitations within SOEs have constrained infrastructure investment.

For example, in the case of TRANSNET, a project is guided by extensive review processes across four major phases:

- FEL 1 – Master planning and concept development.
- FEL 2 – Prefeasibility study.
- FEL 3 – Feasibility study and detailed engineering
- FEL 4 – Procurement and construction management

The detailed guidelines of each phase are explained in the ‘Project Life Cycle Process Gate Review Manual’. Apart from the four-stage review process, TRANSNET is also guided by a multi-year planning framework extending up to 30 years.
manage the process. A small team of technical staff from the DOE and the PPP Unit established a project office, known as the DOE IPP unit, which effectively functioned outside the departmental structure and acted as a facilitator for the REIPPP programme.

The PPP environment in South Africa during the launch of the programme was not favourable, with PPP activity having declined in the mid-2000s. A host of factors had contributed to this decline and included (i) policy uncertainty, (ii) limited government support, (iii) reversal of several PPP contracts, especially in social sector projects like prisons, and iv) negative public opinion over PPPs. A multi-dimensional approach to programme design and project preparation helped the REIPPP carve out a success story despite these overall constraints. Key facets of the approach included the following:

- **Leadership and programme champion**: The REIPPP team was headed by a dynamic officer from the National Treasury PPP unit with deep expertise in project appraisal. Several other key stakeholders were also drafted into the team early in the programme planning phase. Giving autonomy to this management team helped streamline programme management.

- **Resourceful and dynamic team**: The management team included experts from the legal, technical, banking and financial sectors to create a resourceful and dynamic project team. The team’s private sector experience and familiarity with management in private sector circles facilitated the engagement process. The team also created an entrepreneurial/start-up type of work culture, which was received favourably by the private sector players, as well as the bankers.

- **Access to an independent high-quality team for evaluation**: The team was supported by a high-quality private advisory team of private domestic and international advisers including international reviewers (Legal, Technical and Governance), project management consultants, legal support, and a financial and technical evaluation team. The primary reason for access to such a high-quality team was the availability of a dedicated project financing facility.

- **Adequate and sustained project preparation financing**: The REIPPP programme was backed by dedicated financing for project preparation and capacity building. Some of the sources include: (i) National Treasury made available through DBSA ~ $7.5 million; (ii) Technical assistance financing from bilateral donor agencies (Denmark, Spain, and the UK), and multilateral agencies ($6 million from the World Bank under the Global Environment Facility); (iii) self-financing through bidder registration fees and project development fees of 1% of the project cost.

- **Continuous engagement with the market participants helped shape the programme design**: The team had prioritised continuous engagement with the private sector players and bankers to ensure that the programme design was aligned with the prevailing market environment. This also helped allay general fears/concerns related to the PPP model during this period. Design factors, including up-fronting of the PPA and implementation arrangements, were an outcome of this effective engagement process.

- **High governance standards**: Transparency and high standards of professionalism in programme management, adherence to timelines, and high standards of quality assurance led to the programme’s credibility and resulted in high participation by the private sector.

Since inception, the REIPPP programme has received private sector investment of $15 billion. Overall 43 percent (i.e. 6376 MW) of the total targeted renewable energy capacity of 14,725 MW has been procured. 62 operational IPPs aggregating to 3744 MW reached commercial operation by 2017 and created 38,774 job years.

The challenge for the government now is to provide timely grid connectivity to the renewable energy IPPs and ensure that there is flexibility in the government budget to manage their fiscal commitments. This would require replicating the success in other parts of the electricity value chain to sustain this momentum and transformative change.
# 8. Mexico

## FACT SHEET

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<th><strong>1.1</strong></th>
<th><strong>3.1%</strong></th>
<th><strong>1.3%</strong></th>
<th><strong>2.7</strong></th>
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## KEY LEARNINGS

Mexico has seen private participation in infrastructure since the 1990s. However, limited institutional capacity in various government contracting agencies, especially at the sub-national level, created a large challenge for project preparation.

The National Infrastructure Fund (Fondo Nacional de Infraestructura, or FONADIN) was established in 2008 to accelerate private participation in Mexico’s infrastructure. FONADIN has been successful in providing high-quality project preparatory assistance and financing for infrastructure.

\(^{1}\) Source: IMF
\(^{2}\) Source: GI Hub

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**Project Preparation Landscape**

Project preparation activities are decentralised in Mexico, with federal and sub-national level Government Contracting Authorities (GCAs) undertaking project preparation for their respective jurisdictions.

**Project conceptualisation and planning:** Project planning is driven primarily by GCAs. The National Development Plan (NDP) and the National Infrastructure programme prepared by the Secretariat of Finance and Public Credit (SHCP) serve as guidance documents for infrastructure development. The NDP Plan envisaged an investment of $596 billion dollars across 743 projects, of which around 50 percent were in the energy sector, followed by urban services and housing (24%), and communications and transport (17%).

The GCAs are required to prepare a 5-year project roadmap and drive implementation. For example, Mexico’s successful renewable solar energy auctions were administered under the Ministry of Energy (SENER), with the fourth auction set to be administered by the Energy Regulatory Commission (CRE).

Preparatory studies are either financed by the respective budgets of GCAs at the federal and sub-national level or from project preparation funds managed by FONADIN, a public financial institution set up to attract private investment.
While project feasibility studies are largely handled by line agencies, project structuring involves multiple stakeholders, including the project financing entities (FONADIN, Investment Unit of SHCP, the Federal support programme for mass transit - PROTRAM etc.). In the case of PPP projects, the Investment Unit (IU) under the Ministry of Finance has issued guidelines applicable to PPPs, in terms of registry, social cost-benefit assessment, convenience and value for money as a PPP.

**MEXICO’S REFORMS AND RENEWABLE ENERGY SUCCESS**

Mexico's renewable energy program is shaped by its General Climate Change Law, which affirms Mexico's intention to increase clean energy generation to 35% of total generation capacity by 2024 and 50% by 2050. The solar program benefitted from reforms enacted in 2014, which introduced competition in generation and helped to create an independent grid operator (CENACE), enabling customers to purchase power directly from generators. Furthermore, large consumers will be required to consume clean energy directly or through the purchase of clean energy certificates issued by CRE against green energy consumption.

Three long-term auctions managed by SENER during 2016 and 2017 have created renewable capacity of 20 TWh with an investment of $9 billion. Together, these auctions helped Mexico to procure power at internationally low prices; solar at $19.7/MWh and wind power at $17.7/MWh.

**Project appraisal and review:** With respect to PPPs, the IU requires GCAs to prepare a business case for the project, which includes cost-benefit analysis, feasibility assessment and value for money analysis. In case of self-sustainable projects, the GCAs are required to obtain a binding opinion from the IU. On the other hand, for projects that require budgetary support, specific approvals are required from the IU. All projects that require support from the government budget at the federal level are reviewed and approved by the Inter-Ministerial Commission of Public Spending, Financing and Divestiture for incorporation into the federal budget, which is then approved by congress.

**Public sector capacity constraints led to the creation of FONADIN**

Prior to its establishment, government agencies faced several challenges in project preparation, such as:

- Limited focus on national plans and multi-year planning horizon
- Quality constraints on feasibility studies, leading to arbitrary traffic forecasts (overstating traffic numbers) and stress on public finances
- Absence of standardised guidance and weak oversight processes, which led to quality challenges in project preparation
- Institutional capacity constraints in the public sector to undertake adequate project preparation. These included limitations in appropriate design, cost and demand forecasts, as well as weak appreciation of risk issues and their management
- Most preparatory activities were driven largely through inadequate budgetary allocations, as there was limited access to project preparation financing and technical assistance facilities
- Limited appreciation of project preparation. The objective was to maximise PPP participation, however there was an inadequate focus on the preparatory aspects, leading to many of the projects not achieving financial close. Furthermore, inadequate time was provided for advisors appointed to undertake project due diligence and feasibility assessments
- Absence of a specialised entity that had the right resources and could enhance project preparation quality

Recognising the public-sector capacity constraints and to accelerate private participation in infrastructure, the federal government established FONADIN, which is managed by the National Development Bank of Mexico (Banco Nacional de Obras y Servicios Públicos or BANOBRAS), the country's leading lender to infrastructure. FONADIN was capitalised by transferring assets from the Fund for Support of Rescue of Highway Concessions (FARAC) and Infrastructure Investment Fund (FINFRA).

FONADIN focuses on PPPs in highways, ports, airports, environment, urban mass transportation, water and tourism. Today, FONADIN is one of the most important conduits for PPPs in Mexico. FONADIN provides financing and technical support for the planning, design, construction and final transfer of projects developed through private
sector participation. As of end-2016, FONADIN has supported, on a cumulative basis, 117 projects with almost $8 billion in investment, of which 44 percent was non-refundable, mobilising a total of $25 billion, mostly in highways (51 percent).

**FONADIN services include:**
- Support to identify infrastructure needs and projects
- Grants and recoverable support for preparatory studies and transaction advisory support
- Provision of subordinated/convertible loans, guarantees, and capital contributions to boost private investment
- Infrastructure financing instruments, including viability gap funds, guarantees and lines of credit

**FONADIN’s role in strengthening project preparation**
FONADIN has played a catalytic role in project preparation through (i) financing of preparatory studies, (ii) support to sectoral plans and (iii) building rigour in project evaluation, appraisal and approval processes.

FONADIN provides financing for preparatory studies for infrastructure projects through two facilities: recoverable or part-financing (for profitable projects) through a credit line for up to three years, covering 70% of the project preparation cost, and non-recoverable support (for socially important but less profitable projects) through grants, covering up to 50% of expenses. Projects seeking preparatory financing should (a) have private participation; (b) be procured through competitive bidding and (c) have a partial/full source of repayment.

Key highlights of FONADIN’s interventions include:
- **Support to the National Infrastructure Programme:** One of the major objectives of FONADIN is to support the implementation of the multi-year national infrastructure program, which is a six-year roadmap for infrastructure development prepared by SHCP. FONADIN provides technical and financial support for line departments/agencies in preparing the sectoral plans and project planning.

- **Strengthening sectoral focus through targeted programmes:** Many of FONADIN’s projects are under major sectoral programmes that incorporate PPPs in Mexico. These include the Toll Roads programme: PROMAGUA, the water operators’ modernisation programme: PRORESOL, a municipal solid waste programme; and PROTTRAN, which is the federal urban mass transportation programme.

- **Approval process and quality control:** FONADIN’s detailed operational guidelines elaborate eligibility criteria, project preparation, quality review and approval, such as:
  - Project preparation: FONADIN’s Business Unit supports GCAs to identify and prepare projects. This covers all activities related to identifying projects and conducting the studies required, including pre-feasibility studies, feasibility studies and project structuring.
  - Project review: The Studies and Technical Evaluations Unit reviews the financing proposals prepared by Business Units, requests changes, makes adjustments, and issues a technical report which it submits to FONADIN’s Sub-Committee for Evaluation and Financing.
  - Project approval: The Technical Committee reviews the technical and financial aspects of the project, considers the observations and recommendations by the Sub-Committee for Evaluation and Financing and approves or rejects the project.

- **Enhancing institutional capacity for project preparation:** FONADIN has a multi-tier project oversight, review and approval system with a judicious mix of government representation, banking and financial sector expertise, as well as subject-matter private sector expertise. For instance, the Sub-committee on Evaluation and Financing is chaired by the Ministry of Finance and comprises of members including the Director of the Public Credit Unit and Investment Unit in the Ministry of Finance, three representatives of the private sector who specialise in infrastructure (two must come from academic institutions and one from a civil society organisation), and one representative each from BANOBRAS, the Ministry of Public Administration and the division of BANOBRAS that manages the FONADIN trust.
FONADIN: Types of projects for which preparatory studies have been authorised

FONADIN has supported over 50 studies for various programs and projects authorised to receive financing for preparatory studies and transaction advisory support. These include projects across several sectors including Highways, Environment (including Energy and Waste management) Urban Transport, Water, Airports, Ports, Gas pipelines, and other social sectors including hospitals.

FONADIN's website reports an authorised financing of over $320 million in preparatory studies for infrastructure projects.
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