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Global
Infrastructure
Facility

Making Infrastructure Rewarding

A REPORT BY THE GLOBAL INFRASTRUCTURE FACILITY

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Abbreviations

AC	Advisory Council
AP	Advisory Partner
AR	Asset Recycling
ARI	Asset Recycling Initiative
DFW	Downstream Financing Window
DSCR	Debt Service Coverage Ratio
EM	Emerging Market
EMDE	Emerging Markets and Developing Economies
ETF	Exchange-Traded Fund
GIF	Global Infrastructure Facility
IISS	International Infrastructure Support System
LLCR	Loan-Life Coverage Ratio
MDB	Multilateral Development Bank
PPP	Public-Private Partnership
PSP	Private Sector Participation
WBG	World Bank Group

Executive Summary

It is widely acknowledged that adequate infrastructure is necessary to achieve the development goals of Emerging Markets and Developing Economies (EMDE). In spite of this recognition, the majority of EMDEs have an inadequate infrastructure stock, often because there has been insufficient investment in infrastructure.

The World Bank Group (WBG) estimates that approximately US$1 trillion is needed per year to meet the infrastructure needs of EMDEs.[1] Governments in these countries have limited financial resources and will not be able to address these needs by themselves. Therefore, private finance is necessary to close the gap between the demand for infrastructure and the funds available for infrastructure from public sources. However, there are several barriers to investment constraining the amount of private finance available for infrastructure projects. These include:

- **Weak project pipelines:** Projects in EMDEs tend not to be prepared at an acceptable quality that is necessary for them to be considered investment-ready.
- **High risks:** Investment decisions involve risk, and investors expect to be compensated for the risks they take. Risks that investors are concerned about include the poor rule of law, unexpected changes to policies, and economic uncertainty. In EMDEs the level of risk may be deemed too high for investors to bear.
- **EMDE infrastructure is not well-defined as an asset class.** For an asset class to be well-defined, there must be information about a group of securities (debt, equity) that share similar characteristics, behave similarly in the market, and are subject to similar laws and regulations. A functioning market is required to share this information efficiently, and EMDE infrastructure lacks that efficient market. This market is inefficient because of information asymmetries. These prevent the supply of finance from aligning with demand for finance, which means EMDEs are unable to attract capital from investors that are looking for long-dated and inflation-linked returns.

The Global Infrastructure Facility's (GIF) goal is to increase the level of private sector investment in infrastructure. It aims to achieve this goal by addressing the barriers to infrastructure investment and improving the overall infrastructure investment environment in EMDEs. Established in 2015, the GIF also serves as a global platform to integrate the efforts of institutions engaged in supporting infrastructure development in EMDEs.

The GIF seeks to address the critical barriers to private investment through the following solutions and instruments (Figure 1.1).

[1] "Global Infrastructure Facility", World Bank. 2016. Available at: www.globalinfrafacility.org

Figure 1.1: Barriers and WBG Initiatives to Address Them

Barrier to Private Investment	Instruments and Initiatives	Rationale
Weak pipeline of viable projects	Upstream Project Preparation Window (operational)	Improve project pipeline by increasing the number of structurally sound and bankable projects
	Project Assessment Tool (proposed)	Improve the quality and completeness of project preparation
Risks are perceived to be high	Downstream Finance Window (proposed)	Mobilize private capital through de-risking critical infrastructure projects
	Asset Recycling Program (proposed)	Encourage private sector involvement in brownfield projects, when risks are lower
EMDE infrastructure not well defined as an asset class	Emerging Markets Infrastructure Debt Index (proposed)	Position EMDE infrastructure as a recognized asset class

The four initiatives highlighted in blue were proposed to the GIF's Advisory Council (AC) during the 4th Advisory Council Meeting held on 5 October 2016 in Washington D.C. The initiatives received positive feedback from the AC. The AC welcomed these instruments as incremental steps toward bridging the infrastructure finance gap. However, the AC also felt that the GIF would need to build on these initiatives if it is to be a game changer in EMDE infrastructure finance.

1 Introduction

Many EMDEs have inadequate infrastructure to drive their development and are constrained from addressing this problem by significant financing challenges. Over 2.4 billion people globally currently lack access to improved sanitation,[2] and over 1 billion people live without electricity.[3] This infrastructure shortfall creates enormous economic and social costs for EMDEs.

EMDE Infrastructure Is Inadequate Because Investment Is Too Low

The World Bank estimates that approximately US$1 trillion is needed every year to meet the infrastructure needs of EMDEs[4]. However, not all of the infrastructure financing needed is being met currently, with the global infrastructure financing gap estimated to be US$350 billion a year.[5] Much of this financing gap exists in EMDEs.

The reasons for this gap include the lack of public resources to finance infrastructure and an investment environment that does not incentivize the private sector to invest sufficiently. If the financing gap persists it will continue to limit these economies' capacity to continue robust and sustainable growth over time.

The Private Sector Can Help Close the Gap with Some Changes

Private investment is needed to bridge this infrastructure gap, and with an estimated US$22 trillion in savings available globally, there are more than enough private sector resources seeking investments with attractive risk-adjusted returns to do so. [6]

However, investor appetite for EMDE infrastructure projects has declined significantly since the 2008 financial crisis.[7] This trend can be attributed, in part, to the tightening of financial regulations. More importantly, the unconducive investment environments in many EMDEs leads investors to associate infrastructure projects in EMDEs with higher credit risk.[8]

GIF to Play a Catalytic Role to Increase Infrastructure Investment in EMDEs

A more concerted effort is required to attract private finance to infrastructure projects in EMDEs. The GIF was established in 2015 to address this need. The GIF serves as a collaborative platform that brings together governments, multilateral development banks, and

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2 "Lack of Sanitation for 2.4 Billion People is Undermining Health Improvements," World Health Organization. 30 June 2015. Available at http://www.who.int/mediacentre/news/releases/2015/jmp-report/en/ (accessed 14 November 2016).

3 "Energy Poverty," International Energy Agency. 2016. Available at http://www.iea.org/topics/energypoverty / (accessed 14 November 2016).

4 "Global Infrastructure Facility", World Bank. 2016. Available at: http://www.worldbank.org/en/programs/global-Infrastructure-facility (accessed 17th October 2016).

5 McKinsey Global Institute. (2016) *Bridging Global Infrastructure Gaps*, p. 1. Available at: http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps [accessed 17th October 2016].

6 Schmidt-Traub, Guido. (2015) "Investment Needs to Achieve the Sustainable Development Goals: Understanding the Billions and Trillions," *Sustainable Development Solutions Network Working Paper,* no. 2, p. 17. Available at http://unsdsn.org/wp-content/uploads/2015/09/151112-SDG-Financing-Needs.pdf (accessed 27 June 2016).

7 Croce, R. D. and Yermo, J. (2013) "Institutional Investors and Infrastructure Financing," *OECD Working Papers on Finance, Insurance, and Private Pensions,* no. 38, p. 11-16.

8 Institutional Investors and Infrastructure Financing.

private sector investors to develop solutions that can ease current market constraints to infrastructure investment in EMDEs. Specifically, the GIF does this by expanding the pipeline of high-quality, well-structured, and bankable infrastructure projects in EMDEs. This helps to mobilize private financing for infrastructure projects in EMDEs with the aim of closing the financing gap.

Structure of this Report

This report presents a summary of the key reasons why EMDEs face an infrastructure financing gap. It also suggests several ways to make EMDE infrastructure more attractive for private sector investors. The solutions offered in this report are based on the recommendations of the participants at the 4th GIF Advisory Council Meeting on October 5, 2016 in Washington, D.C.

This report is structured as follows:

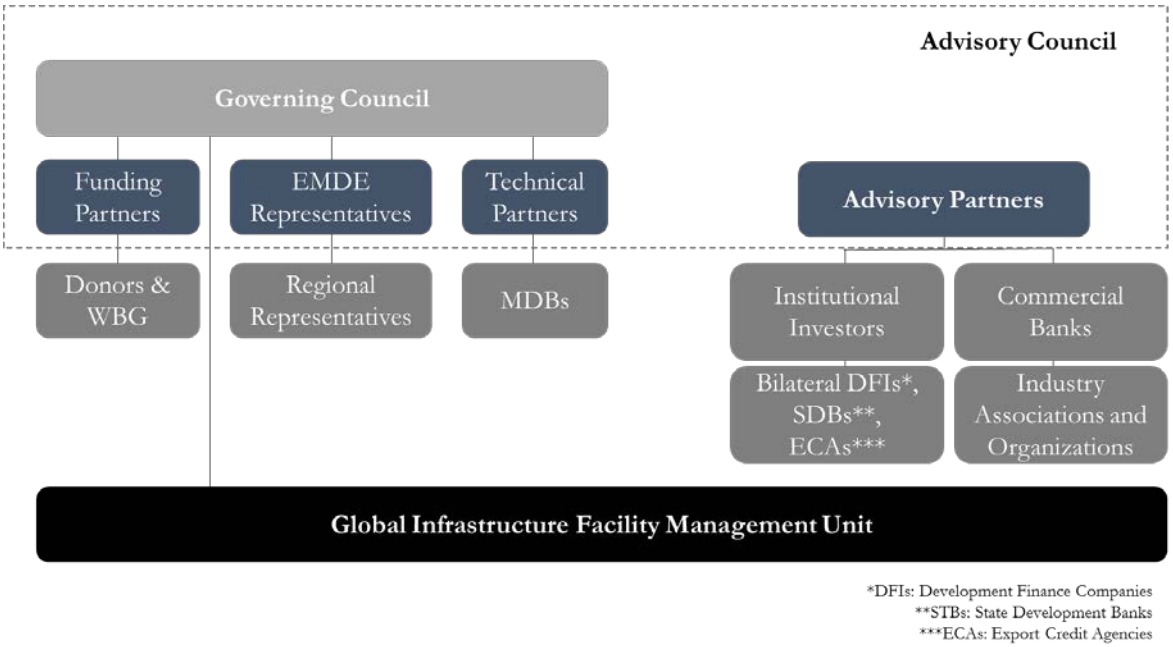
- Section 2 introduces the GIF and its objectives
- Section 3 discusses the challenges of financing EMDE infrastructure
- Section 4 focuses on some of the key barriers to private investment in EMDE infrastructure
- Section 5 presents a number of solutions proposed by the GIF to address the barriers to infrastructure finance in EMDEs
- Section 6 concludes the report
- Appendix A provides the agenda for the 4th GIF Advisory Council Meeting

2 About the Global Infrastructure Facility and the GIF Advisory Council

The GIF was established in July 2015 by the World Bank as a global platform to integrate the efforts of institutions engaged in supporting infrastructure development in EMDEs. The GIF is housed at the World Bank.

The GIF works in close collaboration with its Advisory, Technical, EMDE, and Funding Partners. Collectively, these partners form the GIF's Advisory Council (AC). The AC's primary role is to support the GIF in designing appropriate interventions that help improve the environment for infrastructure finance in EMDEs. It meets twice a year to discuss key infrastructure topics and initiatives being considered by the GIF. It also considers the infrastructure programs of select EMDEs and recommends how they can be more effective in attracting private investment. Figure 2.1 provides an overview of GIF Partners that form the AC.

Figure 2.1: GIF Partners



The Advisory Partners (APs) are a unique feature of the GIF's collaborative approach and represent a set of largely private institutions with a shared interest in expanding the market for private investment in infrastructure in EMDEs. They include pension funds, sovereign wealth funds, insurance companies, fund managers, commercial banks, and other financial institutions. Collectively, the APs hold over US$13 trillion in assets under management.

With their in-depth knowledge of the infrastructure market, the APs serve as a valuable sounding board for GIF-supported projects and investment programs. APs help ensure that projects are suitable for private investment by supporting early stage project preparation. This includes discussions related to the design and use of risk instruments to ensure project bankability. The Governing Council, which consists of the GIF's Funding Partners, EMDE

Representatives, and Technical Partners, holds the GIF's management accountable for delivering on its objectives and principles.

2.1 GIF Objectives

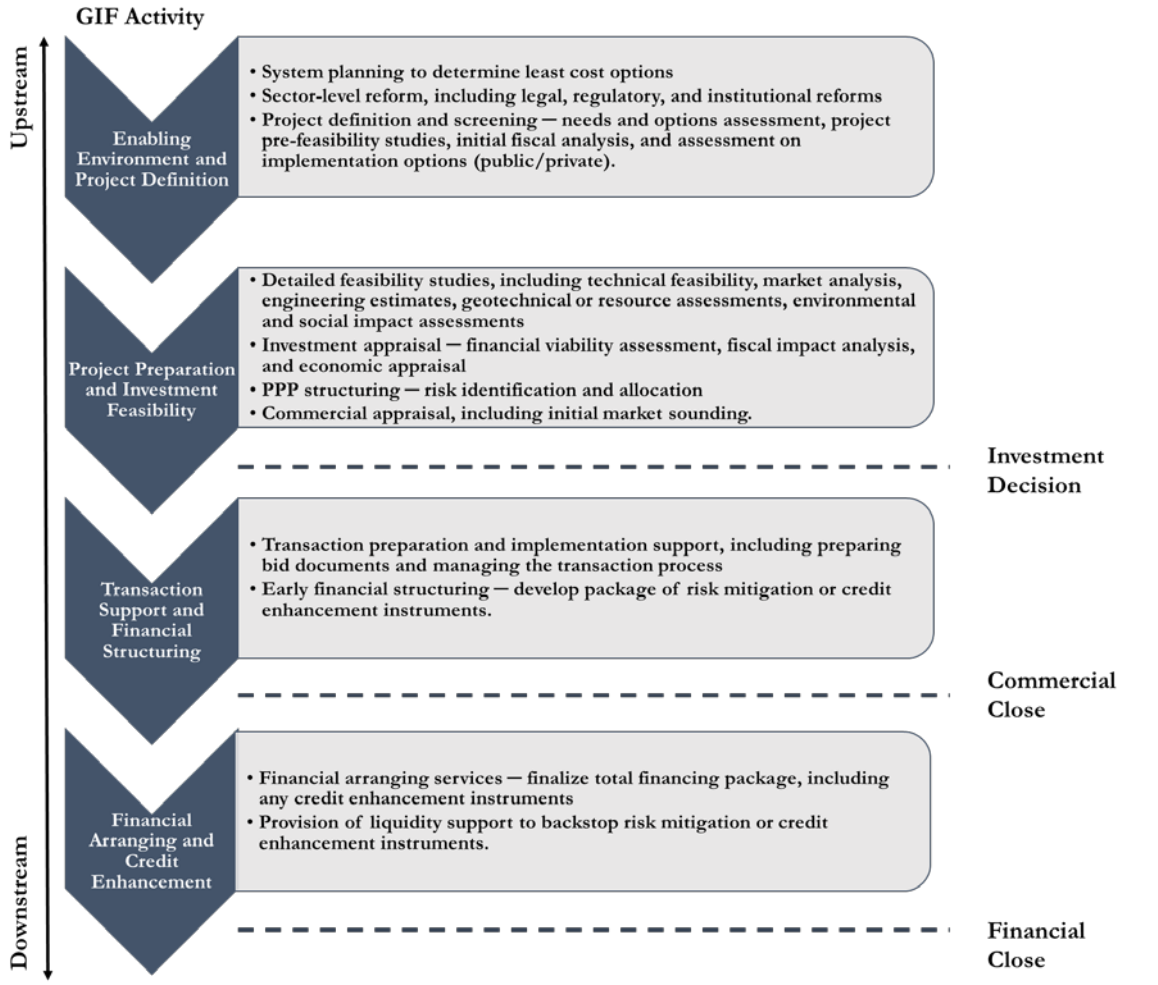
The GIF aims to find solutions to complex infrastructure financing challenges in EMDEs by leveraging the resources and knowledge of its partners. Specifically, the GIF's objectives are to:

- Expand the market for private infrastructure finance in EMDEs
- Support EMDE governments in developing a pipeline of sustainable and inclusive infrastructure projects that deliver value for money, are well structured and are bankable
- Broaden the range of private investors that are willing to provide long-term investment in a variety of infrastructure projects.

To achieve its objectives, the GIF provides the end-to-end support needed to bring well-structured and bankable infrastructure projects to market. This includes support on market structure, project identification and definition, project preparation through detailed appraisals, financial structuring, transaction support, and credit enhancement.

Figure 2.2 illustrates where the GIF's focus areas fall along the project development cycle and indicate where the major decision points occur in the process.

Figure 2.2: Overview of GIF Activities



2.2 Objectives of the 2016 Advisory Council Meeting

The GIF's primary platform for knowledge-sharing includes the GIF's website and AC Meetings. The AC Meetings focus on critical infrastructure finance topics to help guide the GIF strategy. Topics addressed apply to GIF strategy, and at times, to specific investment programs or projects of client governments.

The AC Meetings are closed-door, invitation-only events, limited to the AC members. The meetings are held twice a year and are co-chaired by the World Bank Chief Financial Officer and an Advisory Partner, currently Citigroup.

The 4th AC Meeting took place on 5th October 2016 in Washington, D.C., with the theme 'Making Infrastructure Rewarding'. The objective of the meeting was to discuss potential solutions to addressing existing constraints to infrastructure investment in EMDEs. The agenda of the 4th AC Meeting is available in Appendix A.

3 Infrastructure Development Landscape in EMDEs

Infrastructure growth has the potential to be transformational in developing regions. Well-planned and delivered infrastructure can expand access to essential services, raise living standards, reduce poverty, and enable inclusive and sustainable growth. However, many EMDEs lack the requisite infrastructure for development (Section 3.1) and are unable to attract the necessary financing to meet their infrastructure needs (Section 3.2).

3.1 Infrastructure Needs in EMDEs are High

Addressing global infrastructure needs, particularly in EMDEs, is required to meet the UN Sustainable Development Goals by 2030. Over 2.4 billion people lack access to improved sanitation,[9] and over 1 billion lack electricity.[10]

In particular, South Asia and Africa stand to benefit greatly from targeted infrastructure investments. In South Asia, almost a quarter of the population lacks electricity, and nearly a billion people do not have access to improved sanitation services.[11] It is estimated that India alone faces an annual financing gap of approximately US$26 billion to maintain its economic growth target of 9 percent.[12]

Almost two-thirds of the population in Africa does not have access to electricity or sanitation services.[13] Inadequate infrastructure has been estimated to reduce at least 2 percent of Africa's annual growth.[14] Meeting the infrastructure gap could help African firms enhance productivity by 40 percent and provide access to essential services.[15]

3.2 Challenges to Meeting Infrastructure Financing Needs in EMDEs

The WBG estimates that US$1 trillion a year of financing is required to build the modern infrastructure needed in EMDEs.[16] A significant portion of the financing needed remains unmet which has resulted in an infrastructure financing gap. The infrastructure finance gap in EMDEs is the result of four primary factors:

- High project costs (Section 3.2.1)
- Low-cost recovery (Section 3.2.2)

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[9] "Lack of Sanitation for 2.4 Billion People is Undermining Health Improvements," World Health Organization. 30 June 2015. Available at http://www.who.int/mediacentre/news/releases/2015/jmp-report/en/ (accessed 14 November 2016).

[10] "Energy Poverty," International Energy Agency. 2016. Available at http://www.iea.org/topics/energypoverty / (accessed 14 November 2016).

[11] "World Development Indicators," World Bank Data. 2016. Available at http://data.worldbank.org/indicator/SH.STA.ACSN (accessed 31 October 2016).

[12] Deloitte India. (2013) *Funding the Infrastructure Investment Gap.* India: Deloitte India, p. 18.

[13] World Development Indicators.

[14] Briceno-Garmendia, C. and Foster, V. (2010) *Africa's Infrastructure: A Time for Transformation.* Washington, D.C.: World Bank, p. 2.

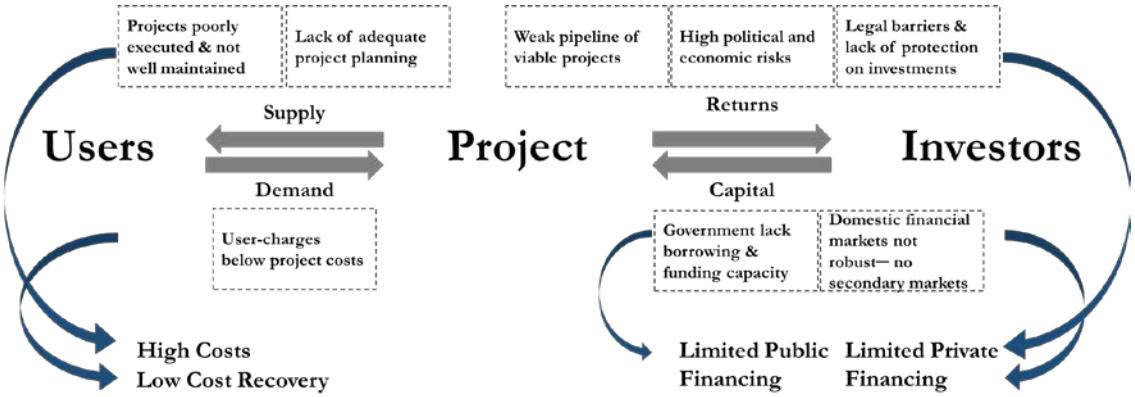
[15] Foster, V. (2008) 'Overhauling the Engine of Growth: Infrastructure in Africa', *Africa Infrastructure Country Diagnostic.* Washington, D.C.: World Bank, p.1.

[16] "Global Infrastructure Facility", World Bank. 2016. Available at: http://www.worldbank.org/en/programs/global-Infrastructure-facility (accessed 17th October 2016).

- Limited public financing (Section 3.2.3)
- Barriers to private investment (Section 3.2.4).

The root causes of these factors are illustrated in Figure 3.1 below.

Figure 3.1: Key Factors in the Infrastructure Financing Gap in EMDEs



These challenges have contributed to significant needs for investment in infrastructure globally. In Sub-Saharan Africa, it is estimated that a minimum of US$48 billion is required to address the financing gap between current spending on infrastructure and what is necessary to sustain inclusive economic growth.[17]

The size of this gap is expected to be higher when investments required to meet the UN Sustainable Development Goals are included. An additional US$2.5 trillion will be necessary annually in EMDEs for economic and social infrastructure, as well as infrastructure needed to mitigate and adapt to climate change.[18] In the energy sector alone, EMDEs would need to increase sector spending by 75 percent to US$1.8 trillion per year by 2035 to reduce their carbon footprint in line with the 2°C objectives and ensuring resilience against climate change.

3.2.1 Inefficient use of resources increases the demand for finance

Project costs typically escalate due to poor project planning, low levels of maintenance, and inefficient operations.

Poor project planning results in outcomes that drive up overall project costs in two ways. First, the lack of planning could lead to overprovision of services. Overbuilding diverts scarce resources from maintenance activities, which can drive costs further over time.[19] Second, poor planning of future infrastructure needs can result in inadequate service levels. For instance, insufficient electricity generation results in many Sub-Saharan African countries using expensive emergency generators to manage power shortages.[20]

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[17] Briceno-Garmendia, C. and Foster, V. (2010) *Africa's Infrastructure: A Time for Transformation.* Washington, D.C.: World Bank, p. 12.

[18] United Nations Conference on Trade and Development. (2014) *World Investment Report 2014 Investing in the SDGs: An Action Plan.* Switzerland: United Nations, p. 140.

[19] World Bank. (2009) *Deterring Corruption and Improving Governance in the Electricity Sector.* Washington, D.C.: World Bank, p. 60.

[20] *Africa's Infrastructure: A Time for Transformation,* p. 5.

Low levels of maintenance of existing infrastructure assets are also a common problem in developing countries.[21] This results in costly repairs and poor quality service over time. In Sub-Saharan Africa, for instance, it was estimated in 2008 that 30 percent of the urban and rural roads in most African countries needed rehabilitation due to low maintenance. Timely maintenance could have avoided approximately US$2.4 billion in capital expenses for rehabilitating roads.[22] Between 24 and 40 percent of the water produced in developing economies is lost, usually through leakage from supply systems, before it reaches customers.[23] Reducing this loss would have not only increased revenue by approximately US$2.9 billion each year, but also improve services to customers.[24]

There is also much resource wastage due to inefficient operations. For instance, it has been estimated that utility providers in Sub-Saharan Africa waste US$6 billion a year through over-staffing, weak revenue collection mechanisms, and network losses.[25]

3.2.2 Low cost recovery limits the financial viability of many projects

Uncertainty about the ability to fully recover costs is a critical barrier to scaling up the provision of infrastructure services. For adequate cost recovery, the sum of user charges and government contributions must equal or be higher than the total cost of providing the service, including the cost of capital.

Despite this, most developing countries do not set high enough tariff levels to recover the full cost of providing the service. The rationale for doing so is to ensure that essential services are affordable, however research has shown that low tariff rates tend to benefit those with higher incomes, rather than the poor.[26] [27]

Governments, in some cases subsidize the pro-poor tariffs that do not allow for full cost recovery, as do cross-subsidy programs. From an investor's perspective, government subsidies present a risk, especially if the funds for the subsidy program do not have long-term viability. Cross-subsidies and life-line tariffs for the poor are also risky to investors. Investors require robust project profiles to know that there will be sufficient demand from the higher tariff classes to offset losses made at the lowest tariff levels.

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[21] Andres, L., Biller, D. and Herrera Drappe, M. (2013) *Reducing Poverty by Closing South Asia's Infrastructure Gap*. Washington, D.C.: World Bank, p. 17.

[22] Briceno-Garmendia, C. and Foster, V. (2010) *Africa's Infrastructure: A Time for Transformation*. Washington, D.C.: World Bank, p. 10.

[23] G20. (2011) *Supporting Infrastructure Development in Low-Income Countries*. G20, p. 4.

[24] Kingdom, W., Liemberger, R., and Marin, P. (2006) *The Challenge of Reducing Non-Revenue Water (NRW) in Developing Countries*. Washington, D.C.: World Bank, pp. 4-5.

[25] *Africa's Infrastructure: A Time for Transformation*, p. 15.

[26] Klein, M. (2012) *Infrastructure Policy: Basic Design Options*. Washington, D.C.: World Bank, pp. 28-30.

[27] World Bank. (1994) *World Development Report 1994*. Washington, D.C.: World Bank, p. 31.

3.2.3 Limited public resources reduce the pool of capital available to finance projects

During the 1990s, it is estimated that the government financed approximately 70 percent of public infrastructure needs. The private sector accounted for 20 to 25 percent, with the remaining 5 to 10 percent being financed through official development assistance.[28]

The level of government investments in public infrastructure began to decline at the end of the 1990s for a variety of reasons:

- Private sector participation in infrastructure investments was expected to increase, which led several governments to reduce funds allocated to infrastructure
- Public spending was reduced because of fiscal adjustment programs
- Decentralization in infrastructure planning resulted in mismatches between resources and needs.[29]

EMDE governments continue to provide the bulk of financing for infrastructure projects. Nevertheless, EMDE governments remain fiscally constrained despite efforts to improve their fiscal environments[30]. Many developing economies struggle to raise sufficient tax revenues due to their narrow tax base and low national income.[31] Furthermore, unlike developed economies, EMDEs cannot easily access capital markets to close the financing gap. This aggravates the overall underinvestment in public infrastructure.

Though Multilateral Development Banks (MDBs) continue to be a valuable source of finance for EMDE infrastructure[32], these sources are limited by the fiscal constraints of donor countries. MDBs also have restrictions on the level of exposure for hard lending activities with individual countries that further limit the financing they can provide.

3.2.4 Private investment in infrastructure has not grown at expected rates

With the limitations that exist in public finance for infrastructure, private sector participation is critical for filling the infrastructure financing gap. The private sector can help governments overcome budget constraints and tap into private sector efficiency.

Though global private investment in infrastructure increased in the 1990s, these investments were concentrated in specific countries and sectors.

- Much of the private investment in the 1990s went to telecommunications and energy in Latin America, East Asia, and Eastern Europe[33]

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[28] World Bank. (2004) 'The Challenge of Financing Infrastructure in Developing Countries.' *Global Development Finance 2004: Harnessing Cyclical Gains for Development*. Washington, D.C.: World Bank.

[29] Pinstrup-Andersen, P. and Shimokawa, S. (2007) 'Rural Infrastructure and Agricultural Development', in: Bourguignon, F. and Pleskovic, B. (eds.) (2007) *Rethinking Infrastructure for Development*. Washington, D.C.: World Bank, p. 197.

[30] With the assistance of MDBs, many EMDE governments are adopting policies to increase public finance available for infrastructure investments. These include policies to improve tax collection rates to increase government revenues, and strengthening the financial standing and practices of state-owned enterprises to enable them to borrow against their balance sheets.

[31] G20. (2011) *Supporting Infrastructure Development in Low-Income Countries*. G20, p. 7.

[32] MDBs can lend at concessional and market rates. In addition, many provide grants and contribute equity to investments.

[33] Briceno-Garmendia, C. and Foster, V. (2010) *Africa's Infrastructure: A Time for Transformation*. Washington, D.C.: World Bank, pp. 20-21.

- Between 2010 and 2013, most of the private investment commitments in Sub-Saharan Africa were concentrated in the energy and telecommunications sectors.[34] Between 2014 and 2015, nearly all the investments were targeted at power generation[35]
- During the same period, investors in South Asia showed a preference towards the energy, transport and telecommunications sectors[36] [37]
- In both Sub-Saharan Africa and South Asia, water and sewerage accounted for relatively insignificant amounts[38] [39]

To meet the infrastructure needs in their countries, EMDE governments are increasingly interested in developing public-private partnerships (PPP) or encouraging private sector participation (PSP) in infrastructure. However, EMDE governments struggle to attract sufficient private finance.

In part, low participation rates are the result of market imperfections. Not all infrastructure sectors are appropriate for private participation. For example, rural roads, which tend to cover wide areas, are a weak candidate for private participation due to their high public good characteristics.[40] [41]

More critical, however, is the fact that private investors are constrained by the risks associated with investing in EMDE projects. Private investors require projects that provide an adequate return on investment. However, the regulatory, macroeconomic, and political risks present in many EMDE countries result in a hurdle rate of return that is too high, resulting in limited bankable projects for private investment additionally. Private lenders may be unwilling to lend to projects with high levels of risk unless sufficient credit enhancements or de-risking mechanisms are in place. The GIF's role is to help EMDEs address this constraint and reduce the barriers to investment. The GIF's TPs are increasingly putting more effort into addressing these barriers and mobilizing private investment and financing, with the ambitious goal of moving from "billions to trillions". We discuss these barriers in greater detail in Section 4 below.

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[34] Van Eerd, R. (2012) *2012 Africa PPI Data Update*. Washington, D.C.: Public-Private Infrastructure Advisory Facility, p.1.

[35] Kasper, H. (2015) *2015 Sub-Saharan Africa PPI Update*. Available at: https://ppi.worldbank.org/~/media/GIAWB/PPI/Documents/Data-Notes/AFR-Update-2015.pdf (accessed: 17t October 2016).

[36] Andres, L., Biller, D. and Herrera Drappe, M. (2013) *Reducing Poverty by Closing South Asia's Infrastructure Gap*. Washington, D.C.: World Bank, p. 14.

[37] Kasper, H. (2015) *2015 South Asia PPI Update*. Available at: https://ppi.worldbank.org/~/media/GIAWB/PPI/Documents/Data-Notes/SAR-Update-2015.pdf (accessed 17t October 2016).

[38] Verink, B. (2012) *2012 South Asia PPI Data Update*. Washington, D.C.: Public-Private Infrastructure Advisory Facility, p.1.

[39] Van Eerd, R. (2012) *2012 Africa PPI Data Update*. Washington, D.C.: Public-Private Infrastructure Advisory Facility, p.1.

[40] Public good exhibit characteristics of non-rivalry and non-excludability. Non-rival means that "the additional resource cost of another person consuming the good is zero." Non-excludable means that to "prevent anyone from consuming the good is either very expensive or impossible." (Rosen and Gayer, 2014, p.54).

[41] World Bank. (1994) *World Development Report 1994*. Washington, D.C.: World Bank, p. 115.

4 Barriers to Private Investment in EMDE Infrastructure

Private finance is necessary to close the gap between the demand for infrastructure and the supply of funds for infrastructure from public sources. However, investor appetite for EMDE infrastructure projects has declined significantly since the 2008 financial crisis.[42] This negative trend can be attributed, in part, to the tightening of financial regulations. More importantly, the investment environment EMDEs is not conducive to matching investors with infrastructure investments that provide a risk-adjusted return that allows for full cost recovery.

Governments and other stakeholders, including the MDBs, need to address key obstacles to attracting more investment to EMDEs. These obstacles include the lack of a robust pipeline of viable projects in EMDEs (Section 4.1), the perception that EMDEs have a high-risk investment environment (Section 4.2), and the EMDE infrastructure not being well-defined as an asset class (Section 4.3).

4.1 Weak Pipeline of Viable Projects

Before deciding to proceed with an investment, the private sector needs to be assured that a project is investment-ready. An efficient government will have a pipeline of projects prepared that are clearly viable investments and will communicate this to the marketplace. However, there is a shortage of well-prepared investments in EMDE pipelines. The lack of investment-ready projects is a key constraint to attracting private investment to meet EMDE infrastructure needs.

Project pipelines are not limited because there is a lack of viable projects. They are limited because governments do not have the capacity, experience, or understanding of private sector needs that allows them to prepare investment-ready projects. This means that many projects are delivered to market without enough information for investors to determine whether they are bankable.[43][44] There are several reasons for the inadequate quality project preparation in EMDEs. For example,

- **EMDE governments do not have the capacity or experience to develop projects adequately**.[45] Governments may not develop strategic infrastructure plans or plan on a sector-wide basis, which would allow them to optimize project selection and meet needs efficiently. As such, projects may not always be evaluated with a strategic lens that aims to maximize economic and financial efficiency. In addition, some countries may not have experience working with the private sector. This means they may not be familiar with the private sectors' expectations, or what types of analysis they will conduct to consider investing in a project.
- **EMDE governments may be unable to bear the costs of preparing projects.** The cost of preparing a project in developing economies with little experience in

[42] Croce, R. D. and Yermo, J. (2013) 'Institutional Investors and Infrastructure Financing', *OECD Working Papers on Finance, Insurance, and Private Pensions,* No. 38, OECD Publishing, pp. 11-16.

[43] G20. (2011) *Supporting Infrastructure Development in Low-Income Countries.* G20, p. 1.

[44] Klein, M. (2012) *Infrastructure Policy: Basic Design Options.* Washington, D.C.: World Bank, p. 9.

[45] *Supporting Infrastructure Development in Low-Income Countries*, pp. 11-12.

project preparation can be up to 10 percent of total project costs.[46] This is much higher than the costs seen in countries with more experience in project preparation[47]

- **Not all private developers are willing to bear project development costs**. Moreover, developers typically expect to recover the cost of project development through the eventual fees charged to customers, the government, or a donor. When governments regulate tariffs, this may limit the developer's ability to recover the cost of developing the projects.[48]

4.2 High Risks and High Perception of Risks

Investors are concerned about the regulatory, legal, political, economic, and financial landscape of countries in which they plan to invest.. Uncertainty about this landscape can lead to high investment risks, both perceived and realized. A lack of high-quality, reliable information about the investment environment, as well as past examples of the risks manifesting, create this uncertainty. Table 4.1 outlines examples of the types of risk that are common for infrastructure projects.

Table 4.1: Examples of Common Risks for Infrastructure Projects

Risk Type	Example of the Risk
Political	The risk of expropriation, civil unrest, or a transfer of power that is not peaceful, or corruption all put investments at risk
Regulatory	Changes in regulations can affect an investor's ability to charge cost-reflective tariffs or may increase costs unexpectedly
Legal	Changes in laws can eliminate the right to raise disputes in court between the investors and off-takers, or may remove the right to charge for services
Financial	Uncertainty about the creditworthiness of an off-taker introduces the risk that it may not make payments necessary for the project to be able to meet debt service resulting in a higher risk of default
Economic	Exchange rate fluctuations and high inflation rates can jeopardize returns to a project when payments are made in local currency but debt obligations are in a foreign currency

Economic uncertainty in developing countries also deters investment in infrastructure. The rate of return on investments can be drastically affected by unexpected fluctuations in inflation and exchange rates when payments are in local currency, and debt obligations are in a foreign currency.[49] The capital markets in EMDEs are often unable to provide adequate long-term

[46] G20. (2011) *Supporting Infrastructure Development in Low-Income Countries*. G20, p. 5.

[47] *Supporting Infrastructure Development in Low-Income Countries*, p. 5.

[48] Infrastructure Consortium for Africa. (2012) *Assessment of Project Preparation Facilities for Africa Volume A: Diagnostic and Recommendations*. Tunis: African Development Bank, pp. 37-49.

[49] Bhattacharya, A., Romani, M. and Stern, N. (2012) *Infrastructure for Development: Meeting the Challenge*. London: London School of Economics and the G-24, pp. 14-15.

currency hedges, thereby deterring investors that need to protect themselves against currency risk.[50]

Investors need to be familiar with an investment environment to reduce their perception of risk. Governments can increase investors' familiarity and comfort by building a track record of successful privately-financed infrastructure projects. This not only creates credibility for the government as a partner—it also gives the market the information it needs to price risks correctly.

However, EMDEs need to take steps to correct for the risks that are real as well. There are several examples of governments confiscating or expropriating returns from infrastructure investments. This continues to deter the private sector from investing in the region.[51] Further, the presence of an independent regulator in EMDEs—which is generally accepted as best practice—has not always been enough to ensure consistent, effective, or fair regulation as regulators may be subject to capture by special interests.[52]

Box 4.1: Investor Concerns in Fragile and Conflict-Affected States[53]

Investors are particularly concerned about unexpected and arbitrary changes in policies. A case in point is investor interest in infrastructure projects in fragile and conflict-affected states (FCS). Investors surveyed tend to be interested in FCS infrastructure projects if the expected return on investment is high enough to cover the required level of return and the risk premium. Most did not rank security concerns as being a key barrier, as these can be foreseen and managed. Instead, their primary concern was sudden changes in government policies against their investments.

4.3 EMDE Infrastructure is Not Well-Defined as an Asset Class

For an asset class to be well-defined, there must be information about a group of securities (debt, equity) that share similar characteristics, behave similarly in the market, and are subject to similar laws and regulations. EMDE infrastructure should be defined as a separate asset class because infrastructure assets differ from other asset classes in several ways. For example:

- Infrastructure is typically associated with high barriers to entry and monopoly-like characteristics. This implies that its financial performance is not as sensitive to the economic cycle as are many other asset classes[54]

[50] Collier, P. and Mayer, C. (2014) *Unlocking Private Finance for African Infrastructure*. Oxford University, p. 8.

[51] *Unlocking Private Finance for African Infrastructure*, p. 4.

[52] Gomez-Ibanez, J. (2008) *Private Infrastructure in Developing Countries: Lessons from Recent Experience*. Washington, D.C.: World Bank, p. 25.

[53] Oh, Kyoo-Won. "Investment Needs to Achieve the Sustainable Development Goals: Understanding the Billions and Trillions," *MIGA*. Available at http://blogs.worldbank.org/miga/reflections-investment-prospects-countries-facing-fragility-and-conflict (accessed: 27 October 2016).

[54] Blanc-Brude, F., Delacroce, R., Mandri-Perrot, C., Schwartz, J. and Whittaker, T. (2016) *Data Collection for Infrastructure Investment Banking*. EDHEC Infrastructure Institute: Singapore, p. 5.

- Demand for essential services tends to be stable over the medium to long term. This results in infrastructure being associated with lower risks, especially once it reaches the brownfield stage.[55]

A reason that infrastructure is not well-defined as an asset class is that information about projects, their risks, and actual demand from being shared efficiently. This represents a market failure resulting from persistent information asymmetries. This imbalance prevents the supply of finance that would invest in EMDE infrastructure from aligning with the demand for finance at prices and quantities that would help to close the financing gap.

A second reason that EMDE infrastructure has not emerged as an asset class is that projects face different laws and regulations across each country, and thus require different contractual terms and structures to fit the local context. The lack of standardization requires investors to assess each project and jurisdiction separately, which increases transaction costs.[56] Furthermore, the lack of transparency on the real returns of infrastructure investments prevents investors from being able to compare projects on their risk-return profiles.

These uncertainties prevent the development of an asset class that could be priced efficiently and traded freely. Without this definition, the demand for infrastructure finance in EMDEs will not align with the supply of finance for long-dated inflation-linked returns.[57]

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[55] Bhattacharya, A., Romani, M. and Stern, N. (2012) *Infrastructure for Development: Meeting the Challenge.* London: London School of Economics and the G-24, pp. 14-15.

[56] McKinsey Global Institute. (2016) *Bridging Global Infrastructure Gaps* [accessed 17th October 2016]. Available at: http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps.

[57] Lin, J. and Lu, K. "To Finance the World's Infrastructure, We Need a New Asset Class," *The Huffington Post.* Available at http://www.huffingtonpost.com/kevin-lu/world-bank-global-infrastructure-facility_b_4078840.html (accessed: 27 October 2016).

5 Proposed GIF Solutions to Overcome Key Barriers

EMDE governments have made several efforts to "crowd in" private investment in infrastructure. Some governments have developed public-private partnerships (PPP) programs and established strategic investment funds specifically targeting infrastructure. MDBs also provide an array of guarantees, concessional loans, and credit enhancement instruments that help make investments in EMDEs attractive. Even so, the combined efforts of MDBs and governments are only a start and more needs to be done.

To this end, the GIF has worked on several initiatives to address the high barriers to private investment in EMDE infrastructure. The initiatives and suggested instruments are listed in Table 5.1 below.

Table 5.1: Barriers, Potential Solutions, and Proposed WBG Initiatives

Barrier to Private Investment	Initiative	Proposed WBG Initiative
Weak pipeline of viable projects	MDBs to work with governments to prepare well-structured projects; turn more project concepts into a pipeline of well-prepared projects (Section 5.1)	Upstream Project Preparation Window (operational)
	Improve quality of a government's project pipeline and preparation by increasing the number of structurally sound and bankable projects (Section 5.2)	Project Assessment Tool
Higher risk investment environment	Mobilize private capital through de-risking critical infrastructure projects (Section 5.3)	Downstream Finance Window
	Encourage private sector involvement in brownfield projects, when risks are lower (Section 5.4)	Asset Recycling Program
EMDE infrastructure is not well-defined as an asset class	Position EMDE Infrastructure as a recognized asset class (Section 5.5)	Emerging Markets Infrastructure Debt Index

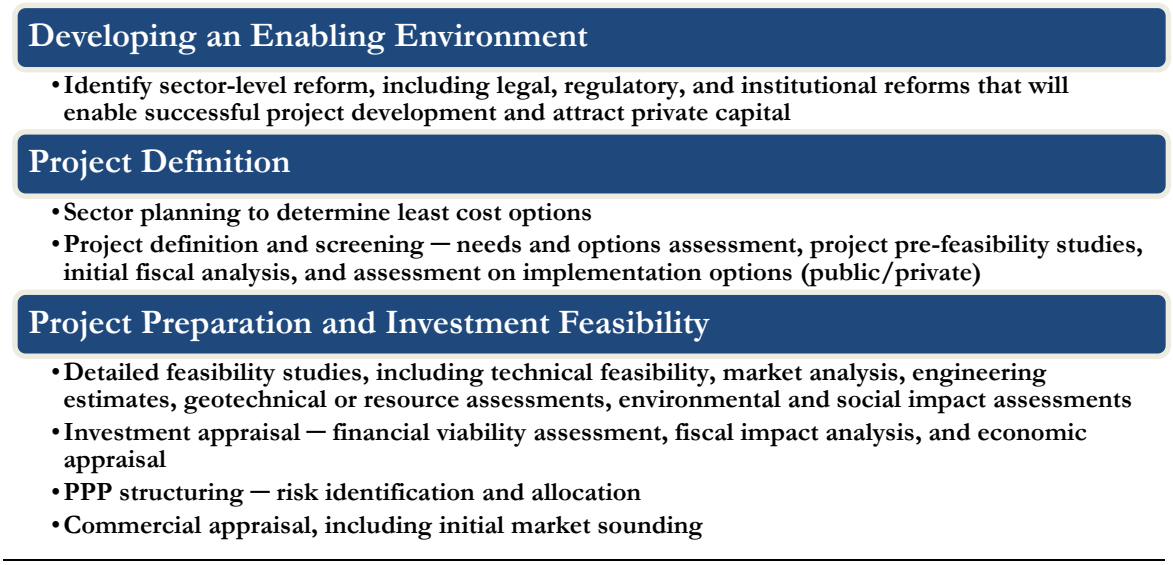
5.1 Improve Project Identification and Preparation

In many cases, EMDEs lack a robust pipeline of structurally sound and bankable projects. This is a result of EMDE governments lacking the capacity to identify and define an infrastructure project or program intended for private investment. Furthermore, the inability of some EMDE governments to prepare projects to a stage where they are investment-ready limits their ability to attract the necessary private sector interest. The GIF's Upstream Project Preparation Window is already operational to expand the pipeline of well-structured infrastructure projects in EMDEs.

5.1.1 GIF Upstream Project Preparation Window

The GIF Upstream Project Preparation Window provides support to infrastructure project development in EMDEs from project design to commercial close. These include developing an enabling environment for investment, defining and identifying projects, and preparing and structuring the project. (Figure 5.1).

Figure 5.1: Upstream Project Preparation Window Activities



5.1.2 Update on the Upstream Project Preparation Window

The Upstream Project Preparation Window was launched in 2015 with around US$100 million in funds and is now fully operational. It expects to support infrastructure projects across a range of project sectors and types, geographies, and country environments. So far the GIF has approved 15 projects in Asia, Africa and Latin America.

The GIF recognizes that the Upstream Window alone will not be sufficient to close the infrastructure financing gap in EMDEs. As such, it is developing the Downstream Financing Window and other initiatives that will enable it to provide the necessary end-to-end support to bring well-structured and bankable infrastructure projects to market.

5.2 Improve the Quality of a Government's Project Pipeline

Private investors often fuind the ambitious list of investment projects provided by governments to be poor quality, with limited preparation work having been done. These

governments require assurance from an independent party on the level of quality and completeness of their projects' preparation.

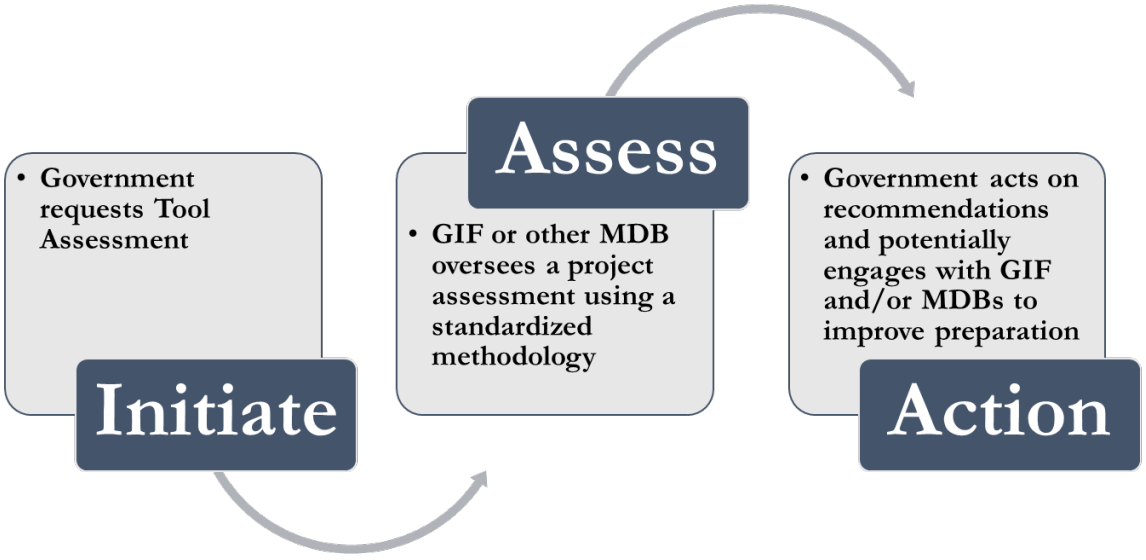
5.2.1 An overview of the Project Assessment Tool

The GIF is developing a concept for a Project Assessment Tool ('Tool') to address EMDE governments' need for verification in the project development process.

The aim of the Tool is to assure the government agencies responsible for investment decisions that projects are sufficiently well-prepared by line ministries. The tool will verify that the line ministries have conducted the appropriate due diligence. It will also reduce the uncertainty that key decision-makers often have as to whether a project, once in the market, will meet the expectations of investors and bidders.

The Tool achieves this aim by providing a rapid third-party assessment of the quality and completeness of a project's preparation using a standardized methodology. As part of the assessment, the review will recommend a set of actions to improve the project's preparation so that it meets the expectations of investors and bidders. An overview of the conceptual design of the tool is shown below in Figure 5.2:

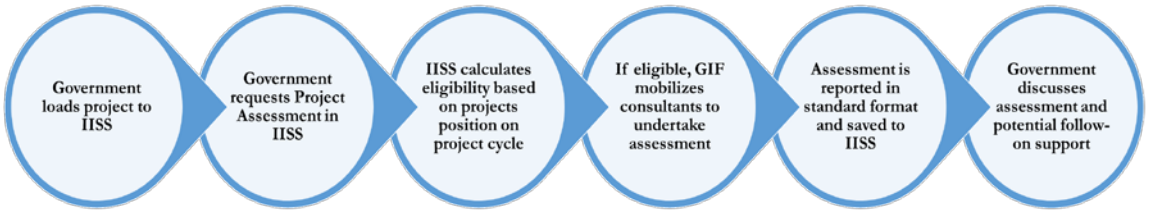
Figure 5.2: Conceptual Design of Tool



5.2.2 The proposed operating model for the Tool

An overview of the proposed operating model is shown below in Figure 5.3:

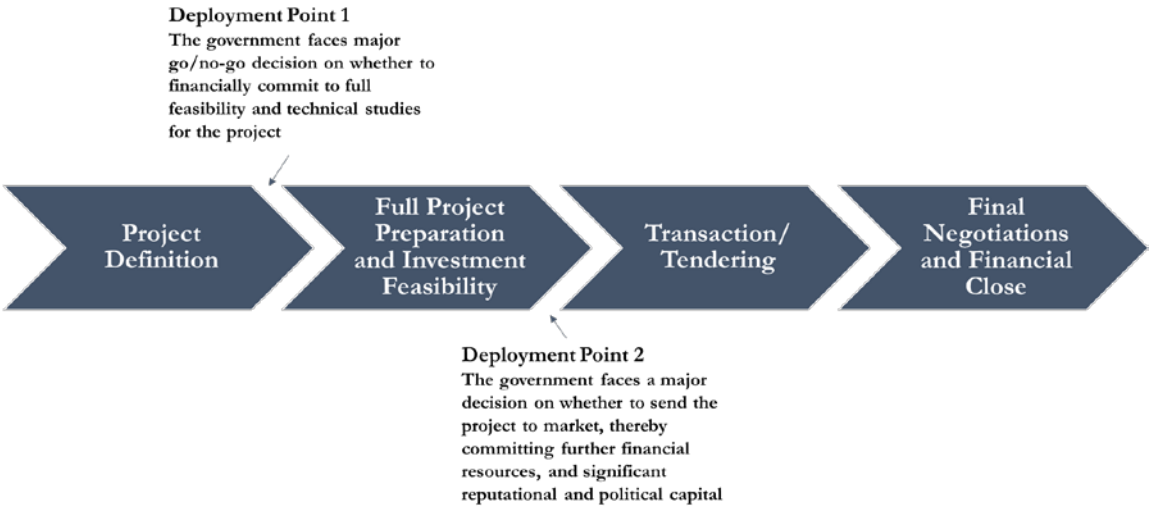
Figure 5.3: Outline of Proposed Operating Model



Governments will be able to request the deployment of the Tool through the International Infrastructure Support System (IISS) platform[58] IISS is a free-to-use project management workspace where governments can manage the preparation of their projects throughout the project cycle. It also enables interested private sector parties to check on project progress and review key aspects of a project's preparation by registering for membership of the IISS platform.

Once governments request the deployment of the Tool through the IISS platform, an algorithm will determine whether the project is eligible to benefit from the Tool. Eligibility is based upon how far along the project development cycle the project is, and more specifically, whether the project is at one of two major deployment points for government decision-makers (Figure 5.4). The status of the project will be assessed based upon answers provided by the government to a standardized list of questions.

Figure 5.4: Major Deployment Points



Once the algorithm determines whether the project is ready for a complete assessment, the GIF and its Technical Partners will be notified. The GIF will then mobilize a set of independent consultants to carry out the evaluation according to a standardized methodology

[58] The International Infrastructure Support System can be accessed here: http://public.sif-iiss.org/).

over a 2 to 3-week period. The consultant will report in a standard format (see next section) which is shared with the government and saved to the IISS platform. The assessment then acts as the basis for a follow-on discussion with the GIF and its Technical Partners on how they can assist the government going forward.

Box 5.1: Methodology for Assessing Projects

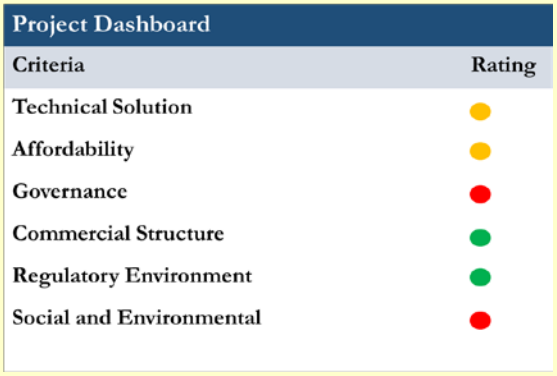
The detailed assessment methodology will be developed during the next phase of development of the Tool. The methodology will be based on a multi-criteria analysis of key areas that investors and bidders would scrutinize when making decisions on their participation in a project. These areas include:

- **Technical solution:** How well the project has been defined, including project costs, land identification, and technical feasibility.
- **Affordability:** Robustness of the revenue and cost projection models, action taken to obtain political support for any necessary subsidies.
- **Governance:** Leadership identification, project team's capacity to implement the project, and clarity of the approval process.

Other criteria will include commercial structure, regulatory environment, and expected social and environmental impacts of the project. The tool will generate a standardized report card with easy-to-read visual scoring, as well as a detailed readiness report.

The Tool's Output

The output of the assessment will include a qualitative report which will contain a set of recommendations, and a Red, Amber, Green (RAG) rating across the various criteria. An example of this is shown in the accompanying figure.



5.2.3 Feedback on the Project Assessment Tool

The GIF sought feedback on the proposed Tool during the 4th AC Meeting. Participants agreed that the Tool could provide governments more assurance that the projects are well-prepared. It could also improve the private sector's ability to assess a project's readiness

Since the tool will allow projects to be assessed on their level of preparedness in a standardized manner, it will help investors sort projects that require further preparation from those that are ready for due diligence. Participants also suggested that as more projects come online, the Tool could be adapted to provide benchmarks on the quality of preparation of projects.

To realize the full potential of the Tool, the following challenges and suggestions to address them were highlighted (Table 5.2).

Table 5.2: Challenges and Potential Solutions

Challenge	Potential solutions
The private sector may have a different perception of project readiness from the GIF	▪ The purpose of the Tool and the value it brings to the project should be clearly communicated to potential investors ▪ The Tool's value lies in its ability to rigorously assess project readiness and communicate that credibly. As such, the assessment process needs to be transparent, standardized and well structured. If necessary, data provided by the government needs to be accurate and certified by a third party.
Governments may choose to ignore recommendations made or fail to improve preparation sufficiently before releasing projects to market	▪ To incentivize governments to follow-up on recommendations made by the Tool, the GIF may want to consider providing support for project preparation.

5.2.4 Next steps for the GIF and its Technical Partners

Following the AC Meeting, the GIF will review the feedback provided and incorporate the suggested solutions the development of the Tool. The GIF also plans to develop a communications plan to illustrate better the utility of the tool and how it differs from existing platforms assessing project preparation, and clarify how the integrity and neutrality of the assessment process are ensured.

5.3 Mobilize Private Capital by Reducing Risk Associated with Critical Infrastructure Projects

EMDE infrastructure investments are often associated with uncertain regulatory, legal, and political frameworks that may not always be investor-friendly. Political and financial risks also tend to be high in EMDEs. Together, these dampen institutional investors' appetite for infrastructure projects even though they can provide a higher yield than long-term government bonds at relatively low risk. To address this constraint, the GIF is developing the Downstream Financing Window (DFW) with the purpose of de-risking projects to a level that makes them conducive to private investment.

5.3.1 Four key instruments of the Downstream Financing Window

As a credit enhancement facility, the DFW aims to address existing constraints to financing EMDE infrastructure projects—specifically, projects that lack the credit support necessary to mitigate risks in infrastructure investments. In doing so, the GIF seeks to increase the private sector's comfort with investing in infrastructure projects in EMDEs. This will also result in reducing EMDEs' dependence on sovereign borrowing from development finance institutions. The GIF is currently testing the market for the following instruments (Table 5.3).

Table 5.3: Downstream Finance Window Instruments

Instrument	Description
Capital Market Catalytic Fund	▪ The fund will provide contingent subordinated guarantees to mitigate capital market risks. It will be a 'risk sharing' facility, whereby the GIF will bear some risk as a subordinate lender[59] ▪ The amounts provided will be sufficient to raise the issues' rating to a level within one notch of the national scale rating of sovereign debt for local currency, or low investment grade for US$-denominated projects ▪ The guarantee would cover debt service defaults for up to 24 months. The fund will be deployed in conjunction with parallel or second loss cover provided by MDB Technical Partners
Regulatory Risk Cover Facility	▪ This facility will cover debt service default caused by regulatory changes (for instance, a reduction in Feed-in Tariffs for renewable energy projects) in conjunction with termination payment cover by MDB Technical Partners
Counterparty Risk Cover Facility	▪ This facility will be designed to cover non-payment or late payment by less creditworthy state-owned enterprises without a counter indemnity from the government ▪ The guarantee would cover up to 24 months of debt service on the project's senior debt ▪ In addition to such liquidity facility, the GIF DFW may provide a small portion of first-loss cover on termination payment cover or reinsurance for the termination payment cover offered by MDB Technical Partners
Contingent Refinancing Facility	▪ This facility is designed to allow commercial banks to extend their loan tenors by providing a refinancing guarantee. The facility will offer mini-perms to refinance construction and initial term financing ▪ The mini-perms and refinance guarantees are subject to the project maintaining minimum debt service coverage ratios (DSCR) and loan-life coverage ratios (LLCR) and will include a no-default clause. In essence, this is a put option to the facility should the loan not be refinanced

5.3.2 Feedback on the Downstream Financing Window

The AC Members agreed that the DFW is a useful initiative that adds to current efforts in attracting private investment to EMDEs.

However, they observed that for a more robust outcome, further innovation would be required. Some participants suggested that the DFW could adopt a portfolio approach rather than a project-specific approach. This would involve providing coverage to a *set* of infrastructure projects within a country or region, with further customization on a project basis if necessary. Such an approach provides greater standardization and clarity on the type of coverage a project would receive.

[59] The GIF's exposure will be capped. Senior lenders will still share risks to the project.

Participants also cautioned that the proposed tools needed to be attractive to investors without crowding out other tools in the market, including those provided by MDBs. As such, the GIF may need to be selective in terms of which instruments to subsidize and which to price at market. The GIF could also consider packaging the DFW products with the tools provided by other institutions.

5.3.3 Next steps for the GIF and its Technical Partners

The GIF plans to refine the tools proposed for the DFW based on the suggestions made by the AC Members. Specifically, it intends to improve the pricing mechanism and coverage duration of the proposed instruments.

The GIF plans to identify the risks that are currently not covered and whether products should be created to address them**. The** GIF will also explore models through which the DFW would be able to collaborate with other institutions providing guarantees.

5.4 Maximize Private Sector Investment in Brownfield Projects

Private investors are often unwilling or unable to take project development risk for infrastructure in EMDEs. They are, however, still interested in the returns that the investments can provide once the projects are operational and demand is proven.

Asset Recycling (AR) is a potential mechanism to capitalize on this interest. AR is a program under which governments sell existing public infrastructure assets and dedicate the proceeds to financing new public infrastructure assets. An AR program would enable finance for new infrastructure projects to be unlocked by privatizing existing and operational publicly-owned infrastructure assets.

5.4.1 Asset Recycling Programs can increase the pool of capital available for investment in infrastructure

Theoretically, an AR program could help close the infrastructure financing gap for fiscally constrained EMDE governments, especially when they do not want to increase taxes or take on new debt. It can accomplish this by using the sale proceeds from privatizing government owned assets (that can be better managed by the private sector) for new investment projects. This is described in Figure 5.5 below.

Figure 5.5: Asset Recycling Process

Australia's Asset Recycling Initiative (ARI) is the strongest example of such a program in practice currently. Box 5.2 describes the Australian experience with AR and gives an overview of its national program.

Box 5.2: Asset Recycling in Practice: Australia's Asset Recycling Initiative

In 2014, the Australian National Government launched the Asset Recycling Initiative (ARI). This program encourages States and Territories to sell existing infrastructure assets and reinvest the proceeds of the sale to fund new infrastructure projects.

The National Government incentivizes States to embrace ARI by paying the State 15 percent of the price of the asset sold over two years to offset income taxes paid on the asset sale. ARI requires that proceeds from the recycled asset will either be:

- Fully invested in new infrastructure, or
- Used to pay down 50 percent of project-related debts, with the remaining funds dedicated to financing new infrastructure.

For new projects to be eligible for ARI funding, they must be cost-benefit justified, enhance the long-term productive capacity of the economy, and attract private investment to infrastructure.

The Government modeled ARI after the New South Wales (NSW) Government asset recycling program and fund, called Restart NSW. Restart NSW, which is capitalized primarily by proceeds from the sale of infrastructure assets, funds critical infrastructure projects in NSW.

Source:http://www.budget.gov.au/2014-15/content/glossy/infrastructure/html/infrastructure_04.htm

In addition to helping governments avoid raising taxes or taking on new debt, asset recycling can add value by making privatization more socially acceptable. AR can accomplish this by increasing public confidence in government management of the proceeds of privatization. This is achievable because a well-run AR program will communicate that the proceeds will be used to develop economically and socially beneficial projects.

As a privatization vehicle, AR will generate the same economic benefits that privatization does. It creates these benefits by transferring existing assets to entities that can operate them more efficiently. AR can also result in more investible real assets as it leads to the development of more economically justified infrastructure projects, resulting in greater net benefits to society.

5.4.2 Feedback on Asset Recycling in EMDEs

Participants of the 4th AC Meeting acknowledged that Asset Recycling could be useful for EMDEs that have a pipeline of brownfield assets that have not been privatized. It was noted that there is a significant untapped pool of infrastructure assets that could be securitized. With proven demand and revenue, brownfield assets tend to be associated with a lower risk level[60], which is attractive to the private sector. 'Recycling' these assets will be a way to unlock finance for new infrastructure projects.

However, some concerns were highlighted about AR which will require further attention before such a program is implemented in EMDEs. The primary concerns are:

- **AR is a relatively new concept with few examples in practice aside from Australia**. AR can be complicated to set up and administer. The limited capacity of

[60] Even though AR programs begin with brownfield assets, certain risks remain that need to address. Currency, regulatory, and political risks remain while demand risk may be low. Relevant instruments will be necessary to mitigate this risks.

EMDE governments can magnify this issue as some have little experience privatizing assets or attracting private finance to infrastructure.

- **Limiting the use of proceeds from existing public assets to new infrastructure projects restricts the flexibility of governments to divert funding to other pressing issues**. This represents an argument against hypothecated taxes or the practice of legally requiring that tax revenues be allocated to specific expenses. A counter argument to this is that limits on the uses of recycled funds ensure fiscal discipline in how public funds are being used.
- **Communicating the benefits of Asset Recycling to the public is necessary for a successful AR program.** Specifically, the optics of transferring critical public services to private ownership need to be heavily managed. There should be clarity on the process involved in asset recycling, including governance of the funds received through the sale or transfer of the property to the private sector. This reduces the perception that proceeds are being squandered through corruption.

5.4.3 Next steps for the GIF and its Technical Partners

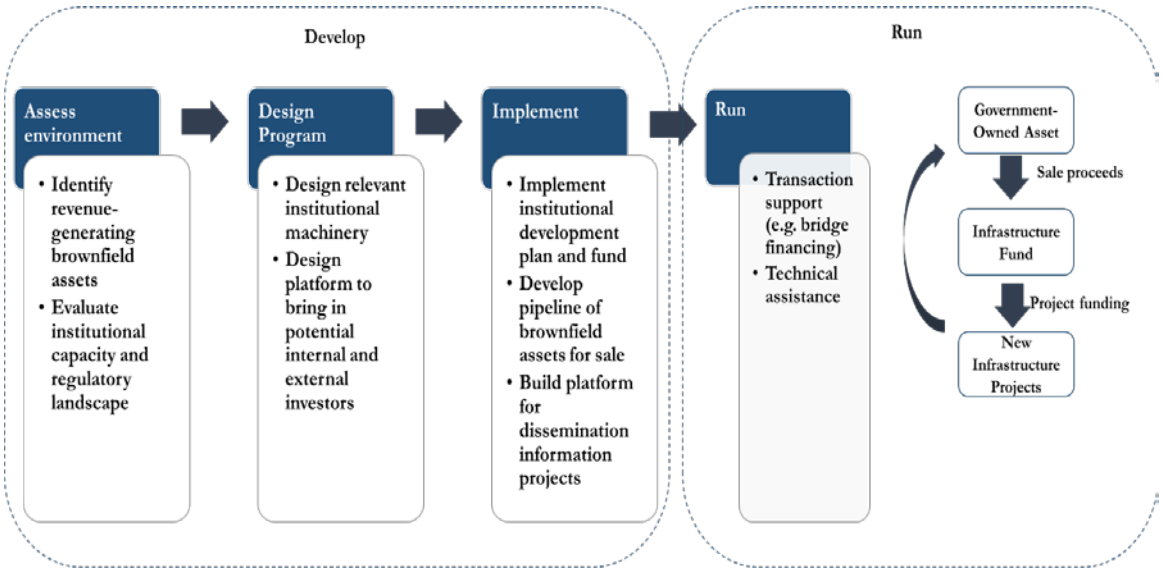
The GIF and its TPs, with their expertise and capacity, can help EMDEs address the above concerns, and develop and operate an AR program in an efficient and disciplined manner.

The following roles for GIF are currently under consideration:

- **Assess—The** GIF and its Technical Partners will assess whether an AR program is appropriate for the country. This could include a project assessment and an evaluation of the institutional and regulatory capacity
- **Design—The** GIF and its Technical Partners will determine what assets could be good candidates for recycling and potential new greenfield projects to be financed; what the limits of the program are; identify which agency or people are best placed to run the program; and determine how to coordinate the efforts of all stakeholders
- **Implement—The** GIF and its Technical Partners can also help put the program into motion to assist in the actual transaction preparation and structuring.

These roles are illustrated in Figure 5.6 below.

Figure 5.6: Potential Roles for GIF in Developing an AR Program in EMDEs



5.5 Position EMDE Infrastructure as a Recognized Asset Class

Defining an EMDE infrastructure asset class is the first step to correcting the market failure created by the inefficient exchange of information. This could help EMDE infrastructure to attract more of the finance that is potentially available, because infrastructure assets have several characteristics that are attractive to investors. One of these is stable demand for infrastructure services. This creates predictable revenue streams that often result in consistent payouts to investors over long periods. A second important reason is that correlation with the regular business and economic cycle is weak, allowing investors to better diversify their portfolios.

Currently, investors need to evaluate projects on an individual basis because the laws, regulations, and project risks vary across countries and sectors. This can increase the total project costs by 1-5 percent.[61] While institutional investors can evaluate projects in this manner, it is not as efficient as if there was a platform to share information and compare projects in a standardized fashion. Retail investors, however, do not have access to the information or networks that institutional investors do, which means that they cannot make rational investment decisions about EMDE infrastructure. This greatly reduces the pool of capital available for financing infrastructure globally.

5.5.1 Emerging Markets Infrastructure Debt Index

The World Bank is developing a fully investable emerging market (EM) infrastructure debt index ('Index') with Morningstar Inc., an investment research and management firm headquartered in Chicago, Illinois, United States. The Index would serve as a benchmark, and possibly the basis for an investment product such as an Exchange-Traded Fund (ETF) or

[61] McKinsey Global Institute. (2016) *Bridging Global Infrastructure Gaps*, pp. 25-26. Available at: http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps (accessed: 17th October 2016).

Mutual Fund. An index like this has the potential to promote liquidity and allow institutional and retail investors insight and access into the EM infrastructure space.

While there are a few infrastructure indexes, most are composed of a small number of bonds, many of which are not sufficiently liquid for the index to be fully investable. There is, therefore, a market need and opportunity for a new index with broader coverage.

The World Bank and Morningstar have made progress on the index research and structure, and have developed some criteria to evaluate securities for the indexed portfolio. The World Bank is considering an approach similar to the one employed to develop Morningstar's Global Bond Infrastructure Index. Morningstar has proposed the following eligibility criteria for the Index:

- Corporate, project and quasi-sovereign bonds from issuing companies domiciled in EM countries
- Issuers involved in the following sectors or industries: energy, utilities, transportation, communication & telecom assets, social infrastructure
- Fixed-rate coupon bonds
- Each security must have a minimum term of at least 13 months (24 months at the time of inclusion), and a remaining face amount outstanding. The value of minimum amount outstanding is contingent on the bond denominated currency:
  - AUD, CAD, CHF, GBP: 250 million local currency
  - US$: 300 million local currency
  - EUR: 500 million local currency
- Single issuer limitation of 5 percent of the overall market value of the index
- Investment grade bonds (Moody's or Standard & Poor's Baa3/BBB and above)
- Senior debt only – no subordinated issuances.

Below is a snapshot of a sample Emerging Markets Infrastructure Index portfolio that Morningstar has constructed:

- The portfolio consists of 136 bonds from 73 issuers, of which 95 percent is denominated in US$, and 3 percent in EUR. Nine of the issuers are non-US$ denominated
- The top 10 issuers account for 43 percent of the portfolio, and the top 50 issuers account for 89 percent
- The portfolio is estimated to have a market value of US$91.5 billion, representing approximately 12 percent of the Global Infrastructure Index.
- 16 countries are represented, with the top 5 countries by market value being China (26 percent), UAE (15 percent), Korea (14 percent), Indonesia (10 percent), and Chile (7 percent)
- 75 percent of the bonds is related to the utility sector, while 25 percent is in transportation and infrastructure.

The index currently consists of only investment-grade bonds. However, consideration is being given to lowering the rating criteria.

5.5.2 Feedback on the EM Infrastructure Bond Index

The feedback from the participants of the 4th AC Meeting on the proposed Index was generally positive. It was agreed that the Index has the potential to benefit both investors and asset managers. It will do so by serving as a benchmark for asset performance, promoting transparency, and ensuring standardization in evaluating projects. The Index could also be useful for developing new projects that will increase private investment in EMDEs.

However, three areas of concern were highlighted. These are discussed in Table 5.4 below.

Table 5.4: Challenges and Potential Solutions to Developing the Index

Challenge	Potential solutions
The Index will be influenced by short-term events and could, therefore, be volatile. For instance, the Index can be affected by extraneous factors that are not related to the project's performance. It is likely that the Index would show higher volatility in the infrastructure sector than is currently presumed under Solvency II rules. This goes against the unique selling proposition for the asset class which is low but stable returns. This may lead regulators to request a higher capital charge that could diminish the class' attractiveness to insurers, for instance.	▪ The implications of developing an index on Solvency II requirements need to be studied in-depth ▪ The Index should include a broad mix of infrastructure types so that it is diverse enough. Care should be taken to ensure that a disproportionate share of utilities is not included in the index as this could result in the Index mirroring the country's volatility.
Restricting the Index to investment grade securities would exclude significant portions of the asset class.	▪ Reducing the criteria to include non-investment grade securities and even private debt will broaden the Index coverage.
An EM-focused index will likely be quite broad. The breadth of investments covered in the Index could reduce its utility to investors who need a narrower focus (in terms or regions or sectors or instruments covered).	▪ Sub-indexes can potentially be added for regions, sectors or instruments.

5.5.3 Next steps for the GIF and its Partners to take

Morningstar will review and respond to the comments received during the session and continue to work on the Index in the weeks and months ahead. It will also undertake a more detailed market assessment to check if there is interest among the investor and asset management community to use the Index. It will continue to discuss progress with the World Bank's Treasury unit and continue exploring possibilities of structuring an investment product with or without World Bank's contribution using the Index.

The GIF's role in the above could be to track the progress made by Morningstar and—if the Index is launched—decide how it can help the GIF in its objective of increasing investment in the sector.

6 Conclusion

The GIF is uniquely positioned to help develop the solutions necessary to ease current constraints to infrastructure investments in EMDEs. By bringing together governments, multilateral banks, and private investors, it can help develop the solutions that will help attract infrastructure investments to where they are most needed, and address the largest barriers to investment. The proposed GIF initiatives are an incremental step towards improving the environment in EMDEs for private investment in infrastructure:

- **The Downstream Financing Window** will help mobilize private capital for EMDE infrastructure projects through complementary financing and credit enhancement instruments.
- **The Project Preparation Tool,** through independent appraisal, validation, and recommendations, can dramatically improve the quality of government project pipelines for private participation in infrastructure.
- **An Asset Recycling program** would enable finance for new infrastructure projects to be unlocked by privatizing existing and operational publicly-owned infrastructure assets. The effectiveness of such a program is highly dependent on individual country investment frameworks, government capacity, and infrastructure stocks. This requires close evaluation and selection on a country-by-country basis
- **Introducing an Emerging Market Infrastructure Debt Index** will provide market benchmarks on EM infrastructure assets and ensure standardization in evaluating projects. The index would help to create a market that shares information about an infrastructure asset class efficiently

While these solutions can be effective, more needs to be done to fully address all of the barriers to infrastructure investment in emerging markets. A more innovative approach to some of the solutions explored in this report may be necessary. The GIF will address these questions further through ongoing outreach and advice from its Advisory Partners, and through market testing.

Appendix A: Agenda of the 4th GIF Advisory Council Meeting

Time	Event
8:30am – 9:00am	**Registration and Breakfast**
9:00am – 9:30am	**Plenary Session 1** ▪ **Opening Remarks** – Joaquim Levy, Managing Director and WBG Chief Financial Officer – Julie Monaco, Citibank, Managing Director and Global Head of Public Sector Coverage ▪ **GIF Update** – Jason Lu, Acting Head, GIF ▪ **WBG PPP Benchmarking Survey** – Laurence Carter, Senior Director, Public-Private Partnerships – Federica Saliola, Program Manager, Global Indicators Group, Development Economics
9:30am – 11:00am	**Break-out Session** ▪ Project Assessment Tool ▪ Asset Recycling Initiative ▪ GIF Downstream Financing Window ▪ Emerging Markets Infrastructure Debt Index
11:00am – 11:15am	**Coffee Break**
11:15am – 12:15pm	**Plenary Session 2** ▪ Key discussion points from break-out session ▪ Next steps and the role of the GIF in implementing the proposed initiatives
12:15pm – 12:30pm	**Closing remarks**
1:00pm – 2:30pm	**Luncheon** ▪ Keynote speaker: Hon. Sri Mulyani Indrawati, Minister of Finance, Indonesia

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The Global Infrastructure Facility (GIF) was established in March 2015 as a partnership program housed at the World Bank Group. The GIF provides a global platform to integrate efforts to invest in infrastructure in Emerging Markets and Developing Economies (EMDEs), enable collective action among a wide range of partners, and thereby leverage resources and knowledge to find solutions to complex infrastructure financing challenges that no single institution could achieve alone. The GIF provides end-to-end project preparation, appraisal, structuring, and transaction support needed to bring well-structured and bankable infrastructure projects to market, with the objective of increasing private investment, in particular long-term finance, in complex EMDE infrastructure projects.

GIF is uniquely positioned to harvest market intelligence and knowledge that can be shared with its partners and the wider infrastructure community in the form of high-quality knowledge products that aim to improve understanding and best practice around key trends and issues in the infrastructure finance market.