

CONSULTATIVE DRAFT

Guidance Note on National Infrastructure Banks and Similar Financing Facilities

In collaboration with Cambridge Economic Policy Associates (CEPA)
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TABLE OF ABBREVIATIONS

Acronym	Description
AFD	French Development Agency (Agence Française de Développement)
AIIB	Asian Infrastructure Investment Bank
BNDES	Brazilian Development Bank (Banco Nacional de Desenvolvimento Econômico e Social)
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China and South Africa
CIB	Canada Infrastructure Bank
CDB	China Development Bank
CEFC	Clean Energy Finance Corporation
DAC	Development Assistance Committee
DBSA	Development Bank of Southern Africa
DBJ	Development Bank of Japan
DEG	German Investment Corporation (Deutsche Investitions- und Entwicklungsgesellschaft)
DFI	Development Finance Institution
EIB	European Investment Bank
FINAME	The Special Agency of Industrial Financing (Financiamento de Maquinas Equipamentos)
FoF	Fund of Funds
GEF	Global Environment Facility
GIB	Green Investment Bank (UK)
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDCOL	Infrastructure Development Company Limited (Bangladesh)
IKK	Investitionskredit Kommunen 208 (Investment Credit Municipalities)
IPP	Independent Power Producer
JBIC	Japan Bank for International Cooperation
KfW	German Development Bank (Kreditanstalt für Wiederaufbau)
MDB	Multilateral Development Bank
MoF	Ministry of Finance
MSME	Micro Small and Medium Sized Enterprises
NAIF	Northern Australia Infrastructure Facility
NIB	National Infrastructure Bank or similar financing facility



NIIF	National Investment and Infrastructure Fund (India)
PASEP	Public Server Patrimony Formation Program (Programa de Formação do Patrimônio do Servidor Público)
PIP	Pusat Investasi Pemerintah (Indonesian sovereign wealth fund)
PPP	Public-Private Partnership
PT SMI	Indonesian Infrastructure Financing Company (PT Sarana Multi Infrastruktur)
PT IIF	PT Indonesia Infrastructure Finance
RE	Renewable Energy
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
SADC	Southern Africa Development Community
SME	Small and Medium Sized Enterprises
SOE	State-Owned Enterprise
TJLP	Brazil's Long-Term Interest Rate (Taxa da Juros de Longo)



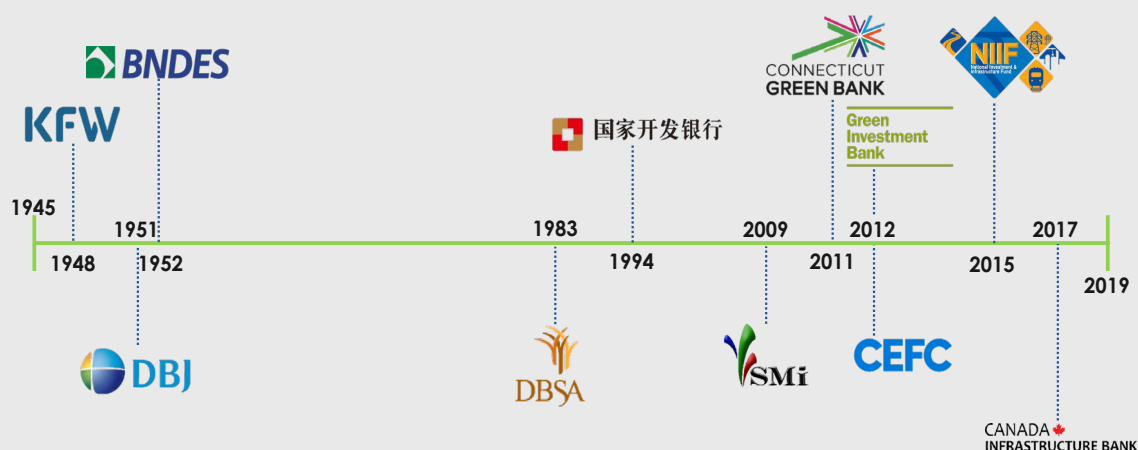


I. EXECUTIVE SUMMARY

OVERVIEW

This Guidance Note has been designed to assist governments interested in establishing, or reforming, a National Infrastructure Bank or a similar financing facility (NIB).¹

It brings together lessons learned from **an examination of a wide variety of existing NIBs in both emerging markets and high-income countries**, including institutions with an extensive history and those that have been established more recently. With an overall aim of helping to accelerate the flow of quality infrastructure projects, including through mobilising private capital and supporting project preparation, the analysis has sought to **identify some of the unique niches and roles that such institutions can occupy and play in support of government objectives and policies in these areas**. The building blocks for the analysis are a number of stand-alone case studies that explore different NIBs which have been established since 1945:



This Guidance Note synthesises the key observations and learnings based on the case studies, plus more limited reviews of other NIBs, in terms of their evolving role, approaches to capital raising, financial products offered and other activities. This summary provides an overview of the key findings.

¹ For the purposes of this report, the acronym NIB refers to institutions with a primary focus on infrastructure, national development banks, and financing facilities with a significant proportion of their portfolio focused on infrastructure financing.



EVOLVING NATURE OF NATIONAL INFRASTRUCTURE BANK MANDATES

NIBs have evolved to address the financing challenges faced in different policy contexts.

Noting the differing country and sector contexts in which NIBs have operated, their role has evolved considerably:

- **Long-term finance providers for public infrastructure:** The original mandate for NIBs was to raise capital efficiently to support the provision of public infrastructure, initially in the context of post-war reconstruction and subsequently, to support wider economic development. Key examples of such entities include Kreditanstalt für Wiederaufbau (KfW), which was established in 1948 with funds from the Marshall Plan, as well as the Development Bank of Japan (DBJ).
- **Mobilising private finance for infrastructure:** In later years, particularly in the 1990s, mobilising private finance became a key policy goal of many governments, and NIBs helped to facilitate this, with some governments adapting the mandate of existing institutions while others established new entities.
- **Support for renewables and the green economy:** In recent years, a number of institutions have been established with a more specific focus. For example, institutions such as the UK's Green Investment Bank (GIB) and the Clean Energy Finance Corporation (CEFC) in Australia were established post-2010 to support infrastructure projects in the areas of renewable energy and energy efficiency.





NATIONAL INFRASTRUCTURE BANKS AND CAPITAL RAISING

NIBs have raised capital efficiently as a result of government backing, but riskier portfolios of private financings require different structures and approaches.

Key findings with regards to capital raising include:

- Historically, **NIBs have been able to raise capital at low cost for on-lending to infrastructure**, because of significant government backing in terms of paid-in and callable capital, as well as explicit or implicit credit guarantees.
- While many governments still provide explicit guarantees on bond issuances, **some institutions have issued uncovered bonds, relying on their own credit ratings**. For example, the DBJ has done so as part of a move towards privatisation.
- **The China Development Bank (CDB) has engaged in secondary financing approaches by securitising some of its assets**, a key example of the market-making role that NIBs can play in capital markets.
- While **government-backed capital raising** allows NIBs to benefit from efficient financing costs, **such approaches are restricted by the host governments' own fiscal space – and can put taxpayers at risk**. Accordingly, NIBs have also sought to mobilise private finance for infrastructure, so as to reduce reliance on government support.
- **NIBs are in a unique position to offer local institutional investors a conduit through which to take investment risk on infrastructure assets**, either through investment in NIB bonds, or through equity funds managed by NIBs. In countries where capital markets are less developed, NIBs can play a key role in mobilising local currency financing for infrastructure.
- Raising funds through separate vehicles is a way in which **NIBs could raise more “at risk” capital**, which may be needed if NIBs are to take on more risk in order to catalyse private investment.
- In cases where **debt has not been explicitly guaranteed, ratings agencies often assume an implicit guarantee** from the host government. However, in such instances, it is unclear whether **bondholders or taxpayers are at risk in the event of a NIB default**.



FINANCING PRODUCTS

Financing products offered by NIBs have grown in sophistication, where, in addition to senior loans, subordinated debt and equity are also being offered, allowing NIBs to play a more catalytic role.

The extent to which NIBs have provided catalytic products has grown over time:

- Traditionally, NIBs provided long-term loans to central governments, municipalities and public utilities.
- While senior loans have been the principal product offered by NIBs in private financings, more recently, **emphasis has been placed on NIBs taking more risk by offering equity and subordinated loans.**
- **Subordinated loans can create strong incentives for both debt and equity providers,** as they provide an additional layer of protection to senior lenders while not diluting equity returns. Such products are attractive if the additional risk is not fully priced (that is, subsidised through dedicated public resources).

Other areas for catalysing finance that could be considered further by NIBs include:

- Rather than provide senior debt directly, **partial credit guarantees** can enable risks to be shared.
- Where subsidies are being deployed, **ensure that they are targeted at where they are most required.**
- Limit financial interventions to the phase of the project development cycle where it is most needed. Where all finance is being provided on a market, rather than concessional basis, this is typically during the **project development and construction phases**, with private capital (particularly institutional) being more widely available for operational assets.
- When it comes to mobilising private capital, NIBs **are uniquely positioned to offer long-term, local currency products.** This niche should be built on by NIBs in emerging markets, tapping into local capital markets.





NATIONAL INFRASTRUCTURE BANKS AND PIPELINE DEVELOPMENT

While financing has been the primary area of intervention for NIBs, governments are increasingly tasking them with a greater role in project pipeline development.

Although financing of infrastructure at financial close has been and remains the main focus area, NIBs have begun to play an increasingly important role in providing other support to infrastructure through their assistance in project preparation and development. Examples from the NIB case studies include:

- **The CDB has worked closely with sub-sovereign entities in China** where, in addition to financing, it has offered support to project development, including structuring and tendering projects.
- The recently-established **Canada Infrastructure Bank (CIB)** has been set up with a specific mandate of building an inventory of infrastructure projects for the Government of Canada.
- In Indonesia, **PT Sarana Multi Infrastruktur (PT SMI)** has provided both upstream and downstream support to projects and is able to draw on ring-fenced resources to support these activities.
- In most markets, a lack of finance is often less of a binding constraint than the lack of well-structured, bankable projects. As such, given their positioning as a public sector institution, as well as being a centre of expertise on infrastructure finance, **NIBs are potentially well-placed to alleviate project development bottlenecks.**



GOVERNANCE ARRANGEMENTS

Sound governance is important in ensuring NIBs do not crowd out private investment, are operated independently, and exercise due care when providing subsidies.

Adopting good practice in governance arrangements is crucial to ensuring the effective implementation of NIB activities. This also guards against negative behaviours such as institutional capture, cronyism, and corruption.

Specific elements of good governance include:

- **Focusing on additionality.** Only operate where the intervention is strictly required and avoid placing institutional self-perpetuation above this.
- **Operating within an agreed strategy and mandate.** The over-riding aim of maintaining additionality needs to be supported by clear corporate and policy objectives, together with operating policies which set out the parameters within which the NIB will operate.
- **Independent objective operational management.** Whilst government should set the organisation's objectives and mission, it should not be involved directly in day-to-day operations.
- **Exercising due care when providing subsidies.** In some contexts (e.g. the European Union (EU)), there are strict rules on the use of subsidies to avoid market distortions, while in others, there are not. As such, NIBs need to ensure any subsidies are used in a catalytic and impactful way.
- **Maintaining public confidence through transparency.** There will always be public interest in ensuring institutions operate transparently and are accountable. However, this can create tensions when NIBs need to keep commercially sensitive information confidential.





NATIONAL INFRASTRUCTURE BANKS AND GREEN FINANCE

NIBs have helped mobilise finance for green infrastructure, including issuing green bonds, establishing in-house expertise, and setting up investment funds.

Many governments have sought to support the development of the green economy, particularly in terms of support to renewable energy generation and energy efficiency.

Several of the case study NIBs have developed skills in renewables financing, with activities focusing on both taking a lead in greenfield financing as well as the refinancing of existing green portfolios through the issuance of green bonds. For example:

- **BNDES, the Brazilian Development Bank, has issued a USD 1 billion green bond**, and alternative technologies are one of its fastest growing infrastructure segments.
- The China Development Bank (CDB) recently issued a **CNY 25 billion (USD 3.7 billion) retail green bond** through commercial lenders, and **two quasi-sovereign green bonds** for its Belt and Road Initiative (BRI) projects.
- The **National Investment and Infrastructure Fund (NIIF)** in India has invested in the **Green Growth Equity Fund through its Fund of Funds** activities.

NIBs, particularly following the Paris Agreement, have been major contributors to the development of the **green bond market, which, as of 2018, amounted to USD 377 billion.**

In some countries, wholly new institutions, with a specific focus on green finance, have also been established, including the **GIB² in the UK** and the **CEFC in Australia**. Both institutions have been able to invest in a large portfolio of clean energy projects, to demonstrate the viability of such ventures and thereby crowd in private capital.

Common **success factors** have included **ensuring expertise can be built up in-house**; a clear **focus on emerging technologies** to demonstrate viability; flexibility to invest across the capital spectrum; and the **'halo effect'** that comes with NIB participation, due to market perceptions of accordance with government policy.

² In 2017, GIB was sold to Australia's Macquarie Group.



KEY LEARNINGS

Key learnings can be grouped according to country income level and whether they refer to new or existing institutions.

Although specific contexts can differ considerably, it is possible to identify high level groupings, within which key learnings can be drawn.

	High Income Countries	Emerging Markets
Existing Institutions	<ul style="list-style-type: none"> Exit sectors/areas where evidence of value-added is limited, including divestiture Increase use of catalytic products such as subordinated loans Internationalisation of activities 	<ul style="list-style-type: none"> Focus on areas with greatest levels of additionality, including project development Explore raising unguaranteed capital to support catalytic activities
New Institutions	<ul style="list-style-type: none"> Identify market gaps i.e. projects where attracting finance is most difficult Provide funding from budget allocations to maximise risk-taking potential, including through products offered Adopt market exit clauses in mandate 	<ul style="list-style-type: none"> Look at potential to provide long-term local currency financing to projects Increase support to project development

At the centre of these good practices is ensuring that **NIBs remain additional, with good governance and appropriate mandates to enable institutions to adapt to market needs.**

Areas to explore going forward include how **NIBs can support long-term, local currency financing in emerging markets, without the need for guarantees, in order to free up fiscal space for other uses.**





2. INTRODUCTION

This Guidance Note draws together lessons that arise from reviewing a number of stand-alone case studies that explore different National Infrastructure Banks and related financing facilities (NIBs).³ Given that many of these have been around for several decades, whereas others have been very recently established, there is a range of stages of development. In considering how the NIB model has evolved, it is possible to show how it has been adapted to support the challenges faced in a variety of different policy contexts over time. These span the need to re-build public infrastructure destroyed in World War II, through to supporting national public-private partnership (PPP) initiatives, to, more recently, the need to decarbonise through supporting the growth of the green economy. Despite their differences, each represents a powerful policy tool for their respective governments.

2.1. DEFINING NIBS

A NIB can be defined as a wholly or partially, publicly-owned financial institution, set up to support government policies in the infrastructure space. Characteristics of NIBs, which can be used to define them, include:

- a major or exclusive focus on infrastructure through the provision of long-term capital, most typically debt, although several NIBs can now also offer equity and mezzanine products;
- government equity investment into the institution with paid-in capital (sometimes with additional callable capital), with or without additional budgetary appropriations;
- credit enhancement of a large proportion of any debt issues by the NIB, either through the provision of callable capital or else through explicit guarantees -- *without* the host government providing a guarantee -- charging a risk commensurate fee;
- the absence of deposit-taking and often the absence of any dividend payments⁴, with profits typically being used to build up reserves and the scale of the balance sheet.

This definition includes institutions and vehicles predominantly focused on the financing of domestic infrastructure companies and projects, including equity funds which meet the above criteria, not just providers of debt. The analysis therefore includes NIBs; sub-national infrastructure banks; other national investment or development banks which do not have infrastructure-specific mandates but have significant assets in infrastructure; and related financing facilities (for instance, vehicles established to mobilise private finance into the infrastructure sector, such as the National Investment and Infrastructure Fund (NIIF) in India and the Indonesia State-Owned Infrastructure Financing Company (PT Sarana Multi Infrastruktur (PT SMI)). The term does not, however, include multinational infrastructure banks, such as the Asian Infrastructure Investment Bank (AIIB), or government-owned pension funds that invest in infrastructure. The analysis is also largely focused on the domestic operations of each NIB, not the international roles which several of the larger and more established NIBs have also been mandated to pursue.

Throughout this Guidance Note, the acronym NIB is used to refer to national infrastructure banks, sub-national infrastructure banks, other national investment or development banks which do not have

³ For the purposes of this report, the acronym NIB refers to institutions with a primary focus on infrastructure, national development banks, and financing facilities with a significant proportion of their portfolio focused on infrastructure financing.

⁴ There are exceptions to this, for example, the Infrastructure Development Company Limited (IDCOL) in Bangladesh pays dividends to the government.



infrastructure-specific mandates but have significant assets in infrastructure, and other related financing facilities.

2.2. REASONS FOR CREATING A NIB

Reasons for creating an infrastructure bank can vary based on a country's context but some common motivations include:

- to attract private-sector finance, particularly institutional capital;
- to secure finance for sub-national projects that might otherwise struggle to obtain financial support;
- to focus development on a specific sector (e.g. energy, transport), or sub-sector (e.g. clean energy, surface transport)⁵;
- to create a centre of expertise around infrastructure.

Whilst there are often practical reasons for establishing a NIB focused on infrastructure, they are not without detractors. In particular, critics of such institutions argue that they:

- give too much control of public infrastructure to the private sector⁶;
- can crowd out private investment and lending (raising questions of additionality in some contexts);
- use their position to influence state or municipal governments into prioritising infrastructure over other areas; and
- benefit large corporate investors in projects rather than project end-users.

In preparing a Guidance Note for countries that might be considering either setting up a new NIB or optimising the performance of an existing NIB, it is important that these risks are recognised and dealt with as far as possible, in their governance arrangements.

In choosing a range of different case studies, the aim is also to illustrate how the motivations for creating NIBs and corresponding challenges have been addressed. Following World War II, there were immense challenges to reconstruct physical infrastructure, including, but not limited to, roads, railways, bridges, power and water utilities, as well as housing. Particularly in countries such as (the then) West Germany and Japan, this required significant amounts of financial resources, which needed to be channelled systematically into the rebuilding of such assets. In the case of the former, initially the plan was for the Marshall Aid used to finance reconstruction to be paid back. At the same time, Kreditanstalt für Wiederaufbau (KfW) was established as the West German government's main financing arm. In the post-war period, infrastructure financing in most of the world was seen as the responsibility of national and sub-national public sector bodies.

In the decades that followed, NIBs, such as KfW and the Development Bank of Japan (DBJ), as well as others in Europe faced with the responsibility of financing infrastructure to underpin post-war economic recovery, were focused not only on the mobilisation of the large-scale resources required for infrastructure, but also doing so on a basis that maximised affordability. To deal with the affordability challenge, they provided long-

⁵ Direct or indirect support of economic growth in a specific area – such as strengthening national exports, natural resources, etc. – is also a common motivation, although more characteristic of national development banks, than NIBs. KfW and BNDES are good examples of this.

⁶ In many privatisation structures and some PPP structures, the government hands over significant control over the project to the private sector.





term debt capital to spread out the lumpy capital costs over many years at interest rates which were below those that commercial lenders could offer.

During the 1950s through to the 1980s, this approach, used to support the provision of publicly-owned infrastructure, was adopted in many more countries, including in Brazil in 1952, when the National Bank for Economic and Social Development (BNDES) was established, and in South Africa in 1983, when the Development Bank of Southern Africa (DBSA) was set up.

Since about 1990, however, as governments increasingly began to divest infrastructure assets, growing attention has been turned to private financing of infrastructure and how this can be achieved most efficiently and effectively. Whilst affordability challenges remain commonplace in most countries (in terms of the limitations faced by governments and customers in paying for services), there has been a concurrent need for local credit and capital markets to supply the necessary finance for policies of privatisation and the establishment of greenfield PPPs to deliver new infrastructure capacity. Where these policies have been adopted, many governments have tasked their existing NIBs with facilitating the mobilisation of private capital, whereas other governments have established different types of NIBs for such purposes.

To varying degrees, depending upon the breadth, depth and sophistication of national financial markets, this has created challenges in terms of:

- **Credit and capital markets** being able to provide capital as efficiently (cheaply) to the private sector as they can to governments, and in general, being able to offer the required long-term tenors, especially as regards commercial banks.
- A need for human and financial resources to enable the **development and preparation of projects**, which have subsequently been bid out to private sector operators and investors (as well as the need to create the necessary legal and regulatory frameworks).

In emerging markets with limited financial market development, both challenges have been typically problematic, with national credit and capital markets simply not being able to provide the long-term financing required. The only long-term capital available has been in foreign currencies, typically provided by international Development Finance Institutions (DFIs), or where projects have been able to access international foreign exchange markets. However, financing in foreign currencies can create problems of currency mismatches where project/utility revenues are received solely in local currency, whereas financing obligations are in a foreign currency.⁷ This mismatch exposes those paying for the infrastructure services to potential exchange rate depreciation risks or higher prices due to hedging costs.

Given these challenges, NIBs have been asked to help mobilise financial resources, particularly local currency ones. Part of their contribution has involved raising and then on-lending local currency-denominated capital at cost efficient rates. However, even this has involved NIBs having to build new skills in credit evaluation, given the very different nature of credit operations undertaken on a risk basis, rather than where government is the ultimate borrower. In the case of the latter, the public sector is responsible for repaying the debt; in the former, there is a reliance on the ability of the business or project to generate sufficient cash to repay the loan. Greater understanding of project risk has also been accompanied by a move into the provision of equity and mezzanine finance.

⁷ Some infrastructure projects will have some revenues in foreign currency, for example, ports and airports.



NIBs have also occasionally played a role in helping to improve the bankability of project pipelines, especially through resourcing project preparation activities, as well as supporting capacity building activities, for instance those targeted at asset management and maintenance, particularly at the sub-national level.⁸ In some instances, for example, in the case of BNDES in Brazil, this has led to the development of centres of expertise within NIBs. In the case of the recently-established Canada Infrastructure Bank (CIB), the CIB has been made custodian of the national pipeline of PPP projects.

New institutions have also been established in emerging markets, such as the NIIF in India, and PT SMI and PT Indonesia Infrastructure Finance (PT IIF) in Indonesia. This has also been the case in some more developed markets, with both Australia and, as mentioned, Canada having also recently established NIBs. In Australia, through the Northern Australia Infrastructure Facility (NAIF), there has been a specific focus on supporting PPPs in the most challenging national contexts, such as those in geographically remote areas, especially where there are under-privileged communities.

In India, the NIIF has recently added an equity financing capability to the credit capabilities of existing NIBs, such as the Indian Infrastructure Finance Company. Similarly, in Indonesia, PT SMI and PT IIF can both provide equity, supplementing debt capabilities. A particular niche that NIBs such as the China Development Bank (CDB), have been able to fill is that of being able to raise longer-term local currency financing, including potentially from institutional investors that can be on-lent across their portfolios. Many new NIBs that have emerged in developing countries, for instance, the Infrastructure Development Company Limited (IDCOL) in Bangladesh, were capitalised by sovereign International Development Association (IDA) and other credits provided to host governments by International Financial Institutions and then on-lent to the NIB.

More recently, climate change challenges have had implications for infrastructure finance. Whilst *funding* for such infrastructure has been a mix of user charges and subsidy payments (whether from tax-payers or bill-payers), much of the *finance* has typically been private, whereby private investors and lenders have had to deal with new technology and construction risks (such as in the case of off-shore wind). Again, either the operations of existing NIBs have been expanded to address these challenges, for example KfW, DBSA, and BNDES, or else new NIBs have been established, such as the Green Investment Bank (GIB) in the UK and the Clean Energy Finance Corporation (CEFC) in Australia.

2.3. GUIDANCE NOTE PURPOSE

In developing a Guidance Note for countries seeking to set up NIBs or looking to reform existing ones, it is useful to assess their role in light of the challenges and motivations outlined above. This includes not only their products but also their capital raising operations and how they have sought to work with private finance providers in evolving and more complex financial markets. From this, it is possible to identify good practice in the provision of financial products which mobilise third-party private capital and assistance to line ministries in project preparation, together with appropriate strategic focus; appropriate institutional and governance structures; and performance monitoring which can help maximise their relevancy, efficiency, effectiveness, impact and sustainability.

⁸ See related GI Hub report on Governmental Processes Facilitating Infrastructure Project Preparation, available at <https://www.gihub.org/project-preparation/>. Another related product is the GI Hub Infrastructure Project Pipeline, available at <https://pipeline.gihub.org/>.





2.3.1. Choice of case studies

In order to explore how different types of NIBs have sought to address these issues, eleven case studies have been chosen (selected from the approximately 250 NIBs currently active). In selecting the case studies, age of institution, size, products offered, sector focus and geography were considered in order to capture a range of contexts and experiences. In addition to these 11 case study institutions, several other NIBs which illustrate particular points are also referenced.

All of the examples demonstrate that NIBs are, essentially, public sector institutions, in light of their ownership and the role of government in appointing the board of directors. Key aspects of the ownership and governance of the chosen case studies are set out in Table 2-1 below.

Table 2-1: Case study institutions' ownership and governance

Institution	Company type	Ownership	Board members	Supervision and regulation
BNDES Brazil	Federal public company	Wholly owned federal entity ⁹	Appointed by the President of Brazil	Central Bank of Brazil
CDB China	DFI, Status of a Ministry	Wholly owned by the government, of which: 36.54 percent Ministry of Finance (MoF); 24.68 percent Subsidiary of China sovereign wealth fund; 27.19 percent subsidiary of the State Administration for Foreign Exchange; 1.5 percent National Council for Social Security Fund	Four appointed from government agencies, six appointed by equity shareholders, the other three are Executive Directors, including the Chairman and Vice Chairman of CDB	People's Bank of China
CEFC Australia	Corporate Commonwealth entity	Government owned	Government approved appointees	Accountable to parliament through ministers
Connecticut Green Bank (CGB) United States	Quasi-public agency created by state legislation	Government owned	Board has 11 voting and two non-voting members The Chairperson of the Board is appointed by the Governor. Remaining members appointed by the general assembly	State legislator
CIB Canada	Crown corporation	Wholly owned by the federal government	Appointed by Cabinet on Minister's recommendation	Parliament through the Minister of Infrastructure and Communities

⁹ Sponsored by the Ministry of Development, Industry and Foreign Trade



Institution	Company type	Ownership	Board members	Supervision and regulation
DBJ Japan	Corporation	Wholly owned by MoF. In the process of privatising.	Appointed by MoF	MoF
DBSA South Africa	Specific legal and regulatory status	Wholly government owned	Appointed by minister of finance, ten members are independent non-executives	Government/Treasury
GIB United Kingdom	Public company	100 percent of shares held by UK government until 2017 ¹⁰	Largely independent Board, Department of Business, Innovation and Skills ¹¹ could appoint chair	Government
KfW Germany	Public law institution	80 percent federal government, 20 percent federal states	Appointed by supervisory board of German ministers	German MoF,
NIIF India	Trust	Initially 100 percent government ownership, now 49 percent, remaining 51 percent are third-party capital	Board of Directors: shareholder representatives and independent directors; No representatives from government or investors on the Investment Committee	Governing council: government, investors' experts
PT SMI Indonesia	Non-bank financial institution Limited Liability Company, State-Owned Enterprise	100 percent owned by government	Appointed by the MoF	Regulated by the MoF

Source: CEPA analysis of country case studies.

It is also important to recognise that the roles and mandates of different NIBs can change over their lifetimes, albeit often subtly. This is set out in the choice of case studies listed in Table 2-2 below. There is also considerable difference in how individual NIBs have anticipated change and proactively adjusted or have been crisis driven, depending on their governance arrangements.

Table 2-2: The rationale for establishment and current mandates of the case study NIBs

Institution	Rationale for establishment	Present mandate/key developments
KfW Germany 1948	To provide financing for the reconstruction of post-war Germany	To improve economic, social and ecological living conditions. KfW is now a group of entities; KfW IPEX-Bank GmbH was spun off in 2008 and the German Investment Corporation (Deutsche Investitions- und Entwicklungsgesellschaft or DEG)

¹⁰ In 2017, GIB was sold to Australia's Macquarie Group.

¹¹ The Department of Business, Innovation and Skills no longer exists. Its successor is the Department of Business, Energy, and Industrial Strategy.





Institution	Rationale for establishment	Present mandate/key developments
		was created to support the private sector in developing countries. Domestically, KfW has focused on small and medium sized enterprises (SMEs), provision of social infrastructure and renewables.
DBJ Japan 1951	To finance and support development of important domestic industries as part of post-war recovery	To contribute to the smooth supply of long-term business funds and to the sophistication of financial functions
BNDES Brazil 1952	To implement and carry out the Federal Government's investment policy	To support programs, projects, construction and services related to the country's economic and social development. Original agency converted to state-owned enterprise (SOE) in 1971 and then a group structure in 1982 with BNDES Participacoes (BNDES Investments), FINAME and BNDES Ltd. Since 2015, BNDES has focused on catalysing third-party capital, driven in part by the removal of fiscal support.
DBSA South Africa 1983	To advance the development impact in the region, originally as part of apartheid era homeland system	To expand access to development finance, to integrate and implement sustainable development solutions, to improve quality of life through the development of social infrastructure, support of economic growth and regional integration, and to promote the sustainable use of scarce resources. Now in transition after losses at sub-national level led to government equity injection.
CDB China 1994	To finance and implement the Chinese government's domestic economic development strategy	To enhance national competitiveness and improve people's livelihood CDB is a policy bank that is largely domestic, but activities range from the sub-national level to international. It is a major developer of capital markets and promoter of CNY internationalisation. Originally set up as implementation arm of State Planning Council but converted to joint stock corporation in 2008 and DFI in 2015. Operations accelerated after global financial crisis in 2008. Major problems of non-performing loans at sub-national level in late 1990s, gradually worked out using asset management companies and shift to more commercial business model.
PT SMI Indonesia 2009	To catalyse Indonesian infrastructure development after years of low investment	Part of major reform programme to address stagnation following Asian financial crisis in 1998; low infrastructure investment levels in early 2000's led to an enhanced status of the MoF and a series of, funds and facilities being established. PT SMI was one of these, and was established in 2009. PT IIF was then established in 2010 to act more in the private sector space but also provide equity, FDI and support for capital market development; PT IIF is seen as complementary, in which PT SMI has a 30 percent stake.
CGB USA 2011	To support the Governor's and Legislature's energy strategy to achieve cleaner, less expensive, and more reliable sources of energy while creating jobs and supporting local economic development	To work with private-sector investors to create low-cost, long-term sustainable financing to maximise the use of public funds for clean energy.
CEFC Australia 2012	To facilitate increased flows of finance into clean energy and energy efficiency sectors, and support government's	To mobilise investment in renewable energy, low-emissions and energy efficiency projects and technologies in Australia and to finance Australia's clean energy sector.



Institution	Rationale for establishment	Present mandate/key developments
	commitments to carbon emissions reductions	
GIB UK 2012	To accelerate the UK's transition to a greener, stronger economy	To reduce greenhouse gas emissions, advance efficiency in the use of natural resources, protect/enhance the natural environment and biodiversity; to promote environmental sustainability. Privatised through a trade sale to Macquarie in 2017.
NIIF India 2015	To address long-term financing needs of the Indian infrastructure sector	To maximise economic impact through infrastructure development in commercially viable projects.
CIB Canada 2017	To provide low-cost financing for new infrastructure projects and support where a lack of capital represented a barrier to progressing infrastructure projects	To invest in revenue-generating infrastructure projects of public interest; attract private sector and institutional investment; to build a portfolio of investments contributing to Canada's greenhouse gas reduction goals.

Source: CEPA analysis of country case studies.

2.4. STRUCTURE OF THE GUIDANCE NOTE

The evolving role of NIBs will be analysed by considering:

- the traditional NIB model and how this has evolved over time to meet different policy requirements (Section 3);
- the role of NIBs in supporting PPPs and the different capabilities required for this, in both developed and emerging markets (Section 4);
- how NIBs have been used to support renewables and other climate change initiatives (Section 5); and
- what can be concluded with regards to major lessons learned and NIB good practice (Section 6).

The report is accompanied by a series of Annexes:

- Annex A – sets out some key concepts necessary to understanding the role of NIBs;
- Annexes B through L – present the eleven stand-alone case studies; and
- Annex M – lists the sources consulted in the presentation of the report.





3. THE TRADITIONAL NIB MODEL

The 'traditional NIB model' is the starting point for the analysis. As set out in Section 2, the rationale for setting up NIBs in the first instance was to act as a way of raising long-term capital efficiently in order that it was on-lent to public sector infrastructure, initially in the context of post-war reconstruction. Since then, other public finance focused institutions were also set up to drive economic development ambitions such as BNDES, DBSA and CDB. As well as supporting infrastructure projects sponsored by national governments, the traditional NIB has been able to provide long-term debt finance to projects at the sub-national level.

Two versions of the traditional model have emerged which differ in how they were capitalised and resourced:

- **Model I - fiscal transfers from government:** BNDES, for example, was largely financed by fiscal transfers; and
- **Model II - direct government equity contributions:** KfW, CDB, and DBSA were given direct government equity contributions to leverage capital raised in national and international bond markets, typically with different forms of sovereign guarantees, including callable capital.

In addition to providing long-term debt capital, such institutions also employed professionals with technical, legal, financial and economic appraisal skills.

From the 1990s onwards, there has been a shift towards an increased role for the private sector in both the operations and financing of infrastructure in both developed and emerging economies. Whilst this has necessitated the development of new, more commercial skills, aspects of the traditional NIB model are still evident.

3.1. PROVIDING LONG-TERM DEBT AT EFFICIENT RATES

Where the traditional NIB model has involved the raising of debt in capital markets, it has been accompanied by significant credit enhancement by host governments, which has enabled them to raise finance very efficiently, at very low risk premia and, therefore, low cost. This is facilitated through NIBs having credit ratings that are typically the same as those of the sovereign, as illustrated in Table 3-I.¹²

Table 3-I: NIB and sovereign ratings

	KfW	DBJ	DBSA	BNDES	CDB
NIB rating	AAA	A+	BB+/B (FC) 'BBB-/A-3 (LC)	BB-	AA-
Sovereign rating	(LT/outlook/ST)	(LT/outlook/ST)	(LT/outlook/ST)	(LT/outlook/ST)	(LT/outlook/ST)
Foreign currency ratings	AAA/Stable/A-I+	A+/Positive/A-I	BB/Stable/B	BB-/Stable/B	A+/Stable/A-I
Local currency ratings	AAA/Stable/A-I+	A+/Positive/A-I	BB+/Stable/B	BB-/Stable/B	A+/Stable/A-I

¹² Note that it is very difficult for a NIB to have a rating higher than the host sovereign given the significant role of the host sovereign in the NIB's own funding.



	KfW	DBJ	DBSA	BNDES	CDB
Credit enhancement of bond issues	100 percent of debt guaranteed by Germany	39 percent of bonds issued in 2018 guaranteed by Japan ¹³	Callable capital	N/A	100 percent of debt issuance guaranteed by China ¹⁴

Source: S&P Sovereign Ratings and Country T&C Assessments as of 31 August 2018. [Online] and NIB websites.

This low-cost financing provides the ability of the institution to on-lend at rates significantly below the rates it would have to charge if its financing costs had been higher. This is effectively a taxpayer subsidy, in which the usually remote risk of a default by the NIB is socialised across taxpayers, with infrastructure projects benefiting from this. As long as the NIB is well-run and at an efficient scale, ultimate customers should benefit where this leads to tariffs or other costs of service that are lower than they otherwise would be. The corollary to this, however, is that NIBs do not expose themselves to excessive risk. Whilst this is not such an issue in the traditional model where the lending is to public sector entities, ultimately backed by taxpayers, it has greater implications where the lending is 'at risk'; that is, in the context of PPPs, where it is likely more difficult to recover exposures in the event of a default.¹⁵

A further aspect of this model is that, because of the NIB's high credit rating, not only can it borrow at a lesser cost than most private entities, it can often raise capital at longer maturities. Borrowing is also often in the domestic currency, which can help develop the depth and breadth of local capital markets.

This traditional public sector-based model in which lending is to the public sector and where bond issues are guaranteed in some way by the sovereign mimics some of the characteristics of multi-lateral institutions, such as the International Bank for Reconstruction and Development (IBRD), in which any capital raisings are effectively guaranteed by callable capital from member countries.

Additional subsidies can also be delivered to public sector borrowers through this model, over and above the passing through of efficient financing costs. In these instances, the capital of the NIB can be supplemented by additional fiscal transfers which, for instance, can be used as explicit interest rate subsidies. For example, KfW offers Investitionskredit Kommunen 208 (Investment Credit Municipalities) (IKK) for municipalities which allows municipalities to combine loans from KfW with grants.¹⁶

Although not a focus of this Guidance Note, it is worth observing that several traditional NIBs, in particular KfW, have internationalised their operations, as a result of policy direction from their government owners. This has enabled foreign governments, typically in less developed countries, to borrow from them on a sovereign basis and benefit from the NIBs' low-cost capital. This also replicates the changed focus of the World Bank from European reconstruction to global development.

3.2. TYPICAL LENDING ACTIVITIES

Within the infrastructure space, the traditional NIB model was focused on public finance of state-owned utilities and publicly sponsored projects on both national and sub-national bases. Lending on a sub-national

¹³ Development Bank of Japan. Bond Issuance - Fiscal 2018 Bond Issuance Policy and Plan. [Online] <<https://www.dbj.jp/en/ir/credit/plan.html>>.

¹⁴ CBonds Website. China Development Bank — Company card. [Online]. <http://cbonds.com/organisations/emitent/19527>.

¹⁵ NIBs can, in theory, establish separate ring-fenced subsidiaries that can take on more risk.

¹⁶ KfW Public Facilities - IKK - Investment Credit Municipalities. [Online]. [https://www.KfW.de/inlandsfoerderung/C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-Kommunen-\(208\)/](https://www.KfW.de/inlandsfoerderung/C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-Kommunen-(208)/).





basis involves providing loans to sub-sovereign entities, such as SOEs, states and provinces, municipalities and cities, without a formal guarantee from the national government. As such, both national and sub-national lending can involve borrowing by different forms of public sector corporations and arms of government, but the difference is arguably more one of where the ultimate recourse for repayment lies.

Hence, depending upon the specifics of the arrangement, sub-national lending can involve a higher degree of risk than lending to projects in which the national treasury is responsible for repayments of principal and interest, although there may still be an implicit guarantee that central government will step in if problems arise. Examples of central government-backed lending includes projects where the national government, be it line ministries or even the national treasury, is ultimately responsible for repaying a project's financial obligations. This can include lending directly to the government, with proceeds being used to fund infrastructure, or where the government has provided an explicit guarantee to an infrastructure project. For example, Caisse des Dépôts et Consignations (CDC) in France has often provided debt to projects backed by the Government of France, and a recent example of this includes the EUR 250 million it will provide to the Nice-Côte d'Azur tramway project.

Examples of sub-national lending include providing long-term loans to SOEs -- for instance, DBSA has provided long-term loans to Eskom, the publicly-owned power utility in South Africa (a R15 billion loan was recently made without a formal guarantee). On the other hand, municipality lending refers to projects and programmes where finance is provided to sub-national government entities, examples of which include:

- **KfW's IKK lending programme**, whereby it provides up to EUR 150 million per year and client to municipal and social infrastructure projects such as schools, telecommunication networks and transport infrastructure.
- **DBSA's ZAR 700 million (USD 14 million)¹⁷ 15-year loan to eThekweni Municipality**, to support the financing of delivery of potable water to the northern and western regions of the municipality.
- In China, **CDB** has been a key lender to a range of municipal infrastructure projects throughout the country. A recent example includes a CNY 3 billion (USD 440 million) loan commitment to the Anhui provincial government for the **Yuexi-Wuhan railway project**.

As this creates few opportunities for the involvement of private capital, such financing operations are typically limited to the provision of long-term credits to public sector borrowers. In many countries, the potential for this business has decreased in recent years as more and more infrastructure and utilities have been privatised, reducing the available customer base. For instance, outside of renewable energy, less than four percent of KfW's public sector domestic lending is for economic infrastructure, with lending activities focused more on either SMEs or else on social infrastructure, with a portfolio of low-cost debt instruments developed specifically for these purposes. KfW's public sector lending is observed more in emerging markets, where there is a greater prevalence of SOEs engaged in infrastructure sectors.

In terms of governance and an emphasis on long-term patient credit provision to sub-national clients, CDB, BNDES and DBSA have a high degree of similarity. BNDES has had a wide thematic and sector remit and CDB has been a platform to support the internationalisation of domestic enterprise and trade, often involving SOEs. The portfolios of CDB and BNDES show significant sub-national geographic concentration, while non-

¹⁷ Please note that figures in currencies other than US dollars or Euros are also provided with US dollar equivalents, based on current exchange rates at the time of writing. These are intended to provide an indication of the US dollar equivalent value.



performing loans tend to be low but cyclical. More recently, avoidance of losses of financial resources provided by the state have been a key reform driver at both CDB and DBSA.

Box 3-1: Questions to answer when considering establishing a new NIB

BNDES, CDB, and DBSA all provide long-term debt at efficient rates and have a number of common characteristics. They are 100 percent government owned with substantial state equity investment and provide long-term debt as their primary product.

CDB and BNDES have privileged access to low-cost public financial resources, either through captive capital markets or Treasury fiscal transfers. All three have lending structures/policies that cover national/federal, provincial/state, local governments and urban corridors/cities but with a very strong anchor in sub-national clients. They also have significant client and geographic concentration.

Their infrastructure sectoral priorities emphasise energy and transport, less so water and sanitation; housing and social infrastructure are also present but are marginal in value terms. BNDES is also a major financing platform for Micro Small and Medium Sized Enterprises (MSMEs).

Their portfolios are typically over 80 percent domestic, but with more recent regional or global activities, reflecting a strong policy alignment with national governments. There is also an increasing interest in green finance and alternative energies, particularly wind, solar and smaller hydro. In theory, they all present a strong corporate adherence to sustainability, social and environmental values. However, attribution and impact are not independently generated and typically based on forecasts, rather than on actuals measured once a project is operational.

Both BNDES and DBSA are in the process of transformation to organisations more focussed on additionality, crowding in private sector investment and capital market development. Each of the three banks has the same credit rating as the national government.

Source: CEPA analysis.

3.3. CAPITAL MARKET OPERATIONS AND DEVELOPMENT

Although there has not been much scope for financial innovation in this model, in terms of traditional public finance business, the capital raising activities involved in issuing bonds, with differing principal maturity dates and in domestic currency, can be seen as helping to promote capital market development. Examples of guaranteed longer-term bond issues include:

- CDB¹⁸ – Domestic bonds, CNY 40 billion CNY (USD 5.9 billion), coupon rate: 4.8 percent, maturity: 4 November 2029.¹⁹
- KfW²⁰ - Domestic bonds: EUR 1 billion, coupon rate: 1.375 percent maturity: 31 July 2035.²¹

Whilst the more established and often larger NIBs all started with the business model outlined above, most have adapted in recent years and diversified their operations to support private finance of infrastructure, as discussed below in Section 4 of this Guidance Note.

¹⁸ All CDB bonds appear to be fully guaranteed by the Chinese Government.

¹⁹ CBonds Website. Domestic bonds: China Development Bank, 4.8 percent 4nov2029, CNY (090219, CND1000020Z6). [Online]. <<http://cbonds.com/emissions/issue/259927>>.

²⁰ All KfW bonds appear to be fully guaranteed by the German Government.

²¹ Boerse Stuttgart Website. KREDITANST.F.WIEDERAUFBAU MED.TERM NTS. V.15(35) WKN A11QTK | ISIN DE000A11QTK7. [Online]. <<https://www.boerse-stuttgart.de/en/Kreditanstalt-fuer-Wiederaufbau-bond-DE000A11QTK7>>.





4. SUPPORTING PPPS

Over time, the traditional NIB model discussed in Section 3 has often evolved in different ways to enable support for new government policy initiatives, especially PPPs and, more latterly, the green economy (which also has the objective of mobilising third-party private capital and is discussed in Section 5). This has either involved existing NIBs diversifying their operations or else the creation of new national institutions to mobilise third-party private finance for infrastructure. To varying degrees, support to PPPs has therefore involved:

- In the case of existing NIBs, a move from predominantly lending to public infrastructure projects and state-owned utilities, where loan evaluations were largely based on technical, economic, social and environmental criteria, to risk-based lending to projects involving credit assessments, where the NIB has been exposed to full project risk (in the absence of a guarantee from central or local governments).
- The use of subordinated investment and guarantees, including subordinated debt, equity-based investment and credit guarantees in order to mobilise third-party capital, in addition to senior lender positions, through either the establishment of dedicated subsidiaries or wholesale investment in intermediated equity funds (e.g. NAIF, NIIF).
- Albeit to a limited degree, greater sophistication in capital market operations in terms of mobilising third-party risk capital (including through more complex securitisations), especially institutional finance from pension and insurance funds (e.g. DBJ).
- Support for concessional loans through the deployment of budgetary allocations, which have been used to support privately-financed projects (e.g. CIB, NAIF).
- Increased activity in project preparation, particularly in order to support public sector pipeline development, origination of PPPs, knowledge management, communications and advocacy (e.g. BNDES, DBSA).²²

4.1. OBJECTIVES OF RAISING THIRD-PARTY RISK CAPITAL FOR PPPS

Attracting private finance into infrastructure and therefore mobilising additional financial resources has the benefit of helping to bring more infrastructure onstream than would otherwise be the case; although it should be remembered that all infrastructure has to be ultimately paid for either by users or government (constrained affordability being the principal limitation on infrastructure provision in most markets). A corollary to raising private finance, however, is that this finance is typically 'at risk' (at least to some degree), in that it is not fully guaranteed by government (otherwise it would be largely the same as government borrowing). In other words, by removing the 'fiscal headroom' constraints that governments face, private financing offers a route to accelerate infrastructure provision, with the costs of this being spread out over the term of the financing.

NIBs can *potentially* play a significant role in the mobilisation of third-party risk capital in three ways:

²² As set out, the focus of this Guidance Note is on the domestic activities of NIBs, but it should also be noted that several of the larger traditional NIBs, as well as lending on a sovereign basis, have also provided risk capital to projects. In the case of KfW, this has occurred both directly but also through its private sector focused subsidiary, DEG. As with the World Bank, exposure to non-sovereign risk usually necessitates some degree of indemnification from the host government. CDB's international operations also involve similar protections.



- **Raising capital without guarantees by leveraging their own capital.** A relatively straightforward approach to mobilising third-party risk capital is through issues of bonds by NIBs, but without full guarantees or the backing of callable capital. This is the same way as DFIs raise third-party capital without guarantees, utilising their high credit ratings. A criticism of some DFIs pursuing such an approach, however, is that in order to maintain a high credit rating the institutions pursue extremely conservative, low-risk lending and investment policies.
- **Mobilising capital at an intermediated level through debt and equity funds.** NIBs can be anchor or cornerstone investors in debt and equity funds, helping to attract third-party capital. NIIF and GIB were both established with the potential to invest in third-party funds. Subordinating debt investment or equity investment into a fund can help attract third-party private capital into the funds.²³
- **Mobilising finance at the project level** through a range of instrument and structures, either in **primary** financings of *greenfield* projects or else in **re-financings** of *operational* assets:
 - *Primary financings:* As with DFIs, the main product of NIBs is senior debt, which involves the least risky part of the financing structure of a project whether this involves the provision of a loan or investment in senior debt instruments, such as project bonds. This can provide confidence to commercial lenders. Other credit instruments include guarantees of senior debt. Because they absorb more risk, guarantees, subordinated debt and equity investments can be more catalytic in mobilising third-party finance. These interventions can be even more attractive to private finance providers if the additional risk is not fully priced (that is, subsidised).
 - *Secondary financings,* in which operational assets are refinanced, can be more attractive to private sector investors, particularly institutional ones, than greenfield primary financings. NIBs can facilitate these secondary financings through exiting either an individual transaction or a group of transactions. In the case of the former, the individual project can then seek refinancing either through new bank loans or else bond issues. In the case of a group of transactions, the loan assets can be placed within a securitisation vehicle, into which institutional investors can invest.

In exploring specific approaches involved in NIB support to PPPs, institutions supporting domestic PPP infrastructure in high-income countries are differentiated from those in emerging markets, and are discussed separately in Sections 4.2 and 4.3 below. Box 4-1 below describes how the financing challenges differ across markets.

Box 4-1: How do the infrastructure financing challenges differ across markets?

Improving access to quality infrastructure is a key policy objective of governments across both developed and emerging markets. While political commitment to improving infrastructure provision may be present at the highest level, obstacles still exist. Aside from challenges related to project preparation and development, many

²³ Often this can involve a three-tier structure, in which government grants are the most subordinated tier, the public finance institution the next tier, and commercial capital ranking most senior. Although outside the scope of this Guidance Note, this approach has been followed in many instances by KfW which has been provided by grant monies from the German Government and the European Union. Similarly, both DBSA and KfW have, at different points in time, been subordinated lenders within the three-tier structure of the Emerging Africa Infrastructure Fund.





experts have noted that to make quality infrastructure a reality, key financing issues need to be addressed. Issues around financing infrastructure differ, however, between high- and low-income countries.

In high income countries:

Although private sector lenders and investors are willing to invest in infrastructure, the finance costs associated with private finance are almost always higher than public sector finance, given that governments can raise capital more cheaply and over longer periods than private counterparts.²⁴ This means that projects financed with private debt and equity can lead to higher end user charges. To mitigate these costs, arrangers of finance will often seek to maximise inputs from public financial institutions which are able to raise and on-lend finance more cheaply. For example, in the UK, roughly 50 percent of the financing for offshore transmission assets comes from the European Investment Bank (EIB) - an AAA-rated institution - which passes on the benefits of its less expensive capital to borrowers.²⁵

In many countries, while institutional investors do indeed have large volumes of capital under management, fragmentation of asset allocations means that individual institutional investors may only have limited resources available to finance infrastructure projects.

In emerging markets:

The ability of private banks to provide longer tenor, local currency finance is often limited. As a result, the tariffs required to deliver infrastructure financed by them is higher relative to what it could be if longer-tenor finance were available; projects and users are also subject to considerable exchange rate risks where longer-tenor foreign exchange is required.

The local capital markets can be thin with limited private sector technical capability; in more developed contexts, both equity and debt capital markets have been the conduit through which infrastructure projects and companies looking for long-term efficient financing have been introduced to investors seeking out long-term assets (for instance, pension and insurance companies seeking to match their long-term liabilities).

Across markets at all levels of development:

Private lenders and investors with access to large sources of capital, including institutional investors, often lack the in-house technical capabilities to assess credit risks associated with individual infrastructure projects. In addition, regulation of such sources of capital means that investment outside of government bonds and traded stocks (especially for institutional investors in lower income countries) typically cannot exceed a certain proportion of their portfolios.

As several financial crises have shown (including the Asian financial crisis and the more recent global financial crisis), private sector debt lending can fluctuate with business cycles, meaning that during times of financial hardship, access to private sector lending can be limited as a result of institutions being less willing to lend to large and relatively illiquid transactions.

One way governments seek to address some of these challenges is to establish financial institutions with a specific focus on infrastructure. NIBs, which have varying degrees of government support, can often draw on the relatively high credit ratings of their host governments to offer finance with rates and tenors that make infrastructure more affordable to end users, while still allowing for commercial returns.

Source: CEPA analysis.

4.2. SUPPORTING PPPs IN HIGH INCOME COUNTRIES

Depending upon the country in question, NIBs have played important roles in helping to catalyse third-party capital.

²⁴ While governments can raise capital more cheaply because they have higher credit ratings when they lend it on and do not charge a proper risk reflective margin, they are essentially providing subsidised finance or, put another way, project risk is being socialised amongst taxpayers.

²⁵ Note that the risk profile of the project – which should be taken into account in debt pricing – is not determined by who is providing the debt finance.



Traditional NIB providers of long-term debt have facilitated the successful implementation of PPP projects in several ways:

- Unless projects have some form of guarantee, **there is a need to understand quite complex project risks**, which even Ministries of Finance may not have the requisite capabilities to evaluate. NIBs are well positioned to build up these skills, managing taxpayer risks in an informed manner.
- **Reducing financing costs of PPPs relative to what they would have been if fully privately financed.** This can be helpful especially where comparisons are made between the costs of pure public finance (where no risk premium is added to public borrowing costs) and private financing, where the latter will always be more expensive. This extends to providing subsidies to qualifying projects where there is a compelling social or environmental case to do so.
- Even in countries with relatively well-developed credit and capital markets, **new types of projects and their associated risks can inhibit private investment.** The involvement of a NIB can help address investor and especially lender concerns, even where the NIB's position is as a senior lender (sometimes referred to as the halo effect); that is, without subordinating itself to others. This has been the case particularly with renewable energy projects (explored in more detail in the next section). Overall, however, it is illustrative of the important function of 'crowding in' private finance.

4.2.1. Understanding project risks

There are significant differences in risk profiles between providing a credit to projects that the public sector stands behind, potentially with an explicit government guarantee, and project financings in which the loan is at risk from a range of different commercial and financial risks, which need to be allocated to different stakeholders in a transaction for the project to be bankable.

This greater complexity and risk have a number of implications. The first is the need for more commercial banking skills, as opposed to more traditional public sector project appraisal skills. These will typically come at a higher cost and it can be difficult to fit such employment market requirements within public sector pay scales. Hence, whilst NIBs as public institutions will probably not offer the same level of remuneration as commercial employers, there is a greater opportunity to offer the more enhanced packages often necessary to attract the requisite skill set.

Another requirement is to ensure that investment and loan decisions are made based on the correct criteria, free from political interference, avoiding problems of 'directed credit', where governments dictate, either directly or indirectly, which projects are to receive finance. This can be easier to achieve through a ring-fenced, stand-alone entity; however, it is also necessary to ensure that the right governance is put in place, including boards with the requisite credit/investment skills, probity and political independence.

4.2.2. Reducing project financing costs

NIBs can channel their own highly efficient funding costs to the benefit of PPPs in the same way that they do for public infrastructure projects. Even where risk premia are then added into NIBs' loan products to reflect specific risks associated with lending to the private sector on a full risk basis, they can still price the same projects more competitively than fully private entities, due to their own funding costs being typically lower. And, if not more importantly, NIBs have the advantage of being able to offer very long tenors, which commercial banks often struggle to do.





It is important to note, however, that two recently established NIBs, namely NAIF and CIB -- which are both focused on providing finance to PPPs, offering long tenor debt at competitive and even concessional rates -- have, to date, not sought to raise finance from capital markets, but instead have focused on channelling budgetary resources to the most difficult projects, with NAIF having been given a specific budgetary appropriation to do so.

Box 4-2: NAIF

NAIF was set up and funded with appropriations from the Commonwealth of Australia's Consolidated Revenue Fund, to support infrastructure in the less developed and less populated northern region of the country. In this model, NAIF provides funds to states (Queensland and Western Australia) and the Northern Territory to on-lend to projects.

Specific subsidies -- measured as a discount to market loan pricing -- can be worked into NAIF's loan pricing, but only where the public, as opposed to private benefits, justify it. In determining any concessions to offer a project, the NAIF Board must have regard to:

- the extent and mix of all concessions necessary for the project to proceed; and
- the extent of the project's public benefit (a ratio of public benefits to the scale of the subsidy is used to measure this).

Concessions must be the minimum the Board considers necessary for the project to proceed and can include:

- longer loan tenors (up to nearly 28 years under current Commonwealth borrowing conditions);
- lower interest rates (not below the Commonwealth bond rates);
- extended periods for interest capitalisation beyond construction completion;
- deferral of loan repayments or other tailored repayment schedules;
- lower or different fee structures to commercial financiers; and
- ranking lower than commercial financiers for purposes of cash-flow or enforcement of security.

Source: NAIF investment mandate.

A criticism often levelled at PPP infrastructure is that private financing is more expensive than pure public financing, in which governments raise capital from public bond markets and then on-lend or even grant it to projects. Part of this will nearly always be true in developed markets; that is, that governments' cost of funds will always be cheaper than the wholesale funding costs of commercial banks.²⁶

To a degree, NIBs can help bridge the gap between public and private financing. On the one hand, they benefit from the ability of governments to raise capital more cheaply than private sector entities (although the subsidy inherent in this needs to be recognised) and, on the other hand, the capital on-lent has appropriate risk reflective pricing. Where there are additional affordability or positive externality considerations, additional grants can be used to soften financing costs, such as through explicit interest rate subsidies in blended financing approaches. The ability to do this, however, can be more limited in contexts such as the European Union, which takes a strict line to the associated state aid²⁷ implications of such approaches.

²⁶ However, it is incorrect to compare the costs of private financing, in which a full risk premium is included by the lender to take account of the risk of borrower default, with public sector loans, in which no risk premium over and above the costs of government borrowing is included in the public loan costs.

²⁷ "State aid is any advantage granted by public authorities through state resources on a selective basis to any organisations that could potentially distort competition and trade in the EU. The definition of state aid is very broad because 'an advantage' can take many forms. It is anything which an undertaking (an organisation engaged in economic activity) could not get on the open market. State aid rules can (among other things) apply to the following: grants; loans; tax breaks, including enhanced capital allowances; and the use or sale of a state asset for free or at less than market price." Extracted from the UK Government State Aid Guidance (2015). [Online]. <<https://www.gov.uk/guidance/state-aid>>.



4.2.3. Crowding in private investment

A key role of NIBs is to crowd in additional private sector debt. This can be done in different ways. Sometimes it is limited to having a major publicly -owned entity participating in a transaction, leading to participation from other lenders who otherwise may not have considered involvement. Such involvement can also be seen as protection against adverse government actions, including reneging on commitments, as governments are much less likely to cause projects to suffer or even fail when they are exposed to them through their NIB.

In other instances, capital can be crowded in by the NIB subordinating itself or adopting junior positions within the project financing structure, relative to pure private sector capital. This provides extra protection to private sector lenders.

As set out in Box 4-2 above, this is something that the NAIF in Australia has specifically sought to do by being able to offer subsidies in the form of adopting junior debt positions within a financing structure.

The CIB in Canada and NAIF in Northern Australia have an overarching objective of supporting regional economic development and coordinating different levels of government to identify a pipeline of investment opportunities. Both institutions have only been established in the last two years and, accordingly, NAIF has made only a handful of commitments, whilst CIB has made only one as of December 2018.

Their principal rationale is to target support on projects which may be commercially marginal, but which have significant positive externalities. Whilst they aim to ideally crowd in third-party private finance, in certain circumstances NAIF can provide 100 percent of a project's debt. Because their remit is to support economic development, both are focused on greenfield infrastructure or infrastructure with new elements. Both institutions have a mandate to focus on revenue-generating infrastructure (i.e. 'user pay projects') and to generate a positive return for taxpayers. However, from the evidence, it appears that both of these NIBs may also be used as a policy tool to subsidise projects that would not otherwise attract financing, rather than demonstrating such projects can be commercially viable. The main similarity in approach is that both institutions offer concessional finance to projects that would not otherwise be viable, where there is an evident public interest in supporting the project.

For example, both institutions can offer concessionality by offering debt at below market rates, or tailoring repayment structures to specific project circumstances, or by taking subordinate positions in the financing structure. In this way, they are taking on a greater share of risk in order to keep user charges low.

There are also some important differences between CIB and NAIF, although it is important to highlight that both institutions are still maturing and their respective mandates may continue to evolve. In terms of products, NAIF is a debt-only facility which (as discussed) can lend up to 100 percent of a project's debt, providing there is appropriate risk sharing. CIB can take higher-risk equity positions, but can only provide support of up to 49 percent of the total project value, thus it cannot completely crowd out the market and the project must still be structured to appeal to private investors.

4.2.1. Project preparation

Given NIBs' roles as a centre of expertise for infrastructure projects, and their ability to assess infrastructure investment proposals and to structure investments, they are often given the complementary role of custodian of their country's project pipeline.

CIB appears to be recruiting in-house expertise to develop and coordinate a pipeline of infrastructure projects, to act as a centre of expertise on infrastructure projects involving private-sector investment, and





to advise other levels of Canadian government. Presently, it appears that NAIF's remit is limited to collating a pipeline of infrastructure opportunities in its regions of focus, rather than building expertise that can be utilised nationally.

The Global Infrastructure Hub has also developed a leading practice reference tool on Governmental Processes Facilitating Infrastructure Project Preparation²⁸ which highlights the role of the National Infrastructure Fund (Fondo Nacional de Infraestructura, or FONADIN), under the National Development Bank for Public Works and Services in Mexico, in supporting project preparation.

4.3. SUPPORTING PPPS IN EMERGING MARKETS

All of the above attributes are highly relevant, if not more relevant, in the context of emerging markets. However, in contexts where credit and capital markets are less developed, NIBs can play a dual role of addressing the financing challenges to which this gives rise, as well as helping in the longer-term development of capital markets.

In addition, particularly in emerging markets, the model has been adapted to include the provision of equity investment as well as debt. In these countries, NIBs also often play a role in developing infrastructure project pipelines.

4.3.1. Addressing credit and capital market gaps

One of the key challenges faced in emerging economies is the inability of domestic credit and capital markets to provide long-term, competitively priced, local currency debt to PPP infrastructure projects. This often leads to a reliance on foreign exchange financing in which currency depreciation risks cannot be adequately hedged, resulting in governments and/or customers having to bear these risks.

NIBs can help address this challenge in a number of ways:

- As specialist vehicles, they can act as conduits for sovereign loans raised from development partners to be channelled to projects, often in forms, such as subordinated debt, which can mobilise third-party capital.
- Whereas local institutional investors and banks may be unwilling to lend to infrastructure projects directly, especially where they do not understand the risks involved, they may sometimes be more willing to invest in a state-backed entity.
- NIB capital will most likely be provided in local currency and at a relatively efficient price, which can help affordability and currency matching.

In turn, issuing bonds in capital markets can help with their deepening and widening.

Provision of long-term debt financing in foreign exchange and local currency

A minimum of 60 percent of the financing for typical PPP infrastructure projects in emerging markets is debt. As with public infrastructure, the provision of long-term debt at efficient rates is crucial to delivering affordable projects. Even where private sector operators are more efficient than public ones, the all-in costs of the project are likely to be greater than pure publicly financed projects, unless subsidies are used to offset

²⁸ Available at <https://www.gihub.org/project-preparation/>



more expensive private sector-provided debt and equity. It is likely that NIB-provided debt will still be cheaper and likely longer term than debt provided by the private sector, whether this is provided in a foreign or local currency.

Whereas the many international DFIs who are active in emerging markets provide most of their debt in foreign currency, the government backing of many NIBs, whether *explicitly* through guarantees or callable capable or even *implicitly* (that is, it is believed that governments would step in if they encountered problems) also enables them to issue bonds more efficiently than private sector lenders. This is a way of addressing the perennial ambition in many emerging markets of providing long-term local currency debt to infrastructure projects. For example, as of 2018, over 98 percent of DBSA's debt finance has been provided in Rand and similarly, 86 percent of BNDES' net loan portfolio is in Reales.²⁹³⁰ In India, the Indian Infrastructure Finance Company has also been a provider of long-term Rupee-denominated debt.

Most long-term lending to projects by NIBs takes the form of senior debt. This is the least risky part of a financing structure, as it has a first call on project or business revenues relative to other forms of finance and also ranks first in the event of an insolvency event. A typical way in which NIBs seek to mobilise senior debt from private sector lenders is through an A/B loan structure.³¹

It can be the case, however, that such approaches are insufficient. By providing subordinated debt, a NIB can create strong incentives to both equity and debt providers, as it provides an additional layer of protection to lenders and does not dilute returns to equity to the extent that additional equity would do. This can be even more catalytic where it does not seek a full risk reflective return; however, this level of concessionality needs to be funded, either through cross-subsidies from the rest of the portfolio or through separately funded interest rate subsidies.

Institutions such as the IDCOL in Bangladesh were initially set up to provide subordinated debt to PPP and private infrastructure projects, in which the Government of Bangladesh invested the proceeds of an International Development Association (IDA) credit in IDCOL, which funded subsidised USD subordinated debt. From this, IDCOL has evolved into a financial institution capable of providing both local and foreign currency long-term debt to projects.

Box 4-3: The Infrastructure Development Company Limited in Bangladesh

In 1997, the Government of Bangladesh established IDCOL, and in the following year it was licensed as a non-bank financial institution. Since its formation, IDCOL has played a significant role in bridging the financing gap for infrastructure, particularly for renewable energy projects in Bangladesh.

IDCOL is managed by an independent Board of Directors made up of four senior government officials, three representatives from the private sector, and a full time Executive Director and Chief Executive Officer. It is staffed with financial and market analysts, engineers, lawyers, IT experts, accountants and environmental and social safeguard specialists.

IDCOL provides project finance, corporate finance, debt and equity arrangements, grants and technical assistance, training and capacity building and advisory services. IDCOL also supports government and regulators in developing policies favourable to PPPs and private participation in infrastructure more widely.

²⁹ BNDES. Management Report (2018). [Online.]

https://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_en/Galerias/Download/management_report2018-1s.pdf.

³⁰ DBSA. Integrated Annual Report. (2017-2018). [Online]. <<https://www.dbsa.org/EN/InvestorRelations/Pages/DBSA-Annual-Reports.aspx>>.

³¹ See Annex A for a definition of A/B loan structures.





The existing IDCOL portfolio is very concentrated in renewable energy with approximately 72 percent of the total loan provided to the renewable energy sector – approximately 96 percent of that is invested in the solar home system program.

IDCOL provides long-term Bangladeshi taka (BDT) and USD loans to viable private-sector owned projects that meet its sector eligibility criteria. In energy efficiency and renewable energy, it provides BDT loans, with the exception of large grid-tied renewable energy independent power producer (IPP) projects which in some cases can qualify for a USD loan.

While IDCOL generally lends on commercial terms it can provide concessionary finance where projects demonstrate significant positive environmental impacts i.e. solid waste management, effluent treatment plants, battery recycling plants etc.

Source: IDCOL website. [Online]. <<http://www.idcol.org/>>

Equity financing

Although the traditional model initially focused on providing debt to projects, there are now several NIBs which have extended their operations to incorporate equity finance, either in addition to debt, or exclusively. In terms of the former, it has become common to do so through a subsidiary. Equity gaps in PPP finance occur when project developers are unable to provide or raise sufficient risk capital from third parties to fulfil the equity component of a given transaction.

India has had several NIB debt providers, including Infrastructure Leasing & Financial Services Limited and the aforementioned Indian Infrastructure Finance Company (established in 2006). However, growth of the PPP market in India has been hindered by a lack of equity, which has created financing gaps.

As a result, NIIF was created in 2015 with an anchor contribution from the Government of India and is an equity-only vehicle that is a patient long-term investor in commercially viable infrastructure projects, either existing or greenfield. It aims to be catalytic and market driven, by crowding in private sector funds from institutional sources, both domestic and foreign. These include sovereign wealth funds, multilaterals, and pension and insurance organisations, to create a USD 3 billion platform with three distinct funds and investment policies, as discussed in Box 4-4.



Box 4-4: The NIIF equity investment platforms

NIIF is an investor-owned fund manager, with an anchor investment from the Government of India, and participation from institutional investors and Indian private financial institutions. NIIF manage three funds with individual investment strategies. All the funds are registered as Alternative Investment Funds with the Securities and Exchange Board of India and each are in the process of raising capital from domestic and international institutional investors. NIIF has a USD 3 billion commitment from the Government of India and commitments from institutional investors; as a result, NIIF can operate at scale and provide patient capital.

NIIF investee funds, companies and projects adhere to an environmental, social and governance (ESG) framework – requiring upfront due diligence of investments opportunities and ongoing monitoring.

The three NIIF Funds are:

1. The Master Fund primarily invests in core brownfield infrastructure with predictable cash flows (e.g. roads, ports, airports, power etc.) The investee businesses have a long track record and are often operating in regulated environments or under concession or long-term agreements.
2. The Fund of Funds invests with experienced fund managers who have a track record of success. NIIF will often act as the anchor investor, and then the fund managers will raise further funds from institutional investors. The fund of funds is very diverse in terms of sectors, products, and investment styles.
3. The Strategic Fund is aimed at investments earlier in the target companies' lifecycle (development/growth). The sectors of focus are those of economic and commercial importance to India's medium- and long-term ambitions.

Source: NIIF website. [Online]. <<https://niifindia.in/>>.

Targets for investment include PPPs, with NIIF's emphasis being put on long-term collaboration and close working relationships with the Government of India. To date, the NIIF Master Fund has made an anchor investment with DP World into warehousing and logistics and, in April 2018, NIIF launched a Green Growth Equity Fund with the UK. Given its mode of operation and co-finance approach, NIIF will aim to crowd in private funds and boost performance of stalled or stressed assets; it will also provide due diligence to its partners. It is one of a series of measures and reforms designed to revive the Indian PPP infrastructure market.

Increasing financial innovation

Once established for a period of time, NIBs become more sophisticated in terms of the financial products that they offer. This is particularly marked in the cases of the largest BRICS-based (Brazil, Russia, India, China and South Africa) NIBs, but there is increasing financial innovation in other emerging markets too, much of it aimed at finding different ways of mobilising private finance. For instance, in Indonesia, PT IIF announced in mid-2017 that it would be developing additional PPP financial instruments, including bridging finance, equity and take-out financing (in which it provides a commitment to refinance a project if the initial lenders wish to exit). A recent USD 200 million loan from the World Bank should assist this innovation.

In future, PT IIF may increasingly take a private sector and PPP lead, as PT SMI is being readied to take over the Indonesia sovereign wealth fund (Pusat Investasi Pemerintah, PIP), extend financing directly to local governments and extend its sector coverage to industry and agriculture. In doing so, it will transform to the premier Indonesian DFI (Lembaga Pembiayaan Pembangunan Indonesia).

Capital market development

In addition to providing long-term finance for projects, the ability to raise capital and to invest in any debt issues from infrastructure projects can help with capital market development. In particular, where issues are not fully guaranteed by host governments, this can transfer a degree of risk to private sector investors, thereby not increasing its contingent liabilities in the same way as if it were guaranteeing debt issues. This could provide an effective channel of finance from institutional investors, through the NIB to projects, rather





than through government. This is important as the investors are still bearing risk (even though this may be relatively low) rather than the government having to bear the full contingent liability of a project going wrong, as in the case of pure public financing. More widely, the approach could form a useful way of channelling conservative institutional finance, on a risk basis, into infrastructure, where such investors would be unwilling to countenance direct investment in projects. However, it appears that most emerging market NIB bond issues continue to be supported by explicit government guarantees.

Even where bond issues are guaranteed by host governments, the ability to raise long-term local currency finance is a particular niche that remains challenging, including for the international DFIs, and is, accordingly, a potential unique selling point of NIBs. This role is observed most often as a feature of NIBs in the more developed BRICS countries, but NIBs in countries such as Indonesia are also beginning to issue local currency bonds.

As set out in Box 4-5, in the case of CDB, there have been both capital market capital raisings, as well as a securitisation of its loan book, in which institutional investors can be expected to take risk where there is an opportunity to invest in operational, rather than greenfield, assets.

Box 4-5: Capital market innovation by CDB

CDB proactively seeks to diversify financing sources and channels to projects, in particular to deepen and widen the domestic capital markets - CDB bonds account for 23 percent of market trading volume – through bond swap mechanisms, development of market instruments and improved treasury techniques.

Capital market activity includes asset backed securities, some CNY 38 billion (USD 5.6 billion) issued in 2017 with an aggregate total of CNY 300 billion (USD 44 billion). These include poverty alleviation bonds and performance guarantees for PPPs. It is an established lead underwriter (and syndicator) and attributes reductions in infrastructure financing costs to its interventions. It also offers softer terms to its loans, which try to crowd-in other resources to areas or industries needing regeneration or emerging high potential industries.

Source: CDB website and CEPA analysis.

In Indonesia, several bond market issues in [rupiah] have been made in local capital markets, albeit with a significant degree of credit enhancement, the proceeds of which have been invested in projects, as described in Box 4-6.

Box 4-6: PT SMI bond issues and investments³²

Bonds

In July 2018, PT SMI issued Indonesia's first government backed green bonds under a shelf registration issuance scheme worth IDR 3 trillion (USD 209 million),³³:

Series A – Principal: IDR 131.5 billion (USD 9 million), Coupon: 7.55 percent per year, Tenor: three years, Repayment: Bullet payment of 100 percent principal at maturity.

Series B – Principal: IDR 223.5 billion (USD 158 million), Coupon: 7.80 percent, Tenor: five years, Repayment: Bullet payment of 100 percent principal at maturity.

The Green Bond issue had a local rating of AAA (id) (Triple A). At the same time, PT SMI issued Sukuk Bonds which had the same rating.

³² Press Release - PT SMI Supports Sustainable Development by Issuing the First Green Bond in Indonesia. (July 2018). [Online]. <<https://www.ptsmi.co.id/press-release/pt-smi-supports-sustainable-development-by-issuing-the-first-green-bond-in-indonesia/>>.

³³ Jakarta Post - Sarana Multi Infrastruktur issues green bonds and sukuk. (July 2018). [Online].

<<http://www.thejakartapost.com/news/2018/07/10/sarana-multi-infrastruktur-issues-green-bonds-and-sukuk.html>>



In November 2018, PT SMI announced it would issue a IDR 828.5 billion (USD 58 million) bond, the series A bond worth IDR 635 billion (USD 45 million) with a coupon of 8.2 percent (tenor- 1 year) and series B valued at IDR 193.25 billion (USD 13.7 million) with a coupon of 8.7 percent (tenor – three years). SMI had planned to offer up to IDR 1.5 trillion (USD 106 million) in 2018 with IDR 671.75 billion (USD 47.6 million) still on underwriter securities guarantee.

PT SMI had also issued bonds in both 2017 and 2016.

Investments

PT SMI has invested in two toll roads (Palembang-Indralaya and Cikopo-Palimanan); two steam power plants (Tenayan and Molotabu Steam); a gas power plant (Tanjung Uncang); a container terminal (Palaran); a drinking water supply system (Umbulan); and a hospital (Karangasem).

Source: CEPA analysis.

4.3.2. Project preparation and technical assistance requirements

Another area where some NIBs have taken a role is in developing project pipelines and helping governments to structure and bid out PPP opportunities.

It has been argued by McKinsey³⁴ and others that a major success factor associated with infrastructure banks is the creation of a robust and well-prepared or ‘bankable’ project pipeline. The main aim is to improve project quality, and accelerate investment transactions and delivery, while limiting negative political interference. Examples of this activity include:

- In China, CDB has invested strongly in project preparation and structuring with client local governments and state enterprises active in the Belt and Road Initiative (BRI) and/or other bilateral country cooperation agreements.
- In South Africa, DBSA has also moved to expand and enhance its project preparation capability and has been granted technical assistance funds from different donors to do so.
- In Mexico, the National Infrastructure Fund (Fondo Nacional de Infraestructura, or FONADIN) was established in 2008 to accelerate private participation in Mexico’s infrastructure sectors, where it has been successful in providing high-quality project preparatory assistance, as well as financing for infrastructure.
- In Indonesia, PT SMI seeks to address a major capacity shortfall in providing project preparation services.

As set out in Box 4-7 below, BNDES is also active in this area.

Box 4-7: BNDES’ role in project preparation

BNDES contributes funding to complement the government and accelerate PPPs in municipalities, as well as at the state and federal level. A facility has been created for the exclusive purpose of preparing, structuring and

³⁴ McKinsey & Company. Creating an infrastructure bank: Principles of success (April 2017.) [Online]. <<https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/creating-an-infrastructure-bank-principles-of-success>>.





transacting a priority pipeline of PPPs, including concessions and privatisations.^{35,36} This has Presidential commitment and includes an investment advisory committee and secretariat to fast track a robust, fully structured and planned project pipeline. At present, there are some 150 nominated projects with a value of over USD 50 billion in transport, energy, telecommunications and water/ sanitation. These include large urban investments, as well as investments in smaller municipalities. Consultants are hired for the project preparation and advisory work; the cost of this is recoverable from the successful bidder. If the project does not proceed, the sponsor (municipality or state-owned enterprise) has to repay the project preparation costs.

Source: CEPA analysis.

³⁵ Brazil launched the Program of Partnerships and Investments in 2016 managed by BNDES, which enabled national, state, and local governments to access funding for TA to develop PPPs. In 2017, another state fund of 180 million Brazilian reais (USD 56 million) was established to finance technical and specialised services for structuring PPP and concession projects. The fund is administered by Caixa Economica Federal.

³⁶ World Bank Blog. Promoting bankable PPPs in Brazilian municipalities. (April 2018), [Online].
<<http://blogs.worldbank.org/ppps/promoting-bankable-ppps-brazilian-municipalities>>.



5. PROMOTING RENEWABLES/LOW CARBON

Many governments have sought to support the development of the green economy, particularly in terms of support to renewable energy generation and energy efficiency. Part of this support has been through the provision of explicit subsidies, funded either by governments or customers, through mechanisms such as feed-in-tariffs. A parallel approach in many countries has been to address financing barriers to renewables generation. Often this has included developing new capabilities within existing NIBs; in other contexts, new NIBs specifically focused on this challenge have been established. Such institutions have invested directly across the capital spectrum, as well as providing guarantees; they have also issued green bonds in order to channel capital into green investment opportunities. In addition, NIBs have looked to provide co-finance or partnership platforms, domestically or internationally with DFIs, MDBs, global or regional facilities and private sector institutions. NIBs' municipal reach has strongly supported decentralised and off grid renewable energy investment.

5.1.1. Increasing the capabilities of existing institutions

Several of the case study NIBs have developed skills in renewables financing, with activities focusing on both taking a lead in greenfield financing, such as in renewables generation, as well as the refinancing of existing green portfolios through the issue of green bonds.

Table 5-1: Summary of NIBs' experience in green finance

Institution	Green financing activities
BNDES	BNDES has undertaken a number of green financing activities, including issuing a USD 1 billion green bond, the proceeds of which have been allocated to eight wind power generation projects. Alternative technologies are one of its fastest growing infrastructure segments.
CDB	CDB has financed a wide range of clean energy infrastructure projects across all sectors. It has recently issued a CNY 25 billion (USD 3.7 billion) retail green bond through commercial lenders and two quasi-sovereign green bonds for BRI projects.
CIB	Green finance was highlighted as one of the priority areas for CIB when it was established, but it has yet to undertake any green financing activities.
DBJ	DBJ has built up significant experience in renewable energy sectors, including launching a new (jointly managed) fund to invest in wind power projects in Japan, and financing waste processing facilities.
DBSA	A number of the DFI credit lines include green projects, particularly in renewables or energy efficiency. DBSA has recently announced the creation of a Climate Finance Unit as an initial step towards establishing a green bank capability in-house.
KfW	KfW has been active in supporting renewable energy generation projects such as solar and wind, as well as providing support to energy programs.
NIIF	NIIF has invested in the Green Growth Equity Fund through its Fund of Funds, focusing on mid-market opportunities in the agriculture and green infrastructure sectors.
PT SMI	PT SMI has an IDR 3 trillion (USD 200 million) green bond program to raise finance for green infrastructure projects. It has a Sustainable Financing division, which focuses on providing financing, grants and technical assistance support to projects, with a focus on climate change mitigation, improving environmental quality and supporting low carbon development. It is also aiming to increase the role it plays in supporting project sponsors with quasi-equity products.

Source: CEPA analysis and NIB websites.





5.1.2. New institutions

Much of the rationale for creating new institutions has been to address specific market gaps. The GIB in the UK and CEFC in Australia were two new institutions established by their respective governments to support national climate commitments, and these entities have, accordingly, focused on green finance and clean technologies. Both institutions were intended to support and demonstrate the viability of emerging technologies whilst delivering a positive return for taxpayers. Their activities were ultimately funded by government (or by recycling invested capital) and they did not have authority to access private capital markets.³⁷

Both institutions were able to invest in a large portfolio of clean energy projects, demonstrating the viability of such ventures and successfully crowding in private capital. GIB claims to have crowded in GBP 2.50 of private sector finance for each GBP 1 invested, and CEFC claims to have achieved AUD 1.80 for every AUD dollar. There are several factors which are common to both entities which demonstrate important lessons:

- Both institutions have built specialist expertise in green sectors that gave them a strong understanding of risks and opportunities that the market had hitherto found difficult to assess.
- They had a written mandate to focus on emerging technologies and demonstrate their viability. This encouraged them to be a ‘half a step ahead of the market’, and may have helped to prevent them from crowding out other market participants, although there was some debate about whether onshore wind and solar projects should have been eligible for CEFC support.
- They had the flexibility to invest across the capital spectrum, in different sectors and through different structures. This gave them a relatively unique position in the market and enabled them to respond as the market for new green investments developed.
- They brought with them a ‘halo effect’ – i.e. a cornerstone investment by either GIB or CEFC helped to attract private investment (sometimes from investors new to the sector) due to the specialist nature of their expertise, or the market’s perception that government policy in relation to that sector was favourable.

Of course, there are also some interesting differences between the GIB and CEFC approaches. In the UK, the main conduit for subsidising clean energy projects has been through funding support mechanisms, ultimately paid for by customers, such as the Feed-in Tariff Scheme and Contracts for Difference³⁸, whilst GIB financing was on commercial terms – a key requirement for State Aid approval. In contrast, CEFC has the ability to offer clean energy subsidies through concessional finance where it is considered necessary and justified in overcoming financial impediments and facilitating realisation of the project. Should the Australian government explore options to privatise or divest CEFC, as was the case with the GIB, the concessional

³⁷ The GIB was fully privatised in 2017 and it now operates as the Green Investment Group. CEFC continues to operate as a publicly funded green bank.

³⁸ This is a UK government mechanism for supporting low-carbon electricity generation. It provides developers of projects with high upfront costs and long lifetimes with direct protection from volatile wholesale prices, and protects consumers from paying increased support costs when electricity prices are high. Extracted from the UK Government. Contracts for Difference Policy Paper (2017) [Online]. < <https://www.gov.uk/government/publications/contracts-for-difference/contract-for-difference>>.



nature of some of its financing activities would have an impact on the value that could be obtained through any future sale.³⁹

It is also notable that CEFC has invested a more significant share of its portfolio in aggregated financing solutions for Small and Medium-Sized Enterprise (SMEs) through co-financing programs with major banks and other financiers. Commonly targeted at energy efficiency projects, where the scale of opportunities make it impractical and not cost effective for a wholesale financier to engage directly, CEFC has used debt and equity to finance individual commercial property projects (as well as investing in existing or new funds) and provide some degree of concessional equipment finance (equipment loans, hire purchase or finance lease options) through intermediaries to consumers who choose more energy efficient equipment.⁴⁰ Like CEFC, GIB has also worked extensively in energy efficiency both in the residential and commercial space. GIB combines both the provision of finance and technical assistance to homeowners, building owners, multifamily housing, residential contractors, commercial contractors, towns and cities, and other capital providers.

GIB did attempt to support similar financing vehicles but on a much smaller scale.⁴¹ It is less clear that GIB built the same level of expertise to mobilise energy efficiency projects as it did other clean energy technologies.

5.2. GREEN BONDS

Alongside the MDBs, the larger NIBs have played a role in helping to develop the green bond⁴² market through a series of issues, the proceeds of which have been used to refinance green investments within their portfolios.

Since the first issuance in 2007, the green bond market has been growing. The total issuance volume up to the first quarter of 2018 amounted to USD 377 billion, of which USD 160 billion was issued in 2017 alone.⁴³ MDBs – specifically the EIB and World Bank – were the first to issue green bonds in 2007, to raise funding for climate-related projects, while the first government agency to issue green bonds was the Norwegian Kommunalbanken in 2010. Corporate issuers followed in late 2013. While the market was initially dominated by MDBs, government agencies, and municipalities, companies and banks are increasingly issuing green bonds, accounting for the highest share of issuances in 2016.⁴⁴

³⁹ The UK government's stated rationale for selling the GIB was to enable it to access additional capital and invest in more green infrastructure projects. It is therefore worth noting that the Australian government may not have similar objectives, as CEFC appears to have surplus capital which is available to invest and expand its portfolio.

⁴⁰ Green Bank Network. Australia CEFC's approach to investing in small-scale energy efficiency & clean energy. (March 2017). [Online]. <<https://greenbanknetwork.org/portfolio/cefc-approach-to-investments-in-small-scale-energy-efficiency-clean-energy/>>.

⁴¹ Green Investment Group. New funding available to help small businesses become more energy efficient." (June 2014). [Online]. <<http://greeninvestmentgroup.com/news-and-insights/2014/new-funding-available-to-help-small-businesses-become-more-energy-efficient/>>.

⁴² "Green bonds are used to finance projects that provide environmental and/or climate benefits. Most green bonds are 'use of proceeds' or are 'asset-linked', meaning proceeds from these bonds are earmarked for green projects but are backed by the issuer's entire balance sheet." Extracted from the Climate Bonds Initiative – Explaining Green Bonds. [Online]. <https://www.climatebonds.net/market/explaining-green-bonds>.

⁴³ Climate Bonds Initiative. The Green Bond Market in Europe 2018. [Online]. <https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf>.

⁴⁴ Levy, Joaquim. OMFIF Global Public Investor Symposium - Supporting Development Finance—Green Bonds and Sustainable Infrastructure Investment. (July 2017). [Online]. <<https://www.omfif.org/media/2862089/170713-omfif-green-bonds-joaquim-levy.pdf>>.





Issues by sovereigns and sub-sovereign agencies account for 68 percent of the total value of outstanding bonds, with most labelled climate-aligned bonds being issued by supranationals, followed by the U.S. and China. In terms of issuers, the largest to date have been EIB (USD 22.6 billion), KfW (USD 12.8 billion), World Bank (USD 10.6 billion) and the Shanghai Pudong Development Bank (USD 7.6 billion). KfW is a major player, issuing seven bonds in 2017 alone.⁴⁵

In addition to KfW, several of the other case study NIBs have started issuing green bonds. Most of this has occurred rather recently, following the Paris Agreement, with many banks having issued a green bond for the first time in 2017 or 2018, as shown in Table 5-2 below.

Table 5-2: Summary of case study institutions' experience in green bonds

Institution	First Issue	Issue Details	Use of Proceeds	Allocation Details
BNDES	2017	USD 1 billion, 4.75 percent p.a.	New/already existing wind/solar projects	Eight wind power generation projects in Brazil
CDB	2017	USD 500 million, five-year tenor, 2.75 percent coupon rate EUR 1 billion, four-year tenor, 0.375 percent p.a.	Projects in renewable energy, clean transportation and water resources management sectors along the Belt & Road route	Four/five projects of first allocations went to Chinese wind projects ⁴⁶
CIB	n/a	n/a	n/a	n/a
DBJ	2014	2014: EUR 250 million, three-year tenor, 0.25 percent coupon Issued Sustainability bonds each year since 2015 2018: EUR 700 million, seven-year maturity, 0.875 percent coupon	Existing or future projects of the sustainability framework ⁴⁷	In 2017, 40 percent of DBJ Sustainability Bond financing went to energy efficient buildings, 40 percent to companies that were considered environmentally-friendly and 20 percent to renewable energy projects.
DBSA	n/a	n/a	n/a	n/a
KfW	2014	2014: two issuances, EUR 2.6 billion total volume 2015: five issuances, EUR 3.6 billion total volume 2016: four issuances, EUR 2.8 billion total volume 2017: seven issuances, EUR 3.7 billion total volume 2018: Five issuances EUR 1.6 billion in volume Latest bonds have a maturity of five to ten years	KfW's 'Renewable Energies – Standard' Program, which supports the construction, extension or purchase of plants using renewable energy for producing (combined) electricity	In 2016, 86 percent of disbursements were used for wind projects. 79 percent of the project loans were used for German projects.

⁴⁵ Green Bonds Made by KfW – Impact Report 2015 – 2016. (July 2018). [Online]. <<https://www.KfW.de/PDF/Investor-Relations/Pdf-Dokumente-Investor-Relations/KfW-Green-Bond-Impact-Report-2015-16.pdf>>

⁴⁶ Only 6 percent of the proceeds have been allocated yet.

⁴⁷ Which includes renewable energy and clean transportation projects.



Institution	First Issue	Issue Details	Use of Proceeds	Allocation Details
NIIF	n/a	n/a	n/a	n/a
PT SMI	2018	USD 59 million, Two tranches with three year and five-year maturity respectively	To finance sectors such as renewable energy, energy efficiency, clean transportation, sustainable water and waste management	Not yet allocated.

Source: CEPA analysis and NIB websites.





6. CHALLENGES, LESSONS LEARNED AND GOOD PRACTICE

The preceding sections have mapped out the evolution of the traditional NIB model. This evolution, along with the design of new interventions, has enabled the model to move beyond providing relatively inexpensive long-term debt to public borrowers, to supporting PPPs and the green economy by mobilising private capital at both the project and institutional (wholesale) levels.

This section discusses the key challenges that institutions have faced to date, and learnings on how these challenges can be overcome. Some lessons, such as the need for strong independent governance, span all NIBs to varying degrees, while other learnings apply to a sub-group of NIBs, such as how traditional NIBs can adapt current operations to increase support for PPPs and mobilising private finance.

6.1. GOVERNANCE AND MANAGEMENT OF NIBS

Aspects of good governance are linked to avoiding negative behaviour, such as institutional capture by different interest groups, cronyism and corruption, while also promoting positive behaviour, such as optimising the role of NIBs; ensuring that their specific missions remain relevant; and ensuring taxpayers receive value for money.

6.1.1. Operating within an agreed strategy and mandate

As with any public institution, it is important that NIBs have clear remits, whether these are time-limited or enduring. Strategies and mandates should be clearly articulated and outlined in order to ensure relevance, which can be achieved through NIB mission statements, strategy documents, investment policies and operating procedures. Tighter mandates are more likely to be successful than generalised ones, given that the latter can result in activities becoming overstretched and institutions being less able to address the most pressing market failures.

Strategies and mandates should also be kept under review and can, of course, be changed, but when they are, this should be after appropriate review and evaluation. Importantly, NIBs should always be in a position where they can clearly articulate their public sector mission.

6.1.2. Independent operational management

As public institutions, there will always be a temptation for governments to try to unduly influence their operations, especially in regard to the selection of supported projects and the NIB's credit decisions. At worst, this can result in poor credit allocation decisions and, at the extreme, cronyism and corruption, leading to a range of problems for the institution concerned.

Hence, whilst government should have an active role in setting the NIB's objectives and mission, it should not be involved in day-to-day operational activities. This should be left to investment professionals overseen by an independent, objective board, even where some or all representatives are government appointed (which is the case with many NIBs). Such arrangements will allow NIBs to operate as intended within their remit, while also drawing on unconflicted professionals who are able to effectively deliver operations.

6.1.3. Appropriate management of subsidies

Although subsidies are governed by strict rules in some contexts, such as the European Union's State Aid rules, there are no such constraints in many countries. This can be potentially harmful in the context of PPPs,



where the benefits of the subsidy can be captured by private sector interests rather than flowing to the intended beneficiaries, such as poorer customers.

Accordingly, subsidies should be used selectively and on a targeted basis, and they should be designed to minimise adverse impacts. One approach is to have bidders on projects compete for the level of subsidy, as is the case in reverse auctions, where the bidder with the lowest subsidy requirement wins the competition to build and operate the asset (as was seen in South Africa with the Renewable Energy Independent Power Producer Procurement (REIPPP) program). Another approach is to use redeemable grant instruments with the potential for claw-back when profitability turns out to be greater than initially anticipated. A third approach is that taken by NAIF, under which subsidies can only be employed when a certain level of benefit is associated with their use.

6.1.4. Effective monitoring and reporting

It is one thing to have an ambition and strategy, it is another thing to deliver on it. It is, therefore, important that the activities of NIBs are actively monitored and regularly reviewed. This can be done, for example, by using established evaluation frameworks, such as the OECD Development Assistance Committee criteria, which assess Relevancy, Efficiency, Effectiveness, Impact and Sustainability, irrespective of whether the institution is in a developed or emerging market.

Such an approach can help ensure that the institution continues to deliver its mission. The results of these reviews should be published regularly to improve transparency. Having said this, the need for transparency and accountability should be appropriately balanced with the need to maintain commercial confidentiality.

6.2. THE IMPORTANCE OF GOOD PROJECT PREPARATION

Many NIBs have realised that it is often the lack of well-prepared projects that has created the greatest impediment to private financing of infrastructure. Often the skills and financial resources required for this do not exist within either line ministries or even specially established units. As discussed in Boxes 6-1 and 6-2, DBSA and BNDES have both sought to address this gap.

Box 6-1: DBSA's leading role in South Africa's Renewable Energy Independent Power Producer Procurement Program (REIPPP)^{48,49}

The REIPPP is a program to rebalance the country's energy mix that feeds into the national grid in order to reduce dependence on fossil fuel. DBSA has been intimately involved in the REIPPP from the outset. Launched in 2011, DBSA collaborated with the Department of Energy and National Treasury to set up the program and the IPP Office - responsible for designing and managing all aspects of the REIPPP, including the agreements between the government, Eskom, IPPs, and commercial parties and their empowerment partners. DBSA oversees the appointment of staff and the office operations, as well as the procurement of consultants, goods and services required of the IPP Office. DBSA provided the initial funding for the IPP Office as a loan recoverable at financial close.

Source: DBSA and the South African Wind Energy Association.

⁴⁸ DBSA in the News - DBSA's renewable energy legacy still to unfold. (October 2016). [Online]. <<https://www.dbsa.org/EN/DBSA-in-the-News/Documents/DBSAs%20Renewable%20Energy%20Legacy%20still%20to%20unfold.pdf>>.

⁴⁹ South African Wind Energy Association. Presentation on the IPP Procurement Program- Portfolio Committee on Energy (March 2018). [Online]. <https://sawea.org.za/wp-content/uploads/2018/04/Presentation-to-PCE-on-IPP_06-March-2018.pdf>



Box 6-2: BNDES' leading role in project preparation

BNDES has a unit focused on project structuring for privatisations, concessions and PPPs to assist at various stages of the process, from the planning to signing of contracts. The Investment Partnership Program allows BNDES to analyse the financing and structuring of projects in the program and provide lines of finance after the project is bid out. All public infrastructure projects implemented through partnership agreements signed between the government and the private sector are included in the program, as are projects in the National Privatization Program.

Source: BNDES 2017 Annual Report

Similarly, both PT SMI and PT IIF have the potential to be major catalysts in accelerating PPP preparation and implementation, although, as in many other emerging markets, they face challenges of limited capacity and expertise in what is a very public sector driven PPP market. In Canada, when the CIB was established, it was made developer/custodian of the national infrastructure project pipeline.

As financing institutions, NIBs have a good understanding of what is required in the preparation process to make projects bankable, making this a natural area for NIBs to support governments.

6.3. MOBILISING PRIVATE CAPITAL

6.3.1. Minimising market distortions

As discussed, a particular objective of supporting PPPs and green finance has been to crowd in private finance. However, where NIBs limit their financial products to traditional senior loans, without working at opportunities to involve third-party private capital, there is less potential to do this. Providing senior debt is the least risky position in a project financing and is therefore a natural entry point for private sector lenders. More catalytic interventions include providing subordinated debt, partial credit guarantees⁵⁰ or creating secondary financing opportunities for the private sector through exiting operational assets.

On the whole, however, there are few examples of these more innovative approaches – the provision of cheap, long-term senior debt still tends to dominate lending and investment portfolios.

Given the potential to distort and undermine markets, such as through crowding out the private sector, there are additional best practice considerations when it comes to thinking about NIBs which are set up to support PPPs. The objective of a NIB should be to add additional value, and minimise market distortions, whilst at the same time promoting the development of national credit and capital markets. It should not be about institutional self-perpetuation through specific interventions in particular sectors once these are no longer required. At the extreme, even the continued existence of the institution itself within the public sector, once it is no longer required, should be kept under review.

Box 6-3 below outlines ways in which NIBs can minimise market distortions.

⁵⁰ There may also be issues around creating contingent liabilities with respect to guarantees. Whereas a loan can be made to be profitable by charging a risk adjusted margin over funding costs, the profitability of guarantee business is more complex. To be profitable, it is necessary to leverage the capital of guarantee business, which means that outstanding exposures end up being greater than the capital supporting them. This creates a contingent liability. This may conflict with domestic as well as external requirements (such where the country is part of an International Monetary Fund program).



Box 6-3: Ways of minimising market distortions whilst being most additional

- **Seek to provide financial products aimed at catalysing private investment**, such as subordinated debt (which sits between senior debt and equity in a financial structure).
- **Rather than provide senior debt directly, use partial credit guarantees** to risk share with private lenders and investors, including the provision of back-end guarantees which cover the final year of a tenor and liquidity products (such as put options whereby the option holder can exit a performing asset if it has a sudden need for greater liquidity) to encourage private sector financing.
- **Where subsidies are being deployed, target subsidies where they are most required – so-called ‘smart subsidies’.** This is easier to do where the subsidy is explicit and therefore separable from the loan provided. A problem with forms of blended financing, such as interest rate subsidies, is that there is no incentive for the equity in a transaction to refinance out the public money (which typically happens once a project is operational and therefore less risky). However, when used in a disciplined manner, an element of subsidy in innovative products can increase catalytic impact.
- **Limit financial interventions to the phase of the project development cycle where it is most needed.** Where all finance is being provided on a market, rather than concessional, basis, this is typically during the project development and construction phases, with private capital (particularly institutional) being more widely available for operational assets. The potential for the NIB to exit at this point should ideally be considered, rather than holding the asset to term. A particularly thorny issue that can militate against this, however, is the trade-off between developing markets through absorbing risk and the need for self-sustainability, with NIBs wishing to maintain the highest quality assets (that is, those which can be easily exited) on their balance sheets.
- Finally, while NIBs which are focused on financing public infrastructure projects are likely to be enduring, different considerations come into play when considering private sector interventions, especially those focused on what may be temporary reasons for a public sector intervention. In such circumstances, institutions should have ‘mission accomplished’ provisions established in their enabling legislation and/or charters, so that they are wound up in an orderly manner once their objectives have been fully achieved. These provisions can also include the possibility of a divestment of the institution in question (as occurred with the GIB).

Source: CEPA analysis

As challenges change over time, maintaining strong engagement with the private sector is important to understanding concerns and assessing whether NIBs need to adapt their practices.

6.3.2. Leveraging NIB capital structures

A clear advantage that many NIBs have over international DFIs in emerging markets is the ability to lend long-term and efficiently in local currency. This niche is clearly something that should be built on by NIBs in emerging markets, tapping into local capital markets. Most transactions will require at least some long-term local debt, with many NIBs being in a unique position to provide this.

An interesting question with regards to how NIBs mobilise third-party capital is how the sources of a NIB's capital can be used to ensure the NIB is being truly catalytic. Against this, NAIF and CDB are new institutions that, at present, are fully funded by fiscal transfers. This creates something of an interesting conundrum. On the one hand, the absence of the need to maintain a credit rating should, in theory, make them freer to deliver greater innovation in their financing solutions, particularly where they can assume more risk without having to fully price it (a lack of risk-taking sometimes being a criticism of some DFIs who can be very conservative in order to preserve their high credit ratings). On the other hand, the absence of capital market discipline increases the risk of poor lending decisions, a risk that needs to be carefully managed.





For institutions with established credit ratings, often due to the implicit or explicit guarantees provided by their sovereign governments, an interesting area for consideration is the extent to which the NIB's capital raising should always be guaranteed and the extent to which this impacts which projects do and do not receive finance. Box 6-4 below discusses this in more detail.

Box 6-4: Should NIB capital raising be guaranteed?

It is clear that NIBs can play a significant role in raising long-term local currency financing for infrastructure projects. This is an important niche which NIBs are arguably uniquely positioned to fill.

What is less clear is whether or not the financing raised is transferring the risk, that governments have when they raise the finance themselves through raising public debt, to the providers of that private capital, either wholly or even in part. It is important to remember that part of the role of PPPs is to transfer financing obligations and risks away from governments to private capital providers, reducing government contingent liabilities.

Different NIBs raise a mix of explicitly guaranteed and unguaranteed debt, but through the same vehicle (unlike say, the IBRD and International Finance Corporation (IFC), in which the former raises debt which is protected by callable capital provided by country members for on-lending to sovereigns, but where capital raised by the latter is at risk and is on-lent to projects that typically do not have support from the host sovereign). Moreover, even where there is no explicit guarantee, the ratings agencies tend to assume an implicit guarantee.

This raises questions of whether the current model is optimal, or whether good practice would be to segregate guaranteed and unguaranteed capital. The advantage of the current approach is that the cost of finance is benefiting from an implicit guarantee, but this raises the question of whether this then promotes overly conservative behaviour, in order to minimise risks to credit ratings and helping to ensure that the implicit guarantee is never tested. Or should there be a more formal split between capital which ultimately takes underlying project risk and sovereign guaranteed capital which might provide for a better matching of risk profiles?

Source: CEPA analysis.

Having a formal split between guaranteed and unguaranteed capital could allow third-party capital providers to invest in resources that appropriately reflect their risk appetite, while also allowing NIBs greater freedom to undertake potentially catalytic activities. This will, in turn, involve a consideration of the unique circumstances of the country context, as this separation may not result in raising the capital required for unguaranteed segments, since those lending to these windows will be relying on the credit quality of the NIB as opposed to the guarantees provided by the host government.

6.4. RESTRUCTURING AND REFOCUSING NIBS

Many of the challenges and 'lessons learned' discussed above are linked to institutions being relatively large and sometimes unwieldy, with mandates to support wide-ranging national economic and social policies. Many of the NIBs considered were initially created to undertake public financing of infrastructure, and then moved into private financing of PPPs and green economy projects. This is an entirely different business which poses additional technical and governance challenges to which the NIBs in question have had to adapt. These include the need to develop more commercial financing skills, the need to avoid crowding out private capital with cheaper public finance, and the greater governance burden involved when the private sector is a beneficiary, particularly when subsidies are involved.

In addition, not only have the NIBs been tasked with mobilising third-party capital at the project level but they have also been asked to be more innovative in their own capital market operations and to be less reliant on direct fiscal transfers and indirect guarantees of their funding requirements, as has occurred with BNDES.

Lending and investment decisions are much more complex when NIBs are lending to PPPs which face a whole range of different risks, such as construction, technology performance, market, financial, regulatory etc., than when they are essentially lending directly to the public sector, in which the latter essentially assumes such



risks. This requires an entirely different set of skills, which may be more difficult to attract to work for the public sector than traditional public servants. The fact that NIBs are separate institutions from the mainstream public sector can help with this.

There is also the risk that a NIB ends up doing too much, as it is pressured to meet a whole range of different policy objectives. As the repository of financial resources and human resources skills within the public sector is scarce, it is understandable that governments turn to their respective NIBs to solve a range of different problems. Where this is not done in a structured and disciplined manner it can lead to risks of mission creep and overload, where the NIB is pushed and/or pulled into doing things that are beyond its capabilities. Such broad mandates might work within a pure public sector context but not where private finance is involved.

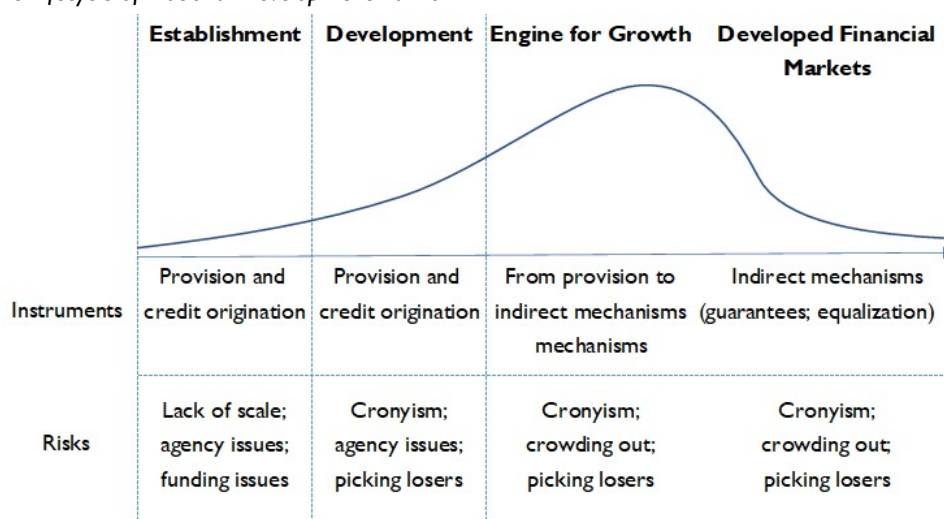
An aspect of playing a more commercial role is therefore focus and prioritisation. The way these problems have been dealt with have involved a mix of re-scoping and refocusing activities, as observed in the cases of BNDES and DBSA described in Box 6-5 and Box 6-6 below.

Box 6-5: Restructuring at BNDES

Research suggests that there can be a pattern in how many of the challenges outlined above can manifest, requiring a rethink and refocus on core priorities.

The experience of BNDES is the same as for many national development banks.

Figure 6-1: The Lifecycle of National Development Banks



Source: Adapted from Torres, E. & Zeidan, R. (2016): *The life-cycle of national development banks: The experience of Brazil's BNDES*, *The Quarterly Review of Economics and Finance*, 63, pp. 97-104.

BNDES provides interesting insights into how a large institution has reorganised itself to focus on new and emerging priorities.

The case study of BNDES highlights the ongoing transformation from a dominant, direct finance, business model, with some two-thirds of all BNDES funds being provided by the federal government and then allocated with taxpayer subsidies, in a wide range of national economic development programs and sectors, including infrastructure, to a model that is based on prioritisation, additionality and crowding-in private sector investment, both domestic and foreign. The latter model emerged after 2015, following a period of increasing fiscal constraints. The hitherto widespread use of low-cost, long-term senior debt as an 'adjustment variable' to make PPP/concession infrastructure projects viable is no longer a policy option. In future, greater reliance will have to be placed on leveraging through co-financing and syndication, use of guarantees and capital markets instruments and other forms of de-risking, allowing greater participation of institutional investors. Prior to this change in policy, it is arguable that commercial banks and other institutional investors were effectively crowded out of infrastructure financing in Brazil.



The BNDES lessons in PPPs include the need for a high quality, operational pipeline of projects. This, in turn, requires in-house expertise and technical support. Funding of PPPs is also heavily influenced by market structures, particularly in capital markets, and the ability of governments to provide low-cost fiscal transfers. BNDES is now being required to repay treasury funds and diversify to non-public sources of finance, particularly through raising debt in capital markets over increasing tenors. Another area of recent improvement is an enhanced legal and regulatory environment, more internationally competitive procurement and greater transparency in bidding. The broad access to projects at the federal, state and sub-national level has also been advantageous and promoted inclusion. BNDES has successfully acted as the government's program manager or agent, with presidential and line ministry commitment, and this has been retained as an enabling platform in the new operational policies. BNDES has also moved to connect with emerging green finance through global facilities and multilateral banks and DFIs.

Source: CEPA analysis.

Similarly, DBSA has also gone through an exercise of refocusing its activities to improve its relevancy and effectiveness.

Box 6-6: Refocusing at DBSA

DBSA has a program of change similar to BNDES. DBSA's new corporate strategy emphasises leverage of domestic and international investors – both traditional and green – and the role of DBSA as a catalyst between the public and private sector, with greater emphasis on development impact, integrated infrastructure systems solutions and sustainability. Through a mix of convening power, partnerships, capital markets instruments and earlier stage project involvement, it aims to catalyse some USD 7.5 billion in infrastructure projects annually by 2020, of which it would directly finance some 25 percent or less. The share of PPPs in this is unknown, but major rail and other transport flagship projects have all suffered delays and political interference. Trust in a standard PPP operating model is not yet widespread in South Africa, particularly at the state and municipal level where DBSA has a network of established clients.

It is too early to judge the effectiveness of the new DBSA, whose recent problems reflect national economic and political difficulties, but it has a trusted third-party status in terms of sub-national clients, management of government funds and programs and working relationships with multilateral banks, DFIs and financial institutions in the private sector. It has also played an active role in providing debt finance to Black Economic Empowerment Groups and loans to Community Trusts; the latter allowed local equity stakes in the highly successful roll-out and management of the REIPPP program, which is credited with opening up the South African renewable energy market to private investment. It has shown an ability to scale-up projects into programs and replicate pilots into standard, bankable projects. It has made substantial progress in mobilising green finance and is looking to add more innovative products and instruments.

Looking forward, much will depend on high level political commitment to PPP models, improvement of the enabling environment, and the ability of DBSA to provide additionality, despite the financial sustainability constraints imposed on it by the Treasury.⁵¹ The lessons suggest it needs to gear up its early stage project preparation capacity building expertise and capacity, both internally and with its largely sub-national public clients. DBSA has experience of operating assets at the municipal level, in direct and social infrastructure, and the latter remain the primary sector focus of DBSA. In the new normal, DBSA has had to demonstrate its effectiveness as a project generator and catalyst in infrastructure, with limited financial assets but within a relatively well-developed capital market.

Source: CEPA analysis.

A key lesson learned is that if a NIB does not stay at the forefront of infrastructure financing developments, it runs the risk of reducing its relevancy, in that the solutions being provided become inappropriate to the problems being encountered. At the extreme, if NIBs do not take into account and adapt to potential for private finance, they can crowd out and stymie market development.

⁵¹ Including its relatively small USD 6.5 billion capitalisation.



6.5. ESTABLISHING NEW INSTITUTIONS

A particular focus of this Guidance Note is to support governments seeking to set up new NIBs. Therefore, some questions that require detailed thought prior to taking the decision to establish a new intervention are discussed in Box 6-7 below.

Box 6-7: Questions to answer when considering establishing a new NIB

First, what is the nature or the gap, failure, or barrier that is being addressed? Is it transient – for instance, related to a short-term interruption of financial markets - or is it likely to be prevailing? This will have implications for the nature of any intervention and whether it needs to be short-term or long-term in nature. It can often be tempting to see financing constraints as key barriers, when often the problem can be more related to funding (that is, an inability to pay for the infrastructure/limited affordability), policy, regulatory or other barriers. The classic issue is one of whether problems lie in the supply of finance or whether the problems lie with the projects themselves.

Second, what type of solution is likely to best address the problem(s) identified? Again, this may not always involve a financing solution. There can be issues around project design or structure that are causing the bankability issue, for instance inappropriate risk transfer (for example, lenders may not be willing to accept traffic risk on a toll road project; however, they may be willing to lend to alternative project structures, for instance in the case of availability-based structures).⁵² Even where it has been established that a financing solution is required, it is important to establish what type of finance is the problem; for instance, is it a debt or equity problem?

Third, is a new institution necessary in order to provide the solution? As the establishment of any new institution is likely to be both expensive, as well as time-consuming, to set up, it is important to justify any new intervention by establishing why existing institutions are either not capable of addressing the challenge(s) identified or can only do so sub-optimally. There may be other institutions that already exist, including those within the private sector that can be worked with rather than setting up something new. This is particularly relevant when addressing short-lived problems.

Source: CEPA analysis.

It is useful to consider the questions in Box 6-7 in the context of a number of new entities, which have all been established to support private financing:

- **Targeting underserved geographies and communities.** Both NAIF in Australia and CIB in Canada are recently established new NIBs. Unlike the traditional model, neither has sought to raise non-government capital at the NIB level; rather, they have been focused on making government-provided risk capital available to mainly greenfield or expansion PPPs, where it is believed that the private sector will have little interest, due, for instance, to geographical remoteness and the additional costs associated with this. Both have the ability to provide concessional finance where a need for it can be justified, for instance, in terms of addressing any additional costs faced by projects in these contexts. Ideally, the aim is to crowd in private sector debt finance, but NAIF has been able to provide 100 percent of a given project's debt requirement (relative to 49 percent for CIB) when this has helped expedite project implementation. There are, however, limitations on the use of subsidy to ensure it can only be used where absolutely justified.
- **Supporting unproven renewable technologies.** GIB in the UK and CEFC in Australia were established to focus on the additional challenges of renewable energy but have provided commercially-based financing. In particular, the fact that they have been taken out of projects through successful re-financings has demonstrated the viability of the projects that they have supported. GIB has recently been

⁵² In availability-based PPP structures, the private sector is responsible for building and maintaining an asset to an acceptable standard, it does not have to assume demand risk.





privatised/divested by the UK government, demonstrating that NIBs do not have to exist as public entities forever.

- **A shortage of risk capital for infrastructure.** NIIF in India has focused specifically on addressing the financing gap in equity capital, in an approach which has sought to use Government of India resources to crowd in third-party equity from the private sector, donors and sovereign wealth funds into a series of different vehicles.



ANNEX A: GLOSSARY

This selective glossary is provided as a guide to assist readers with some of the terms and concepts used throughout the report.

A.1. A/B LOAN STRUCTURE

An A/B loan structure refers to instances where NIBs, DFIs and other international financial institutions seek to mobilise private sector finance for transactions. The A portion of a loan refers to the commitment made by the institution through its own resources, while the B portion of the loan refers to proceeds provided by third parties. By lending through this structure, the NIB acts as the Lender of Record and also acts as the Lead Lender and Administrative Agent for the entire loan facility. In many instances, lead institutions benefit from some form of Preferred Credit Status in the countries they operate, meaning no withholding taxes apply to debt service payments, from which private sector providers of the B loan facility also benefit. This, in turn, allows the private sector lenders to offer finance at lower costs. It is important to note that, in the event of default, providers of the A loans are not obligated to repay the providers of B loans, rather a default on one aspect of the loan results in a default on the entire loan.

A.2. ADDITIONALITY

Additionality, in this context, refers to providing financial services only where the market cannot or does not do the same, or otherwise does not provide financing on an adequate scale or on reasonable terms.⁵³ There is also the concept of “development additionality”, which the IFC disaggregates into operational and institutional components. Operational additionality refers to financing programs that help to address skills gaps which may exist between the recipient of the financing and the private investors, whereas institutional additionality may occur as the financing may require improved standards of environmental, social and corporate governance (ESG), sustainability, regulation, and better public/private risk allocation.”⁵⁴

A.3. ASSET-LIABILITY MATCHING

Any financial institution needs to match its assets (investments and loans) with its liabilities. For instance, it is not possible to finance an infrastructure *equity* portfolio (with high risk and illiquidity) with *debt*, or a long-term loan with short-term finance, or local currency loans with foreign exchange, unless there is an external party capable of stepping in if, or, more likely, when, problems arise from these asset-liability mismatches.

A.4. AUTHORISED, SUBSCRIBED, PAID-IN, CALLABLE AND ISSUED SHARE CAPITAL

“Authorised” share capital is the maximum amount of share capital a company is allowed to raise. Though this does not limit the number of shares a company may issue, it does put a ceiling on the total amount of money that can be raised by the sale of those shares.⁵⁵ When a company issues shares for the first time,

⁵³ Canadian International Development Platform. Additionality in Development Finance. [Online]. <<https://cidpnsi.ca/additionality-in-development-finance/>>.

⁵⁴ Canadian International Development Platform. Additionality in Development Finance. [Online]. <<https://cidpnsi.ca/additionality-in-development-finance/>>.

⁵⁵ Investopedia. [Online]. <<https://www.investopedia.com/>>.





investors can submit an application expressing their desire to participate. “Subscribed” share capital refers to the monetary value of all the shares for which investors have expressed an interest.⁵⁶ Subscribed capital can either be “paid-in” as cash or else “callable” – both IBRD and the European Investment Bank (EIB) only have small proportions of their capital which is paid-in, the rest is callable from the IBRD and EIB member countries. “Issued” share capital refers to the value of shares a company actually issues. The amount of issued share capital is generally much lower than the authorised share capital, so a company has the opportunity to issue additional equity at a later point in time.⁵⁷

A.5. BRIDGE FINANCING

“Bridge Financing” is a short-term loan used ahead of an anticipated long-term financing option becoming available.

A.6. CAPITAL MARKETS

Capital markets are any market for the buying and selling of long-term debt or equity-backed securities. These can be either public or private:

- Public markets are traded markets. Capital market issues are generally arranged by investment banks, then often syndicated to a larger number of investors, and ultimately available to purchase on the secondary market in a bid/ask format.⁵⁸ Bond mutual funds, hedge funds, pension funds, and individuals can then purchase such securities via a broker according to the quoted price. In developed countries, these markets are wide and deep with many participants, creating liquidity and efficient pricing. Whilst many developing country equity markets are public markets, they are considerably less liquid.
- Private markets do not involve trading in the way that public markets do; there is no bourse as such. Private markets include primary placement markets in which financial instruments are issued to sophisticated investors; private markets are typically much smaller, less liquid and subject to less financial regulation than public markets. Nonetheless, from an infrastructure financing perspective, such private markets can be important sources of capital. For instance, the US-based “Rule 144A market” (which is based upon a provision in the US Securities Act) has been tapped for bond finance for many infrastructure issues in Latin America and Asia. Moreover, private equity funds, which are typically not publicly listed, can also be seen as private markets.

A.7. CENTRAL, FEDERAL OR COMMONWEALTH VERSUS STATE, PROVINCIAL, OR MUNICIPAL

“Central”, “federal”, or “commonwealth” refer to national governments, whereas the “state”, “provincial”, or “municipal” refer to sub-national governments. In many countries, all, or the majority of, funding invested in a NIB is from the national government, whereas the projects in which the NIB invests can have significant involvement from a sub-national government, as an investor, payee or guarantor.

⁵⁶ Investopedia. [Online]. <<https://www.investopedia.com/>>.

⁵⁷ Investopedia. [Online]. <<https://www.investopedia.com/>>.

⁵⁸ A bid ask format is the presentation of the bid and ask prices which make up a two-way price quotation that indicates the best price at which a security can be sold and bought at a given point in time.



A.8. CONCESSIONAL FINANCE

Concessional finance does not seek a return commensurate with the risk that it faces. When public financial institutions provide such finance, they are doing so at rates which are below what the private sector would typically charge.

In the case of concessional equity or 'first loss' capital, the required rate of return is below what a commercial investor would be seeking.

In the case of credit instruments, the part that is subsidised (that is, not fully priced for) can include the interest margin (which, principally, should reflect the risk faced) or a grace period, or sometimes an arrangement whereby the concessional debt product ranks junior to other participants in a debt structure, but without charging for the additional risk.

It is a rule of corporate finance that financial products – debt or equity – are priced according to the risk profile of what is being financed, not at the finance provider's cost of funds. In pricing debt, it is usual to start with the wholesale rate that the finance provider is being charged (the cost of funds which is affected by the credit rating of the financial institution in question). This, in turn, is driven by the credit rating of the entity raising the capital, with institutions that have either implicit or explicit government support raising capital more cheaply than, say, a financial intermediary, which is taking full risk on its loan/investment portfolio. In pricing up debt for on-lending, the provider needs to take: (i) its own cost of funds (determined by its rating); (ii) add its own administration/management costs; (iii) then add a risk premium reflecting the credit quality of the borrower; and (iv) its target return on capital.

In principle, it is possible to achieve a below-market loan pricing through adjusting any of the above. Often, if an institution is government-backed, it can simply pass on the benefits of its own lower cost of funds arising from its credit quality – note that very few private financial institutions have the same credit ratings as state-backed entities.

A further reduction in the rate charged to the borrower arises through the public finance institution not seeking to make a return on capital. As such, it prices solely to cover any expected losses on its portfolio (with a degree of contingency). Clearly, this is much easier for a public institution than a private one, whose investors will be seeking a return commensurate with the risks they are taking.

In addition to this, a more substantive level of subsidy is achieved by essentially buying down, that is, paying for, the administration or risk cost elements in the loan pricing. Blended finance combines grants (or grant-equivalent instruments) and non-grant financing from private and/or public sources to provide financing on terms that would make projects financially viable and/or financially sustainable.⁵⁹

As such, loans can have varying degrees of concessionality, depending upon the approach taken.

A.9. CREDIT MARKETS

Credit markets are markets for bank loans. In high-income countries, these are typically the main source of finance for greenfield infrastructure, in which commercial banks specialise in project finance, providing committed facilities for long-term bank loans, which can be drawn down when required, such as during the

⁵⁹ Shakira Mustapha, Annalisa Prizzon and Mikaela Gavas. Topic Guide: Blended Finance for Infrastructure and Low Carbon Development. (January 2014). [Online].
<https://assets.publishing.service.gov.uk/media/57a089b6e5274a31e0000218/EoD_Topic_Guide_Long_January14_Blending_Finance.pdf>.





construction process. Such facilities are more illiquid than debt raised in capital markets, although syndication may improve the degree of liquidity. Because only commitment fees are paid on undrawn amounts, they are particularly appropriate to greenfield projects, avoiding the need to pay interest on capital that is not required for several months or even years.

A.10. FUNDING VERSUS FINANCING

It is often common to use the terms “funding” and “financing” interchangeably when discussing infrastructure finance. However, strictly speaking, the former refers to how infrastructure services are paid for, typically by either user charges or government payments. Ultimately, long-term debt financing is a way of spreading out the funding of infrastructure capital expenditure over many years and, by doing so, making infrastructure tariffs more affordable. In many instances, extending the tenors of financing can lower tariffs more than reducing the interest rate, as it is normally the repayment of principal which accounts for a greater proportion of the tariff than the interest rate.

A.11. FISCAL HEADROOM⁶⁰

“Fiscal Headroom” refers to the scope governments have in their budgets to increase spending or reduce taxes. The size of the headroom may change due to unexpected windfalls, lower cost of debt, higher economic growth, etc. In the case of a sudden reduction in fiscal headroom, it is often infrastructure projects which may be affected first, as the government prioritises essential services.

A.12. FUNDED VERSUS CONTINGENT FINANCING

“Funded” finance is finance that is cash-based; that is, money is transferred as part of the financial transaction. Funded instruments include equity, debt and mezzanine products, such as subordinated debt. “Contingent” financing is financing which is only drawn on when required, such as a guarantee or an insurance product, as well as stand-by credit facilities; all are triggered by a specific event, such as a payment default. Contingent instruments involve the provision of underwriting capacity, as opposed to the provision of cash. They have the advantage that a given amount of cash can back a total of exposure that is greater than the amount of cash in question; this is called gearing.

A.13. MEZZANINE FINANCE

Traditional finance is either senior debt or equity; mezzanine is a hybrid between the two. It can take several forms, from subordinated debt to preference shares, both of which are paid back after senior debt and before equity. There may be a right to convert this debt into equity at a contracted price per share if the loan is not being paid back.

A.14. SECURITISATION VEHICLE

Securitisation is a process whereby various financial assets are combined into larger assets pools. These pools can then be divided and repackaged so that they can be sold off to investors based on their risk appetite.

⁶⁰ Another commonly used term is Fiscal Space. See for example: <https://www.imf.org/en/Publications/IMF-Staff-Position-Notes/Issues/2016/12/31/Fiscal-Space-23726>.



The securitisation vehicle is a special company set up which receives the pool of assets and is legally separate from the original holder of the assets (e.g. a bank). This is in order to provide certainty to the holders of the securities that they will have first priority on payments to the underlying loans.

A.15. TAKE-OUT FINANCE

This is a type of loan which replaces short-term financing (e.g. a construction loan) with a longer-term arrangement with different terms (e.g. lower interest rates), once a given milestone is achieved or passed (i.e. construction is complete).

A.16. TIER 2 CAPITAL

“Tier 2 Capital” is the secondary component of bank capital, in addition to Tier 1 capital, that makes up a bank's required reserves. Tier 2 capital is designated as supplementary capital, and is composed of items such as revaluation reserves, undisclosed reserves, hybrid instruments and subordinated term debt.





ANNEX B : BRAZIL - BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL (BNDES)

B.1. BACKGROUND AND ESTABLISHMENT

BNDES was founded in 1952 and is the Brazilian federal national economic development bank, initially with a focus on infrastructure, but gradually given a wider remit, covering industry and innovation, regional development, job generation, export finance and import substitution.⁶¹ It started as a government agency, but was converted to a state-owned company in 1971; this was to give it more flexibility to raise and disburse finance, and to limit political interference.⁶² Its present group structure emerged in 1982 with the merger of BNDES Participações (the equity investment arm) and FINAME⁶³ (the subsidiary that deals in export and trade finance).⁶⁴ A newer subsidiary, BNDES Ltd, deals with the internationalisation of Brazilian firms. Together, the BNDES group is responsible for long-term fund raising and loan activities in Brazil. As an institution, BNDES was, and remains, a key player in domestic privatisation programs which led to a rapidly expanded balance sheet, with substantial direct and indirect shareholdings and loans in the privatised enterprises. It added “social” to its title in 1982 and has become progressively more involved in such initiatives including culture, MSMEs, and the environment.⁶⁵ It was used extensively for public counter-cyclical investment from 2008 to 2014.

BNDES is one of the largest national development banks in the world and its evolution is closely tied to the political and economic history of Brazil. Its operations are, therefore, closely integrated with the Government of Brazil’s policy objectives, and its mission has been stretched to meet emerging priorities; these include long-term financing of productive and social infrastructure, counter-cyclical interventions, innovation, financial inclusion of MSMEs, renewable energy and other green initiatives, trade promotion and integration of Brazilian enterprises in the global supply chain.

In 2017, about 30 percent of loans went to infrastructure sectors, 21 percent to industry, 21 percent to trade and services, and 20 percent to agri-business. As a wholesale bank, it operates directly and through a wide range of intermediaries and platforms.⁶⁶ In terms of loan distribution value by size of client, about half is for large enterprises but, in terms of number of transactions, the MSME segment dominates. The Central Bank of Brazil has estimated that BNDES provided approximately 70 percent of long-term domestic credit (over a three year tenor) during 2013 – 2015.

Its dominant source of funds has been the National Treasury – which expanded rapidly from 2008 to 2014 – and constitutional payroll taxes and special funds; this has been distributed typically via senior loans at the Taxa da Juros de Longo (TJLP) – a long-term interest rate set by the National Monetary Council - which were provided at a substantial discount to the private market rate, or Sistema Especial de Liquidação e Custódia (SELIC).⁶⁷ Some commentators have argued that the reliance on public funding through fiscal or constitutional sources has led to extensive subsidisation, capital misallocation, slower capital market

⁶¹ Law 1628 of June 1952.

⁶² Law 5662 of June 1971.

⁶³ Financiamento de Máquinas Equipamentos.

⁶⁴ See Decree No 59170 of September 1966; BNDES Participações SA can provide equity and quasi-equity.

⁶⁵ When its remit was expanded to foster sustainable and competitive economic development in Brazil, generating employment, while removing social and regional inequalities.

⁶⁶ In 2017, the share of direct to indirect was 40 to 60.

⁶⁷ Disbursements have since declined sharply due to fiscal retrenchment and lower demand due to recession.



development and difficulties in public sector financial management. It has also been argued that insufficient attention was paid to the issue of additionality, and that BNDES loan products had resulted in distortions and sub-optimal capital market development. In early 2017, BNDES issued a new set of Operating Policies to respond to these concerns and the need for greater rigour in determining which specific market gaps are to be addressed by the bank in the future.⁶⁸

B.2. MANDATE

The legal mandate of BNDES is set out in legislation, which states that “BNDES is the main instrument to implement and carry out the Federal Government’s investment policy, and its foremost purpose is to support programs, projects, construction and services related to the country’s economic and social development.” The legislation also states that BNDES, directly or through subsidiaries, may carry out banking activities and financial operations of any kind, and in particular:

- finance economic development programs, with the resources of the Social Integration Program; promote the application of resources linked to the Social Integration Program (Programa de Integração Social or PIS), Public Server Patrimony Formation Program (Programa de Formação do Patrimônio do Servidor Público or PASEP) Participation Fund, the Merchant Marine Fund and other special funds established by the government; act as an agent of the Federal Government, the states, and municipalities, as well as of governmental agencies, state-owned companies, mixed capital entities, state-owned foundations and private organisations;^{69, 70}
- contract operations in Brazil or abroad, with foreign or international entities, finance the acquisition of assets and investments made by nationally owned companies abroad; finance and promote the exports of products and services;
- make non-reimbursable investments in educational and technological research programs;
- make non-reimbursable social investments, in the areas of employment and income generation, urban services, health, education and sports, justice, housing, environment, water resources and rural development, as well as projects of a cultural nature;
- contract technical studies and generally provide technical and financial support for projects that promote Brazil's economic and social development; and
- engage in capital markets operations, both domestic and foreign, to implement the above mandate.

At present, BNDES can invest or operate in any sector other than financial/banking services, defence, motels, adult leisure and gambling. The last three years have seen an attempt to create a new strategic framework around fewer themes – mainly MSMEs and infrastructure – and a more targeted focus on current market gaps. These include a separation of interventions that are designed to improve access to capital and those where externalities justify the use of subsidies.

⁶⁸ See World Bank, Report Number 117304, Finance and Markets Global Practice, June 2017, “Towards a More Effective BNDES” by Claudio Frischtak, Ceyla Pazarbasioglu, Steen Byskov, Adriana Hernandez Perez and Igor Andres Carneiro.

⁶⁹ The PIS and PASEP are social contributions payable by companies to finance the funds for insurance for unemployment, child benefits and allowances for low-paid workers.

⁷⁰ For example, the Fundo Amazônia, a grant fund to contain deforestation and encourage sustainable development in the Amazon.





The reliance on public funding, rather than bond or other capital market mechanisms that could lead to the widening and deepening of those markets, has also been questioned, as has the reliance on senior debt and the limited use of guarantees, warrants, securitisation or syndication.⁷¹

The vision statement on the BNDES website still relates to the wider public sector model:

“To perform its duties as the development bank of Brazil, an institution of excellence that is innovative and proactive in light of the challenges in our society. In keeping with the Bank’s Mission and Vision, three integrated issues were selected as the new challenges to be tackled: innovation, socio-environmental development, as well as local and regional development, prioritizing the less developed regions in Brazil.”

B.3. INSTITUTIONAL STRUCTURE

BNDES is a wholly owned federal entity, with the Ministry of Development, Industry and Foreign Trade as its sponsor, and operates as a company under private law. The most recent bylaws of BNDES are those passed by the General Assembly of 20 February 2017. Its authorised share value is BRL 100 billion (USD 27 billion). It presently has some 2,710 employees, mainly in Brazil, but it also now has representative offices in Montevideo, Johannesburg and London; its head offices are in Rio de Janeiro. There are no specific plans to change or diversify ownership, but recent moves to improve corporate governance include greater future participation of independent financial sector appointees and this may accelerate a partial divestment.

B.4. GOVERNANCE STRUCTURE

The Supervisory Board of Directors, as per bylaws published on the BNDES website, consists of eleven members, all appointed for two years but able to continue for a maximum of three terms. The most senior governing body of BNDES is the Advisory or Supervisory Board, which is responsible for approving the bank’s policies and programs and signing off financial accounts. The Advisory Board comprises:

- five members nominated by the Ministry of Development, Industry and Foreign Trade;
- one member nominated by Minister of Planning, Budgeting and Management;
- one member nominated by the Minister of Labour and Employment;
- one member nominated by the Minister of Finance;
- one member nominated by the Minister of Foreign Affairs;
- a representative of the BNDES staff chosen among the active employees by direct vote; and
- the President of BNDES, who performs the duties of Vice-President of the Advisory Board.

They are assisted by Fiscal and Audit Committees and oversee the Executive Board, which comprises the President, the Vice President and seven Managing Directors.⁷² Again, members are all appointed by the President of Brazil and subject to dismissal by presidential order.

⁷¹ In May 2018, BNDES issued its first two-year bonds for cash flow management; the amount was BRL 1.7 billion (USD 450 million). It was oversubscribed.

⁷² As of June 2018, only six positions were active.



BNDES' governance is, therefore, dominated by political appointees, with 90 percent being nominated by government ministers and all requiring formal approval by the President. This structure has been criticised for allowing political interference in policies and operations. In accordance with the recommendations contained in a recent World Bank report⁷³, BNDES' Advisory Board is restricted by statute to only providing guidance and sign-off of financial accounts, with day-to-day management being the responsibility of the Executive Board.

BNDES is supervised and regulated by the Central Bank of Brazil. BNDES is expected to pay dividends of between 25 percent and 60 percent of adjusted net profits to the National Treasury each year. It also pays income taxes, and the cost of any contingent liabilities that arise for the Government of Brazil from BNDES operations.

With its current operations, there is some overlap with other public banks, both national and regional, as well as related institutions and programs.

There is no published historical information given on project origination or how pipelines were developed, either directly or indirectly, but the World Bank has recently reported that BNDES largely provided subsidised credit without meaningful targeting across a range of sectors, programmes and themes.⁷⁴ It did not screen eligibility to the subsidised long-term TLJP interest rate on economic or social grounds and did not address the additionality of BNDES financing via any counterfactual approach based on identified externalities. In short, it historically acted more as a publicly-funded wholesale bank than as a catalyst.

B.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

As of mid-2018, the capital structure of BNDES was as follows: National Treasury - 44 percent; institutional funding - 34 percent; foreign funding - five percent; net equity - nine percent; and other liabilities - eight percent. The institutional segment is mainly from the Workers Assistance Fund, which is linked to the federal Constitution and not the budget. The Workers Assistance Fund is collected via corporate taxes and at least 40 percent is transferred to BNDES as Tier 2 capital with no amortisation required.⁷⁵ The residual 60 percent has to be spent on social programs, but any balance can be lent to BNDES or other financial intermediaries.

The National Treasury provides Tier 1 equity and credit with a tenor up to 2060; no Treasury transfers have been made since 2015 and BNDES has returned some BRL 300 billion to the Treasury from 2016 to 2018. There is a legal channel for BNDES to write off infrastructure bad debts under Law 12,404/11. Capitalisation is strong, with a Bank of International Settlements Total Capital Ratio of 29 percent, split between: Tier 1 capital at 19.3 percent and Tier 2 capital at 9.7 percent. BNDES has not traditionally issued bonds in domestic capital markets and it has not established a benchmark yield curve across different capital maturity dates.

In terms of consolidated assets at mid-2018, loans made up 69.7 percent; equity - 8.9 percent; securities - 10.7 percent and other assets - 10.7 percent. Financial leverage – in terms of total assets/average shareholder equity was 14.6. BNDES ratings are as for sovereign debt: Moody's give Ba2 and stable for long-term local and foreign currency issues and S&P's rate 1 BB - and stable. Fitch is BB – for foreign currency.

⁷³ See Footnote 69, above.

⁷⁴ See Footnote 69, above.

⁷⁵ See Annex A Glossary for a definition of Tier 2 capital.





B.6. FINANCING ACTIVITIES

As of June 2018, BNDES' total assets are USD 216.5 billion with equity of USD 18.5 billion and net income of USD 1.2 billion, based on a solid capitalisation. The average rate of return on assets is 1.15 percent and the rate of return on equity 18.3 percent. Some 93 percent of liabilities are debt, principally federal securities. 86 percent of the net loan portfolio is in local currency and the rest foreign.

Based on annual and quarterly reports, the aggregate loan balance portfolio at mid-2018 was:

- electricity and gas - 25 percent;
- agri-business - 11 percent;
- transport - six percent;
- public administration - seven percent;
- trading - three percent;
- construction - three percent;
- transport equipment - five percent;
- food products - two percent;
- pulp and paper - two percent; and
- other - 23 percent.

Senior loans are the primary product, typically with 10 to 25-year tenors. While detailed information on the exact terms is not in the public domain, they have typically been based on the benchmark long-term TJLP rate. These are often floating but can be fixed and, in recent years, have ranged from five percent to 7.5 percent and are now around 5.5 percent. These loans all require substantial collateral assets.

BNDES, despite having significant expert and professional resources in the head office and subsidiaries, has never provided technical assistance nor consultancy services as a business service line. This has limited its ability to get involved in early stage project preparation or later structuring and operation. Due to the subsidy in the TJLP interest rate and the positioning of the bank in the financial system, infrastructure projects were channelled to BNDES, either individually or through programs. For MSME or other smaller-scale credit operations, the use of intermediaries limited BNDES' direct involvement in project preparation and structuring; it also spread risk and lowered operational cost. Nevertheless, BNDES has invested in its high-level public policy design and advisory capacity, seeking to become a federal 'think tank' in regional development, infrastructure, industry and trade. It has been very active in the design and implementation of infrastructure concession and PPPs⁷⁶; this has included procurement, guidelines and advice to national and local government.

The BNDES equity portfolio was valued at USD 22.2 billion in mid-2018; this was mainly invested in Petrobras (41.5 percent), Vale (23.2 percent) and JBS (6.7 percent). Overall, through BNDES Participacoes, there are direct investments in 140 firms and 40 funds. In terms of total net income, loans account for about four times the income from equity realised by divestment or financial intermediation.

⁷⁶ BNDES and IFC are currently jointly reviewing how PPPs can be best structured and transacted in the light of the former's change in strategy.



International bond issues in recent years include: 2017 USD 1 billion at a coupon of 4.75 percent, maturity to 2024; 2014 USD 1 billion at four percent to 2019; 2014 EUR 650 million at 3.62 percent to 2019; and 2013 USD 1.25 billion at 3.375 percent to 2016 and USD 1.25 billion at 5.75 percent to 2023.

BNDES also has cooperation and partnership arrangements with multilateral banks and DFIs such as the Agence Française de Développement (AFD) and KfW. In June 2018, BNDES and the Inter-American Development Bank were joint sponsors of a USD 1.5 billion infrastructure credit fund for Brazil; they contributed 30 percent and 10 percent respectively, and the rest was allocated to institutional investors. The investment objectives cover both social and productive infrastructure. BNDES has also partnered extensively with organisations such as the World Bank Group, the Japan Bank for International Cooperation (JBIC), the EIB and the Development Bank of Latin America.

As noted earlier, electricity (generation and transmission) and transport (roads, rail and ports) have been priority sectors; in renewable energy, the bank has been the major senior lender in a range of hydroelectric, wind and solar projects. Recent examples of transactions supported by BNDES include:

- **The Pirapolar Solar Farm Complex.** This was BNDES' first major solar project with a first phase of 150MW, scalable in two additional phases to 400MW, with BNDES providing senior debt of BRL 529 million (USD 140 million, 18-year maturity) in an overall investment total of BRL 940 million (USD 250 million). The owners are Canadian Solar Inc (20 percent) and EDF Energies Nouvelles (80 percent). The transaction was finalised in 2017 and operation is scheduled for 2018 based on a 20-year power purchase agreement (PPA).
- **The Serra De Babilonia Wind Complex.** This USD 750 million, 223MW project was supported by USD 266 million in senior debt from BNDES, with additional debt from commercial banks.
- **The Santo Antonia Hydroelectric Dam.** A 5.5 billion, 3.5GW generation project which was financed in 2009 using a USD 1.27 billion BNDES A loan and a USD 1.25 billion B loan with participation by eight other banks. This was part of a controversial program of major dams in the Amazon Basin with high profile social displacement and environmental consequences; the project consortium included the participation of Eletrobras as the power generator. BNDES owns a large share in Eletrobras – which is scheduled for restructuring and privatisation – and the dam investments were later linked with corruption. Official government policy, as set out in the annually updated ten-year national energy expansion plans, is now to avoid such megaprojects and focus instead on wind, solar, small hydro and decentralised power generation projects.⁷⁷
- **The Autopista Dom Pedro I Toll Road.** BNDES provided senior debt of USD 520 million and a further USD 620 million financed through project bond issues.

B.7. GREEN FINANCING

BNDES issued its first Green Bond in May 2017 for USD 1 billion with a rate of 4.8 percent, a premium of 269 basis points on US Treasury securities, and 60 basis points over Brazilian federal securities. The proceeds of the Green Bond have been fully allocated to eight wind power generation projects with a total installed capacity of 1,323MW. BNDES also announced in 2017 a USD 300 million loan from the New Development

⁷⁷ For example, see Plano Expansão de Energia 2030. Following extensive droughts in 2015, solar, wind and biomass have been promoted via auctions and a mix of incentives; the aim being to reduce hydro from 65 percent of installed generating capacity to around 50 percent by 2030.





Bank for investment in five renewable energy projects, which included provision for on-lending in debentures. About 60 percent of recent BNDES energy investments have been in alternative technologies and energy is the fastest growing infrastructure segment.

B.8. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The 2017 Annual Report only provides a summary description of the project preparation framework and methodology for projects directly financed with values exceeding BRL 20 million (USD 5 million). It refers to a “Project Eligibility, Credit and Capital Markets Committee” that appraises the economic, financial, social and environmental aspects of projects and eventually make recommendations through executive management to the Advisory Board. Within the teams, there was access to different types of sectors or technical expertise, but with some 90 percent of staff based in Rio de Janeiro. There are no numbers available on the size of project preparation in staff or budgets. Pipeline generation was largely outside BNDES, through sector plans or privatisations or unsolicited private sector or mixed consortia projects. Since BNDES provided some 70 percent of all long-term finance in infrastructure at subsidised rates, all earmarked projects graduated to it. In terms of regional development and sector policies, BNDES it was also a major institutional source of advice and influence.

BNDES has provided technical assistance and knowledge/capacity support to a wide range of its public sector clients, particularly local and state governments and even to project developers and consortia – but this was not proactively done, nor was it a core business service offer.

B.9. PERFORMANCE MONITORING

The BNDES website provides access to quarterly financial and management reports, as well as annual statements and accounts.

BNDES has a remarkably low historic default rate that has only marginally increased during the difficult last few years. The ratio of Non-Performing Loans to Total Loans for 30 and 90 days was 2.36 percent and 1.45 percent respectively. These were below the Brazilian financial sector average. There is continuous monitoring of the portfolio and use of a standard national risk classification system; here AA is the least risk and H the worse. In June 2018, BNDES classified 96 percent of its portfolio as being in AA to C and only 0.4 percent in H. Again, this compares well with the Brazilian financial sector average scores.

There is no reporting by projects or programs. Instead, performance monitoring is now aggregated into three business lines: fixed income (project financing by loans and debentures); variable income (capital markets and equity) and treasury/asset liability management. This reflects the new more flexible and market price led BNDES model that emerged in 2017/18.

There appear to be comprehensive lists of risk management and internal/external controls but it is difficult to judge how far these feed back into operations or products as, historically, the business model involved two channels: direct long-term low cost senior debt, and indirect (and smaller) MSME client transactions. There is clearly a challenge to make monitoring and evaluations systems fit for purpose in the more agile, flexible, crowding-in model.

Until 2017, BNDES had no economic or social monitoring and evaluation capacity. Accordingly, it was unaware of the effectiveness of its loan interest subsidisation policy or overall long-term impact at the firm, regional or national level. In the Operating Policy revision, a new Monitoring and Evaluation Department was



created. The attempt to report developmental, social or environmental impacts is still under development, with job creation evaluations being the most robust and clearly formulated.

B.10. KEY LESSONS LEARNED

BNDES has responded to new challenges by adding lending platforms and second tier channels to cover diverse clients and industry/thematic segments while keeping the same Treasury/public funded, single subsidised product. It has become very dominant in the market and faces risks of capture by political interests or those who can gain rents on its subsidised funding. This lifecycle is not uncommon in national development banks and the remedy lies in making it more agile and focused on specific market gaps that a range of financial service products can address through appropriate pricing of different instruments to crowd-in other financing sources. Examples of such new products include credit enhancement, syndication, debentures, corporate bonds and loan securitisation.

BNDES is now starting a process to revise its medium- and long-term strategy to 2030, and in 2018, it retired the TJLP mechanism with the gradual introduction of a new benchmark based on a consumer price index and a spread based on five-year yields from government bonds.⁷⁸ It wants to move away from its sole or anchor lending role in earmarked projects and increase co-financing, syndication and use of capital market instruments. This will eventually transform the project finance market in Brazil but the process is only just starting.⁷⁹

In September 2016, the new Law no 13,334 was passed, bringing into being the Programa Parcerias de Investimentos; this aimed at enabling the infrastructure financing transition process by creation of a prioritised pipeline of major projects, mainly concessions and PPPs.⁸⁰ Programa Parcerias de Investimentos is based on complementary financing from public and private sectors with an enhanced capital market development role for BNDES (corporate bonds, liquidity in secondary markets, structuring of credit funds, new packaging of insurances and enhanced credit enhancement products). BNDES is experimenting with other DFIs and private sector institutions on how best to move to this new mixed funding model; this includes allowing other lenders access to collateral and local currency guarantees.

⁷⁸ Called Taxa de Long Prazo (TLP).

⁷⁹ TMF Group. The new role of BNDES in financing infrastructure in Brazil. (2018). [Online]. <<https://www.tmf-group.com/en/news-insights/articles/2018/april/role-of-bndes-in-brazil/>>.

⁸⁰ Initially, 145 proposed projects were identified.





ANNEX C: CANADA – CANADA INFRASTRUCTURE BANK (CIB)

C.1. BACKGROUND AND ESTABLISHMENT

The Canadian Government announced that it would set up a national infrastructure bank – the Canada Infrastructure Bank – in the 2016 *Fall Economic Statement*. The bank is now operational but is still developing as an institution – the President and CEO were only appointed in June 2018 – and it has announced one investment to date.

The original rationale for establishing the bank was to provide low-cost financing for new infrastructure projects and to provide support where a lack of capital represented a barrier to progressing infrastructure projects. The rationale has been further developed since that time – the bank has been given the responsibility for developing a pipeline of projects and potential investment opportunities at different levels of government (federal, provincial and municipal), and to act as a centre of expertise on infrastructure projects involving private sector investment.

C.2. MANDATE

The CIB's mandate is to make investments in revenue-generating infrastructure projects that are in the public interest, and to seek to attract investment from private sector and institutional investors to those projects, focusing on new (i.e. 'greenfield') infrastructure or infrastructure with new elements. It has a secondary objective to identify opportunities that provide the greatest economic, social and environmental returns, and to build a portfolio of investments that will make a substantive contribution to supporting Canada's greenhouse gas reduction goals.

C.3. INSTITUTIONAL STRUCTURE

The CIB was established via the Canada Infrastructure Bank Act 2017. It is structured as a Crown corporation – this means that it is wholly owned by the federal government but will be operated at arms-length from government. This allows the bank to pursue its public policy objectives whilst balancing commercial and financial pressures.

C.4. GOVERNANCE STRUCTURE

The CIB is governed by an independent Board of Directors and led by a Chief Executive Officer, all of whom are appointed by the federal Cabinet on the recommendation of the federal Minister of Infrastructure and Communities. The CIB has the flexibility to hire qualified employees with the commercial experience and professional skills needed to enable the Bank to execute its mandate.

This arms-length structure should provide the CIB with the independence required for it to be a credible commercial counterparty with investors and to make recommendations to governments based on commercial assessments and analysis. However, the bank remains accountable to Parliament through the Minister of Infrastructure. The CIB is also required to submit an annual corporate plan to government, with operating and capital budgets. The annual corporate plan provides an opportunity for the bank and the government to align on a strategic vision for the organization. The government can intervene directly in the management of the CIB by having the Minister of Infrastructure issue a directive to the CIB Board, ordering it to take a specific action (it is expected that this power would likely only be exercised in limited circumstances).



The day-to-day management of the CIB is carried out by the CEO and his leadership team. As of 30 November 2018, a number of leadership positions had been recently recruited, including Head of Investments, with the recruitment of other senior posts ongoing. There is currently little available detail on how the CIB will originate and approve projects, but the direction of travel is clearly for the bank (in coordination with other levels of government) to develop and maintain a national pipeline of opportunities which are presented to a form of investment committee. The government has also mandated that the CIB should consider unsolicited proposals from private sector investors.

C.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

There is a nominal amount of equity capital in the CIB, provided by the Government of Canada. It has no creditors and it does not appear to have any plans to raise debt.

The CIB has a mandate to invest up to CAD 35 billion (USD 26 billion) supported by federal funding. CAD 15 billion (USD 11 billion) will come from existing funds committed in the government's *Investing in Canada* infrastructure plan to three priority areas, including:

- CAD 5 billion (USD 3.8 billion) for public transit systems;
- CAD 5 billion (USD 3.8 billion) for trade and transportation corridors; and
- CAD 5 billion (USD 3.8 billion) for green infrastructure projects.

Whilst CIB will not be providing grant funding,⁸¹ it is unclear whether the CAD 15 billion (USD 11 billion) allocated to the three priority areas identified above will be disbursed in the same fashion as the other CAD 20 billion (USD 15 billion) which the CIB is authorised to invest.

C.6. FINANCING ACTIVITIES

The CIB will invest in the form of debt, equity or other innovative tools. It can provide finance at below-market rates or on subordinated terms in order to attract private sector investment to projects that would not otherwise be viable, but the bank should be able to demonstrate that the project would not have been viable without such concessions. The CIB should also be able to demonstrate how its investments benefit Canadians relative to standard financing and procurement as well as public-private partnership approaches.

The CIB has a stated objective to make public dollars go further, meaning that the bank's investments should be selected and structured in order to attract as much private sector and institutional capital to projects as possible. In addition, the CIB must be careful to not compete with, or crowd-out, private sector investment where the capacity to invest already exists.

Loan guarantees, or equivalent instruments, should be limited in nature and used only if they can be structured to ensure private capital is also at risk. The CIB should take only a minority shareholder position whenever it invests in equity, and also be a minority (i.e. less than 50 percent) participant in the overall financial exposure of a project.

The CIB is still in the relatively early stages of development, and has only supported one project to date:

⁸¹ Canada Infrastructure Bank. Presentation to the CCPPP Conference. (November 2018). [Online]. <<https://cib-bic.ca/wp-content/uploads/2018/11/CIB-Presentation-to-C2P3-Slides-English.pdf>>.





- **The Réseau Express Métropolitain Project (REM).** The CIB reached a “business agreement” in August 2018 with CDPQ Infra to invest CAD 1.28 billion (USD 1 billion) in a 67km high-frequency light rail project in Montréal. The bank’s investment will take the form of a 15-year senior secured loan at a rate starting at one percent escalating to three percent over the term of the loan.
- CDPQ Infra has invested CAD 2.95 billion (USD 2.2 billion) and has a 70 percent equity stake in the REM project. The Government of Quebec has invested CAD 1.28 billion and has a 30 percent equity stake. There is also a CAD 295 million (USD 222 million) contribution from Hydro-Quebec and CAD 512 million (USD 286 million) from the Autorité Régionale de Transport Métropolitain.
- Any dividends from the project will flow to CDPQ Infra until it has met its target eight percent return, and then the Government of Quebec (3.7 percent), after which returns will be shared between the owners.⁸²

C.7. GREEN FINANCING

Green energy is one of the three focus areas for the CIB (the other two being public transit and trade and transportation). To advance Canada's efforts to build a clean economy, the government will make CAD 5 billion (USD 3.8 billion) available for green infrastructure projects through the CIB.

C.8. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The CIB has also been asked by the government to act as a centre of expertise on infrastructure projects involving private-sector investment and to help identify a pipeline of projects and potential investment opportunities. As of November 2018, there is limited detail about CIB’s anticipated role in respect of the first of these two requests, except that it is intended to work with public sector project sponsors/procurement agencies and private sector sponsors, possibly with a focus on unsolicited project proposals, market development ideas and other specific investment requests. CIB is also working on the requested inventory of Canadian infrastructure project proposals – with the content provided by project proponents but managed by CIB – which is expected to launch by mid-2019.⁸³

C.9. PERFORMANCE MONITORING

The CIB must review its operations and performance every five years and present this review to the federal Minister of Infrastructure.

⁸² CDPQ Infra. Financial Information Note - Update following the confirmation of the Government of Québec’s financial commitment. (March 2017). [Online]. <https://www.cdpqinfra.com/sites/default/files/pdf/2017-03-28_notefinanciere_no2_en.pdf>

⁸³ Canada Infrastructure Bank. Presentation to the CCPPP Conference. (November 2018). [Online]. <<https://cib-bic.ca/wp-content/uploads/2018/11/CIB-Presentation-to-C2P3-Slides-English.pdf>>.



ANNEX D: CHINA – CHINA DEVELOPMENT BANK

D.1. BACKGROUND AND ESTABLISHMENT

CDB was founded in 1994, and is one of the three policy banks of the Government of China, established to implement its domestic and, more recently, international economic development strategy.⁸⁴ It was designed to mobilise surplus household savings, via low cost bonds, and deploy these resources in priority infrastructure projects or key industries, in order to remove bottlenecks or transform the structure and performance of the Chinese economy. As a catalyst it has been very successful, and is now established as a leading DFI, on a global scale beyond that of the World Bank Group and all the main Regional Development Banks combined.⁸⁵

Although initially set up as a financing and implementation arm, with project pipelines being passed along by the then State Planning Commission, this led to a rise in non-performing loans, and the CBD was subject to major governance and operating changes in the late 1990s.^{86, 87} The CBD became a joint stock corporation in 2008 and, formally, a DFI in 2015. From 1998 onwards, it has successfully pursued its goal of being a market-led, commercially-operated development bank with Chinese characteristics. Its operations accelerated following the 2008 global financial crisis. Within China, this included urbanisation and industrial restructuring and high-profile, socially- and economically-productive priority national infrastructure projects. It also rapidly increased its overseas energy and other resource-backed loans, as well as securing raw material supplies. It has been proactive in the development of Chinese capital markets and the internationalisation of China's currency, while continuing to be flexible and innovative in its packaging of interventions, including municipal PPPs and generation of non-loan revenues.

In 2017, CDB reported total assets of CNY 15,959 billion (USD 2,357 billion) and total liabilities of CNY 14,719 billion (USD 2,165 billion). Its net profit was a relatively low CNY 114 billion (USD 16.8 billion), reflecting the CBD's national development mission.

D.2. MANDATE

CDB is a wholesale lender specialising in providing medium- to long-term financing in infrastructure, basic and transformative industries, and related areas.

The CDB Mission Statement is concise: “enhancing national competitiveness and improving people's livelihood.” However, the expanded description that follows it demonstrates the fundamental Chinese characteristics of the CDB and underline its national development policy focus.⁸⁸ This is outlined below.

Enhancing national competitiveness

⁸⁴ Policy Bank Laws of 1994; the other two policy banks are the Export-Import Bank of China and the Agricultural Development Bank of China.

⁸⁵ CDB is the second biggest bond issuer in China. The latest available Annual Report is for 2017 and the Sustainability Report 2016; see CDB website. Unless otherwise stated financial and operating statistics are based on these two sources.

⁸⁶ Reaching some 40 percent; these were progressively restructured using asset management companies and at the same time CDB itself was subject to reform in structure, governance and operations.

⁸⁷ This led to a three-step reform plan in 2013 that included governance change, formal conversion to a DFI and indefinite recognition by the China Banking Regulatory Commission (CBRC) of the sovereign credit rating and zero risk status weight to CDB CNY and foreign currency bonds. This was achieved in May 2015.

⁸⁸ CDB Website. Corporate Culture – Our Mission. [Online]. <<http://www.cdb.com.cn/English/qywh/khsm/>>.





“Since its foundation, CDB has made active efforts to push forward the implementation of national strategies through financial support. The bank dedicates itself to key projects of infrastructure and basic/pillar industries, urbanization development, improving people’s livelihood, overseas investment of Chinese enterprises, alleviating development constraints and supporting macro regulation. The bank has helped mitigate the impact of the global financial crisis and promote stable economic growth and restructuring, contributing greatly to China’s economic and social development and overall competitiveness.”

“Sustainable development of the Chinese economy requires development finance to continue to play its role. CDB will continue to support major national projects, increase the provision of public goods, and continuously build up economic development momentum; create new scope for regional development, and tap into economic growth potential; drive industrial restructuring and facilitate the development of new technology, new industries, and new business formats; inject new vitality into economic development; support the “Beautiful China” strategy, develop green finance, and boost sustainable economic and social development; support internationalization initiatives of Chinese enterprises, actively participate in global governance, increase China’s overall competitiveness and international influence.”

Improving people’s livelihood

“CDB aligns its operations with the goal of finishing building a moderately prosperous society, applying successful experiences gained in infrastructure construction to projects closely related to the people’s livelihood, e.g. affordable housing for low-income groups, poverty relief, agriculture, rural areas, and farmers development, education and healthcare, SMEs and microbusiness projects. In addition, inclusive finance will be further developed to stimulate social progress and facilitate the building of a harmonious society.”

“Efforts should be made to improve people’s livelihood by effectively addressing fundamental production and development issues affecting the general public. CDB commits itself to strongly supporting “shared development”, pushing forward key projects related to people’s livelihood, promoting social equity and justice, improving people’s well-being, so that more people can benefit equally from the country’s development. To this end, we will continue to innovate our products, services and business models, and mobilize various resources to channel private capital toward projects closely related to people’s livelihood; we will work to strengthen “weak links” in China’s modernisation drive, and make new contributions to finish building a moderately prosperous society.”

The vision that follows is to create a world class DFI that provides sustained support to economic and social development. CDB also emphasises core values, namely: **responsibility, innovation, green growth, prudence and win-win development.**

D.3. INSTITUTIONAL STRUCTURE

The CDB is wholly owned by the Government of China and its shares are not listed. It was officially defined as a DFI in 2015 and is regulated by the People’s Bank of China. Its current share ownership structure is: Ministry of Finance (MoF) 36.54 percent; Central Huijin Investment Limited (a subsidiary of the China sovereign wealth fund) 34.68 percent; Buttonwood Investment Holding Company Limited (a subsidiary of the State Administration for Foreign Exchange) 27.19 percent; and the National Council for Social Security Fund 1.5 percent. There are no known plans to change or diversify ownership.

As of 2015, the CDB group had over 9,000 employees spread over some 37 functioning departments, plus housing finance recovery and poverty units; these were in some 37 primary branches in China, plus five representative offices overseas in London, Caracas, Rio de Janeiro, Cairo and Moscow. CDB’s international



activities, either directly or via Chinese enterprises, cover some 100 countries and domestic branches are twinned; for example, the Shandong branch handles Venezuela.⁸⁹ It also has five specialised subsidiaries; for instance, CDB Capital deals in equity investments, and other subsidiaries are funds or facilities including the China Africa Development Fund. Equity investment seems to be mainly in strategic or emerging industries rather than infrastructure, but mergers and acquisitions activities have also increased in recent years. The largest subsidiary, CDB Capital Co Ltd, has registered capital of USD 7.8 billion.

In 2017, the CDB developed, with the regulatory authorities, a new guide for operations and sustainable growth. The strategic emphasis remains to support national infrastructure and economic development priorities as laid out in the 19th National Congress of the Chinese Communist Party and the 13th Five Year Plan. CDB structures will continue to evolve in line with the priorities set by the above framework, with increased emphasis on risk, market-led innovation and international DFI cooperation. China is not a member of the OECD and is not bound by OECD Development Assistance Committee (DAC) or other reporting requirements.

D.4. GOVERNANCE STRUCTURE

CDB has the status of a Ministry and is under the direct jurisdiction of the State Council of the Central Government. There are thirteen members on the Board of Directors under the current Articles of Association set by the State Council. Of these, three are Executive Directors, including the Chairman and Vice Chairman, four were appointed from government agencies and six were appointed by the equity shareholders.⁹⁰ The Board reports to a six-person Supervisory Board and is assisted by an International Advisory Council of banking experts. The Board and governance structures have progressively evolved since reform began in the late 1990s; given its positioning and performance, day-to-day government involvement is very limited but overall strategic control remains due to the direct representation of the agency and equity stakeholders plus the reporting line from the Supervisory Board to the State Council.

Project origination in mainland China is through comprehensive application of national and local economic and social development planning, with the CDB systematically involved from early stage concepts through to feasibility and structuring, transactions, construction and operation. Models are standardised and benefit from public sector convening and regulatory powers. Urbanisation, land values and infrastructure are packaged and de-risked through the use of special purpose vehicles. CDB has developed strong project development expertise and uses its high-scale/low-cost DFI positioning to secure its own version of ‘bankable’ projects. It seeks to do this in a way which is commercially and financially sustainable but not based on CDB profit maximisation.

D.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The debt to equity ratio (including a small amount of subordinated debt) is 92:8, a very high level of gearing. Capital adequacy was 11.6 percent, with shareholders’ equity at CNY 1,240 billion (USD 182 billion). The most recent injection of equity – some USD 38 billion – from the subsidiary investment company of the State Administration of Foreign Exchange was in July 2015, and raised its equity share to similar levels to the MoF and the Central Huijin Company. Share capital only accounts for CNY 421 billion (USD 61.9 billion), with

⁸⁹ The six largest country debtors are Venezuela, Russia, Brazil, Argentina, Australia and India.

⁹⁰ The agency directors are from the MoF, the National Development and Reform Commission, the Peoples’ Bank of China and the Ministry of Commerce. In principle they are meant to facilitate coordination while the other Directors provide strategic and operational business development.





the residual being capital reserves or general risk provisions. Return on average shareholder equity in 2017 was 9.45 percent, progressively down from around 15 percent in 2013/14.

The main source of finance is debt securities; these are currently some 58 percent of liabilities. On the other side of the balance sheet, net loans and advances total just over two-thirds of total assets. Due to its privileged position and the limited number of household savings investment alternatives, the CDB is able to issue long-term debt at low interest rates. As of 2017, the tenor profiles of its bonds were: less than one-year at 18.2 percent; one to five years at 37.2 percent; five to ten years at 40 percent; and over ten years at 4.5 percent. The CDB has been able to maintain a low cost of capital resulting in typical loan rates of around four percent and a net operating margin of 1.27 percent.

The CDB proactively seeks to diversify its own financing sources, in particular to deepen and widen the domestic capital markets – CDB bonds account for 23 percent of market trading volume – through bond swap mechanisms, development of market instruments and improved treasury techniques.

Intermediary business includes Asset Backed Securities, of which some CNY 38 billion (USD 5.6 billion) were issued in 2017 with an aggregate total of CNY 300 billion (USD 44 billion).⁹¹ These include poverty alleviation bonds and performance guarantees for PPPs. CDB is an established lead underwriter (and syndicator) and attributes reductions in infrastructure financing costs to its interventions. It also offers softer terms to its loans, which try to crowd-in other resources to areas or industries needing regeneration or emerging high potential industries.

CDB does not appear to be reliant on government budget allocations or guarantees, even on overseas projects, due to its privileged ability to raise bond finance. CDB bond issues are rated as equivalent to sovereign debt and were marginally downgraded in 2017 for the first time in thirty years. The current ratings are: Fitch A +, Moody's Aa3, and Standard & Poor's AA -.

Based on its sovereign credit status with bonds that are zero-risk rated, in 2017, CDB issued CNY 1.65 trillion (USD 240 billion) of domestic bonds, together with USD 9 billion of overseas bonds. These were structured in a variety of forms, including green and poverty alleviation bonds, and through a diverse set of outlets, including commercial banks and the CDB-sponsored Bond Connect initiative that allows international access. CDB bonds provide a full yield curve that provides domestic market benchmarks across different capital maturity dates.

Due to the lack of alternatives and the zero-risk status, CDB bonds have low interest rates and can command medium- to long-term tenors. Internationally, the recent BRI Green Bond had a coupon rate of 2.75 percent for five years (USD 500 million) and 0.375 percent for the four-year EUR 1 billion issue.

D.6. FINANCING ACTIVITIES

The 2017 accounts give the following sector distribution of the outstanding loan balances: railways 7.3 percent; highways 16.1 percent; electric power 8.2 percent; public infrastructure (includes water) 11.1 percent; urban renewal 25.8 percent; strategic emerging industries 6.2 percent; and other assets 25.3 percent.

⁹² In total, therefore, 42.7 percent is directly classified as infrastructure, but other investments will include overseas infrastructure financed by CDB cross-border loans. In geographic terms, despite the rapid rise in

⁹¹ This is in reference to the financing of CDB's portfolio.

⁹² Often these will be clustered within a network or corridor or urban area and integrated within a transformational program, such that scale and linkages can be maximised and economic development outcomes form the basis for credit enhancement and guarantees.



foreign loans, the CDB remains predominantly focused on the domestic market: taking the balance of 2017 net loans, only 2.35 percent were outside the Chinese mainland. Internally, the eastern and western areas of China dominated, with a combined 70 percent share. Nevertheless, it has rapidly grown to become the leading Chinese bank in terms of foreign exchange loans. In 2017, these totalled CNY 261.7 billion (USD 39 billion), concentrated in the Asia–Pacific and Euro–Asia regions.

The CDB also has a portfolio of poverty alleviation interventions that include regional development, urban regeneration and rapid transit, social housing, emerging industries and education. The packaging mechanism is standard and referred to as the “Four Platforms plus Agencies” model; this integrates management, financing, guarantees and public information with credit enhancement and on-lending. The CDB does not publish a client list but the majority are SOEs or local governments (often through an incorporated Local Government Finance Platform or other special purpose vehicles) or foreign governments/public bodies.

The CDB continues to be a leading policy, planner and financier of the Belt and Road Initiative (BRI) and has committed some USD 17.1 billion in BRI project or program loans in 2017.⁹³ It issued USD 350 million of BRI bonds in Hong Kong through the new market Bond Connect mechanism and was lead underwriter of the Maybank CNY 1 billion (USD 150 million) “panda” bond to facilitate international participation. BRI is promoted through various cooperation platforms such as the China–Central and Eastern Europe Interbank Association but also the Shanghai Cooperation Organisation, and the China–ASEAN and China–BRICS Associations. It underlines its policy status by deepening its research and planning capacities, and its knowledge management activities, and by exporting Chinese experiences and models. This cooperation extends to the World Bank Group, DFIs, BRICS and bilateral country arrangements.

While the CDB often contracts with a private sector entity (as noted above), these arrangements are typically some form of special purpose platform with majority public ownership at the local government or city level; overseas, the contracts are mainly with governments or Chinese enterprises. The CDB is very flexible on blending concessional and more commercial terms; but as a lead sponsor it also provides technical assistance, consultancy and other in-house project development expertise, including early stage finance. Typically, it will seek to recover this via a mix of financing and user fees or shares of fiscal revenues or land sales over long-term operating periods. Project banking arrangements tend to ensure this happens by internalising cash flows through CDB channels.

Recent major investments include the Three Gorges Dam; the Xi’an – Chengdu Railway and other sections of the Chinese high-speed rail network; Beijing Airport; and numerous expressways and city rapid transit programs. The CDB approach, which stresses early participation and screening according to established local or national priorities and then packaging within a proven financial model with extensive guarantees, is normally closely adhered to; changes or innovations are always carefully piloted before being rolled out at scale. CDB is an established anchor institution within its chosen infrastructure and other sectors. Its dependence on economic growth and, more specifically, land values has been seen by some commentators as a structural weakness.⁹⁴ Its domestic bond dominance remains closely associated with the continuance of the zero-risk status for bonds, which underpins its ability to raise large-scale low-cost financing over the medium to long-terms. After a period of uncertainty, this regulatory policy was retained in 2015.

⁹³ It also increasingly provides CNY cross-border financing linked to sponsored Chinese SOEs or natural resource-backed deals. African central banks also have CNY accounts.

⁹⁴ Boston University, Global Economic Governance Initiative, working paper 05, July 2017, “The Sustainable Infrastructure Finance of China Development Bank: Composition, Experience and Policy Implications,” Yongzhong Wang.





D.7. GREEN FINANCING

In China, the CDB has financed a wide range of clean energy infrastructure projects across all sectors, and it reports on environmental benefits through the use of standard indicators. It has recently issued an CNY 25 billion (USD 3.7 billion) retail green bond that was marketed to individuals through commercial banks, a departure from the usual channels to try and widen participation and awareness. In 2017, it also successfully issued quasi-sovereign green bonds for BRI projects, mainly transport, water and renewable energy, for USD 500 million and EUR 1 billion.

D.8. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

In its early history, the CDB was essentially allocated projects from the then State Planning Commission, and this led to pipeline quality and performance/debt issues. As part of its commercialisation and sustainability reforms, it has invested in major planning, project preparation credit, special investment platforms, technical assistance and research capacities. This means it can de-risk its project pipeline and portfolio, be catalytic and also establish itself as an independent key advisor on infrastructure strategy, both domestic and foreign.⁹⁵

Within China, the CDB incrementally developed the Wuhu (1998) and Tianjin (2003/4) models of integrating urbanisation, infrastructure finance and economic development through the creation of special purpose Local Government Finance Platforms – these being essentially private in legal form - in partnership with local governments and developers, which utilised land usage rights and fiscal revenues to mitigate credit risk. CDB established supervisory financial management mechanisms that ensured they were in control of all relevant transaction flows. This model became standard throughout local governments in China with flexible packaging of hard and soft loans, and was then adapted for oil or other resource-backed overseas transactions. In China, this portfolio was developed in a context of high growth and high demand for land and infrastructure services. It should also be noted that, in China, local governments are authorised to issue bonds in line with the rules set by the central government and under the quantity limitation annually approved by the National People's Congress.

CDB has developed a comprehensive 'turnkey' project development/structuring/transaction/exit approach with very early stage involvement in planning and feasibility studies; providing both financing, consultancy and technical assistance to local governments and developers to proactively support project origination in a manner that will facilitate the bankability of the projects. Prospective projects are screened by local and national development strategies and the Local Government Finance Platform model and expertise is drawn from local and national centres. Once financed and constructed, a pre-prepared exit strategy is implemented, and funds are recycled. Financing may be bundled between hard and soft loans, but the overall aim is commercial, and CDB is flexible about the way non-interest income is optimised. It also has a long-term presence through its office network and sees any demonstration effects as part of its mission.

Public reports do not disaggregate data on the overall costs of project preparation through the cycle; there are also no breakdowns of CDB operating costs by business segments or units. In developing the BRI program and potential pipeline, the CDB has deployed a similar planning-led approach, seeking to identify and structure projects that enhance network connectivity and production capacity and finance in an integrated manner.

⁹⁵ This includes the Belt and Road Initiative. Domestically, CDB also indirectly helps crowd-in other Chinese commercial banks via bond issues and guarantees.



D.9. PERFORMANCE MONITORING

Non-performing loans in 2017 were reported as 0.7 percent and the loss allowance as a proportion of total loans was 3.6 percent. Non-performing loans have remained under one percent over the last 50 quarters.

The CBD's annual reports provide considerable comment on the importance given to the management of risk – credit, market, operational, reputational, foreign exchange - and efforts to improve processes and techniques, but offer very little detail. The status and positioning of the bank clearly puts pressure on the preservation of state capital and the avoidance/resolution of non-performing loans. There is evidence of some small-scale write-offs on domestic projects, but the preference seems to be to restructure or refinance within the envelope offered by long-term packaging and transaction operation finance management.

The CDB has been criticised in the past for a lack of transparency and low weightings given to social and environmental standards, but Chinese government policy has now radically shifted, with green infrastructure and green industry/housing now being seen as a driver and an investment priority. The CDB has already significantly transformed its portfolio to address this.

D.10. KEY LESSONS LEARNED

The CDB has successfully mobilised infrastructure financing at a scale, tenor and cost that is remarkable. It also continues to grow its capacity and funding channels at a sustained high rate through economic cycles and shocks. It has leveraged its position and status to retain and enhance its domestic zero-risk bond financing privileges. To do so, it has focused on performance and improving the quality of its core loan portfolio through a comprehensive approach to pipeline preparation, structuring, financing and management. By following this course of action, the CBD has addressed the gap in infrastructure financing at the local government level in China and supported large, transformative national network priorities. It has kept a rigorous domestic infrastructure focus, but has also been willing to flexibly address social, green, and emerging industries and the BRI. The relationships with local and national government have also allowed the CBD to take a longer and wider view on infrastructure economic benefits, both direct and indirect. It has also tended to pilot and incrementally develop standard models which are then replicated and accelerated by demonstration effects.

The extent to which the CBD is catalytic is difficult to assess on the evidence available in the public domain, and there may be some market distortion or displacement effects, but its central anchor role – albeit within a high growth, export-led national economic context – is clear. The CDB would also claim additionality above the project or program level, looking at capital market development, internationalisation and financial cooperation at the country, regional and global level. It has also led on green financing and sought to increase its advisory and policy research positioning.





ANNEX E : GERMANY - KREDITANSTALT FÜR WIEDERAUFBAU (KfW)

E.1. BACKGROUND AND ESTABLISHMENT

KfW was established in 1948 in Frankfurt, Germany, with the aim to reconstruct the German economy after World War Two, with the Western Allies commissioning a central agency for that purpose. The initial investment financing was provided by the Marshall Plan, with funds amounting to the equivalent of EUR 1 billion.⁹⁶

While the original rationale for establishing KfW was to provide financing for the reconstruction of Germany, the bank has diversified extensively since. Even from as early as 1961, KfW was given a legal mandate to finance development aid. However, in the 1970s it refocused on domestic promotion. With reunification in 1990, KfW focused on accelerating the development of eastern Germany. It is regulated by the “Law concerning KfW” and exempt from corporate taxes. KfW has grown rapidly in recent years and, at the end of 2017, had EUR 366 billion outstanding in global capital and bond markets. It is also Germany’s third largest commercial bank. Total assets were reported as EUR 472.3 billion at year end 2017.

KfW is the sixth largest global bond issuer - around EUR 80 billion per year – there is a statutory federal government guarantee and funders include institutional and retail sources, domestic and international. It acts as an agent and centre of technical expertise for both the federal and state governments. Beyond this, it provides a policy piloting and implementation, monitoring and dialogue platform, directly with government. This strong and direct relationship with policymakers, combined with the ability to finance at scale and low cost, is a key characteristic and one of the main reasons why KfW is effective and efficient.

E.2. MANDATE

The bank’s mandate is to improve the economic, social and ecological living conditions around the world on behalf of Germany. It performs its tasks pursuant to state mandates in different areas.

KfW’s work can be divided into domestic promotion; export and project finance; and development finance. The areas follow different mandates, as follows:

- **Domestic promotion:** Domestically, KfW’s mandate is to sustainably support changes in the economy, ecology and society. The tasks are divided into three business sectors, where KfW finances SMEs, private clients, municipalities, and organisations. In the 2017 Annual Report, the annual domestic promotional business activity was reported at EUR 51.8 billion.
- **Export and project finance:** The KfW IPEX-Bank GmbH focuses on international export and project finance for German and European companies and the promotion of developing countries and emerging economies. Its mandate is to support German and European companies to preserve and increase their competitiveness in global markets. This includes medium- and long-term structured financing for the export industry; maintenance and expansion of German and European infrastructure, climate and environmental protection projects; and securing German and European raw material supplies. Total export and project finance activities in 2017 were EUR 13.8 billion.

⁹⁶ KfW at a glance – Facts and Figures. (April 2013). [Online]. <https://www.KfW.de/Download-Center/Konzernthemen/Kompass-und-Imagebrosch%C3%BCre/KfW-Zahlen-und-Fakten_en.pdf>



- **Development finance:** On behalf of the Federal Ministry for Economic Cooperation and Development, the KfW Development Bank promotes initiatives in developing countries and emerging economies, with the objective of sustainably improving economic and social living conditions, reducing poverty and protecting the climate and the environment. It also executes mandates by the EU Commission and selected bilateral donors. It focuses on the finance and support of projects that primarily involve public sector players. KfW's subsidiary DEG focuses on developmental finance aimed at expanding the private sector, supports sustainable development that creates qualified jobs and improves living conditions, promotes innovative business models and introduces international standards in developing countries. For 2017, development finance totalled EUR 8.2 billion.

Other functions of KfW include granting loans and other forms of financing to territorial authorities and special-purpose associations under public law, as well as financing measures with purely social goals and for the promotion of education. KfW also has a mandate to grant other financings in the interest of the German and European economies. KfW supports the Federal Republic of Germany in the performance of special tasks, such as the privatisation of enterprises and the provision of local financing in other European countries.

E.3. INSTITUTIONAL STRUCTURE

KfW is owned 80 percent by the Federal Republic of Germany and 20 percent by the States of Germany. It is a public agency with unremunerated equity provided by its public shareholders. It is constrained by the mandate in the KfW Law and not allowed to compete with commercial banks.

E.4. GOVERNANCE STRUCTURE

E.4.1. Executive Board

The Executive Board has five members and conducts KfW's business and administers its assets according to the Law Concerning KfW and the KfW by-laws. It is responsible for performing its assigned duties under this legislation, and sees to the implementation of resolutions taken by the Supervisory Board of Directors.⁹⁷

E.4.2. Supervisory Board of Directors and its Committees

The Supervisory Board of Directors and its committees supervise the conduct of KfW's business and the administration of its assets. The main tasks for which it holds responsibility are the appointment and dismissal of members of the Executive Board, the approval of the financial statements as well as the planning and selection of the auditor to be appointed by the Supervisory Authority. The board is chaired by the Federal Minister of Finance and the Federal Minister for Economic Affairs and Energy in alternation.

The board is composed of 37 members of both chambers of the German federal parliament, and representatives from banks (appointed by government), industry (appointed by government) and trade unions (appointed by government though likely officials from the trade unions). They all have equal voting rights and most decisions are based on majority votes.⁹⁸

There are four sub-committees:

⁹⁷ KfW Website. Executive Board. [Online]. <<https://www.KfW.de/KfW-Group/About-KfW/Vorstand-und-Gremien/Vorstand/>>.

⁹⁸ KfW Website. Board of Supervisory Directors. [Online]. <<https://www.KfW.de/KfW-Group/About-KfW/Vorstand-und-Gremien/Verwaltungsrat-und-seine-Aussch%C3%BCsse/>>.





- the Presidential and Nomination Committee;
- the Remuneration Committee;
- the Risk and Credit Committee, which deals with risk matters and approves large loans; and
- the Audit Committee.

E.4.3. Mittelstandsrat (SME Advisory Council) at KfW

The Mittelstandsrat (SME Advisory Council) controls the state mandate of KfW Mittelstandsbank. It deliberates and takes decisions on proposals for the promotion of small- and medium-sized enterprises, taking into consideration the overall business planning of the Institution.⁹⁹

E.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The KfW funds its business almost entirely through international capital markets, with an annual issuance volume of around EUR 70-80 billion. As of December 2017, capital market financing accounted for 81 percent of KfW's financing, followed by nine percent raised through money markets; an additional six percent of its capitalisation is equity, while four percent constitutes other liabilities (primarily collateral from derivative transactions). Initially, the share in nominal capital supplied by the Federal Republic of Germany was largely attributed to the European Recovery Program (Marshall Plan) Special fund.

The KfW has a Tier I ratio of 20.6 percent and a total capital ratio of 20.6 percent. The bank follows a three-pillar strategy to secure funding from international capital markets:

- The **Benchmark program** constitutes the first pillar, making up 71 percent of the KfW's bond volume as the bank's most important funding source. The program consists of large and liquid bonds with at least three, five, seven and ten-year benchmark maturities each year and target benchmark issue sizes of EUR/USD 3-5 billion.
- The second pillar consists of **other public transactions**, which include large and liquid bonds in strategic markets and with non-benchmark maturities, plus green bonds as well as other structured public bonds in various currencies. This pillar accounts for 25 percent of KfW's bonds.
- The third pillar consists of **private placements**, which are bonds customized for investor needs that are flexible in currency, structure and maturity (four percent of the issuance volume).

Banks and central banks account for the largest part of KfW's investors, followed by asset managers. As stated in the Law concerning KfW, the short-term liabilities of the KfW must not exceed 10 percent of the medium- and long-term liabilities. The Federal Republic of Germany guarantees directly, explicitly and unconditionally, all obligations of KfW, as stated in the Law concerning KfW. Based on this government guarantee, the KfW has been rated Aaa (Moody's) and AAA (Scope ratings, S&P), with a stable outlook.

E.6. FINANCING ACTIVITIES

KfW does not have a branch network on its own but works through on-lending mechanisms. Its financing partners enter into loan agreements with customers and KfW refinances the loans at favourable interest

⁹⁹ KfW Website. SME Advisory Council. [Online]. <https://www.KfW.de/KfW-Group/About-KfW/Vorstand-und-Gremien/Mittelstandsrat-bei-der-KfW/>>.



rates. As noted earlier, in 2017, KfW's domestic promotional business had a volume of EUR 51.8 billion. Almost 60 percent of the financing was directed to municipal and private client bank/credit institutions, with the remaining financing being channelled through the KfW Mittelstandsbank – the SME bank. The majority of financing is directed at the housing sector (18.9 percent), followed by environment and start-ups and general corporate financing support. Infrastructure accounts for only 3.9 percent of the 2017 domestic promotional business. KfW has stated that, in 2017, EUR 3.9 billion was spent on investments in the communal and social infrastructure of Germany. Investments in hospitals, institutions for the elderly or disabled, schools and kindergartens account for the majority of loans. Investments in traffic infrastructure, city and village development and sewage disposal constitute smaller but significant parts of the credit volume.¹⁰⁰

More generally, Germany – at the federal and state level – has never had a long-term structural problem in fiscal space or project management or procurement to constrain finance for network infrastructure from direct budgets; this traditional public sector model still covers some 95 percent of contracts. PPPs are small in number and declining. The need for a national infrastructure bank is, therefore, less obvious than in other countries. What KfW offers is a coherent, public policy-driven set of businesses that have excellent credit ratings and appropriate sector and financial expertise, linked into domestic, European and Global DFI and private networks. It has been catalytic particularly in the establishment of domestic renewable energy generation.

Below is an overview of domestic financial products related to infrastructure investment. The products are focused on particular types of borrowers:

Most relevant to these guidelines, are products offered to municipalities for infrastructure projects:

- **Loan 208 “IKK - Investitionskredit Kommunen”.** These loans support investment in municipal and social infrastructure of up to EUR 150 million per year and applicant. The applicant has to be a municipality or one of their bodies (i.e. a sewage disposal operator fully owned by the municipality).¹⁰¹ Examples include schools, kindergartens, telecommunication distribution networks, transport infrastructure etc. The loans can be used to buy real estate if intended for development purposes. Conditions are based on amount and length of the loan but, in general, the loans allow municipalities to borrow at close to wholesale market rates (with fixed terms for the first ten years – ranging between 0.41 percent and 0.85 percent depending on the length of the loan).¹⁰² The loans can be taken out for up to 30 years.
- **Loan 233 “IKK – Barrierearme Stadt”.** These loans support investment into changes to existing infrastructure to make it more elderly- and family-friendly.¹⁰³ Areas supported include public transport, public spaces and public buildings. There is no limit on the size of the individual loans and the full project can be financed through such a loan. The interest rates offered on these loans are again dependant on tenor but are extremely low, currently ranging between 0.05 percent and 0.2 percent. Applicants need to show how they have used the loan two years after disbursement.
- **Loan 201 “IKK – energetische Stadtsanierung”.** These loans support sustainable investments in energy efficient municipal heat, water and sewage systems. There is no limit on the size of the loan and

¹⁰⁰ KfW. Abschlussbericht zu den Programmen der Investitionsoffensive Infrastruktur. (February 2012). [Online].

<<https://www.KfW.de/Download-Center/Konzernthemen/Research/PDF-Dokumente-Sonderpublikationen/Abschlussbericht-Investitionsoffensive-Infrastruktur.pdf>>.

¹⁰¹ KfW Website – Credit 218. [Online]. <[https://www.kfw.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-Kommunen-\(208\)/>](https://www.kfw.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-Kommunen-(208)/>)

¹⁰² Will finance only 50 percent of projects that cost more than EUR 2 million, but up to 100 percent below.

¹⁰³ KfW Website - Credit 233. [Online]. <[https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Soziale-Kommunen/Finanzierungsangebote/Barrierearme-Stadt-Kommunen-\(233\)/>](https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Soziale-Kommunen/Finanzierungsangebote/Barrierearme-Stadt-Kommunen-(233)/>)



the whole project can be funded. The interest rates offered are extremely low (0.05 percent) and up to five percent (or EUR 2.5 million) of the loan does not have to be repaid if it is successfully shown how the funds are used. Applicants need to show how they have utilised the proceeds of the loan within nine months after disbursement.

Other relevant products for municipal and social organisations (i.e. companies that are owned at least 50 percent by municipalities, not-for-profit organisations such as churches and any private companies that are part of public-private partnerships) include the following:

- **Loan 148: “IKU – Investitionskredit – Kommunale und soziale Unternehmen”.** These loans support any investments in municipal and social infrastructure in Germany of up to EUR 50 million per year and applicant.¹⁰⁴ The complete project can be financed through this loan. Security needs to be provided similar to commercial banking. The conditions of the loan depend on the risk category of the lender and the project, the tenor of the loan and, thus, the loans tend to be offered at a rate above wholesale market rates (i.e. starting at 1.41 percent interest rate). The loans can be taken out up to 30 years, with an ability to fix interest rates for up to ten and 20 years.
- **Loan 234: “IKU Barrierearme Stadt”.** These loans support investments in projects designed to make existing infrastructure more elderly- and family-friendly.¹⁰⁵ Up to EUR 50 million can be financed and the whole project can be founded through the loan. Areas supported include public transport, public spaces and public buildings. Applicants need to show how they have spent the loan within three years after disbursement.

Lastly, there are also direct loans for companies and private people that invest in renewable energy (domestic and international):

- **Loan 270: “Erneuerbare Energien – Standard”.** These loans support investments in renewable energy projects, including solar, wind, demand response and heat networks.¹⁰⁶ Up to EUR 50 million and full project costs can be funded. Conditions are based on risk factors, quality of insurance provided and location for the investment. Interest rates range from one percent to around 7.4 percent. There is also a “premium loan” that is available for investment that aims to use the heat from renewable energy investments. Size can be up to EUR 25 million, but with up to 25 percent not having to be repaid if inefficient heating systems are replaced.
- **Loan 230 “BMU-Umwelt-innovations-programm”.** These loans support innovative pilot projects that have a sustainable impact and have been scientifically proven, but where finance cannot be raised through market mechanisms.¹⁰⁷ Activities supported are development, investment in equipment, costs for launching/running the project and the measuring of success indicators. Qualifying areas include water/sewage, rubbish collection and climate change initiatives. Up to 30 percent of project costs are paid for by the KfW and, for the remaining 70 percent, a loan is available at a reduced interest rate (ranging between 1.8 to 8.2 percent). There is no upper limit on the loan.

¹⁰⁴ KfW Website – Credit 148. [Online]. <[https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-kommunale-Unternehmen-\(148\)/>](https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Kommunale-soziale-Basisversorgung/Finanzierungsangebote/Investitionskredit-kommunale-Unternehmen-(148)/>)

¹⁰⁵ KfW Website – Credit 233. [Online]. <[https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Soziale-Kommunen/Finanzierungsangebote/Barrierearme-Stadt-Kommunen-\(233\)/>](https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Soziale-Kommunen/Finanzierungsangebote/Barrierearme-Stadt-Kommunen-(233)/>)

¹⁰⁶ KfW Website – Credit 270. [Online]. <[https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Energieeffiziente-Versorgung/F%C3%B6rderprodukte/Erneuerbare-Energien-Standard-\(270\)/>](https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Energieeffiziente-Versorgung/F%C3%B6rderprodukte/Erneuerbare-Energien-Standard-(270)/>)

¹⁰⁷ KfW Website – Credit 230. [Online]. <[https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Energieeffiziente-Versorgung/F%C3%B6rderprodukte/BMU-Umweltinnovationsprogramm-\(230\)/>](https://www.KfW.de/inlandsfoerderung/%C3%96ffentliche-Einrichtungen/Energieeffiziente-Versorgung/F%C3%B6rderprodukte/BMU-Umweltinnovationsprogramm-(230)/>)



Most of the loans can be combined, as long as they do not go above any specified limit of KfW financing or above the overall costs of the project.

In 2009 and 2010, the KfW facilitated a special program initiated by the government offering credits for infrastructure at lower rates than the standard KfW products:

Following the financial crisis, the German government decided to introduce two economic stimulus packages. The government instructed KfW with the implementation of the so-called investment plan for infrastructure (“Investitionsoffensive Infrastruktur”), one of the main pillars of the first stimulus package. Within the scope of this plan, KfW offered loans for economically and financially underdeveloped municipalities (Loan 207), not-for-profit organisations (Loan 211), and municipal companies (Loan 212) in order to finance additional infrastructure investments in the respective regions between 2009 and 2010.

Interested parties were able to obtain loans at lower rates than KfW’s usual programs.¹⁰⁸ Loans could be taken out for up to 30 years with interest rates starting from 0 percent p.a. (first and second year of loan 207), 1.10 percent p.a. (Loan 211) and 1.2 percent p.a. (Loan 212), respectively. Fixed interest rate conditions were granted for five years.¹⁰⁹

The uptake was largest for Loan 207, accounting for 50 percent of the credit volume (EUR 1.885 billion). As in KfW’s standard programs, the largest share of the credit volume benefited schools and kindergartens (EUR 485.5 million), followed by hospitals and institutions for the elderly and disabled (EUR 424.3 million).

E.7. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

While KfW offers extensive technical assistance internationally, this is more limited domestically. For example, KfW offers loans that also cover the costs for on-site energy advice; and advice for start-ups and young businesses in order to promote start-up activity in Germany.

E.8. PERFORMANCE MONITORING

KfW does not publicly report project or loan specific indicators. Its portfolio guidelines distinguish between different products and types of counterparties. KfW defines risk guidelines for countries, sectors and products that allow reactions to existing or potential negative developments. Various risk committees as well as a comprehensive risk management policy have been established to monitor and limit risk. However, KfW does report on its impact on environmental sustainability, including the extent to which its financing supports improvements in energy efficiency.

E.9. KEY LESSONS LEARNED

KfW has been a major strategic player in the transformation of the German economy, particularly in supporting exports, renewable energy and energy efficiency, as well as SMEs, innovation and social infrastructure, such as housing and communal facilities.

¹⁰⁸ KfW. Abschlussbericht zu den Programmen der Investitionsoffensive Infrastruktur. (February 2012). [Online]. <<https://www.KfW.de/Download-Center/Konzernthemen/Research/PDF-Dokumente-Sonderpublikationen/Abschlussbericht-Investitionsoffensive-Infrastruktur.pdf>>.

¹⁰⁹

https://www.regierung.oberbayern.bayern.de/imperia/md/content/regob/internet/dokumente/bereich3/energieeffizientesbauen/veranstaltungen/08_f_rderprogram_der_KfW.pdf





KfW reports and is organised on a thematic rather than sectoral basis. It is programmatic and iterative; often working through intermediaries with the latter taking any credit risk on projects. It is not a major financier of domestic infrastructure at the municipal level except in regard to its thematic priorities such as renewable energy and energy efficiency.

It has evolved in line with public policy priorities: post war recovery, exports, restructuring, clean energy and public goods. Strong governance and legal arrangements are in place and a group strategy reflects the public ownership interests. Its domestic banking operations are regulated so as not to compete with the private sector.

This political and regulatory framework is very context-specific to Germany. KfW is an instrument of government policy and its Ministerial stakeholders include Finance, Energy, Environment and Development Cooperation. This diversity fits closely with its programmatic and thematic modes of operation. It is also an independent centre of expertise and technical advice for government and can provide innovation and experimentation platforms.

It is flexible in how it operates either via commercial or mortgage banks or by providing direct loans, using standard loan products. Government may provide budget subsidies for selected areas like innovation or SMEs.

In international operations, KfW keeps to the same set of environmental standards and policies as for the domestic projects that it finances; this demonstration objective directly flows from government policy. This is seen as facilitating technical quality and replication, improving impact and making monitoring easier.

Due to its legal tax-free status, public ownership, unremunerated equity and competitive positioning, it is an efficient and effective mobiliser of long-term resources from global capital markets; this coupled with federal budget funds allows large-scale lending at below-market rates. This provides an impressive and sustainable financial investment platform.



ANNEX F : INDIA - NATIONAL INVESTMENT AND INFRASTRUCTURE FUND (NIIF)

F.1. BACKGROUND AND ESTABLISHMENT

The National Investment and Infrastructure Fund (NIIF) was established in 2015, to address the long-term financing needs of the infrastructure sector in India. It has a pure equity structure, spanning three investment sub funds – Master Fund, the Fund of Funds (FoF), and the Strategic Investments Fund.

While the Government of India is the anchor investor in the NIIF (accounting for a 49 percent stake), NIIF has been conceptualised as a platform for mobilising both national as well as global capital, given the constraints facing the domestic banking sector (particularly public sector banks) as well as the publicly-owned vehicles which had been previously tasked with supporting the infrastructure sector.¹¹⁰ These more traditional sources of finance have been increasingly unable to commit to long-term financing portfolios and projects with long gestation periods due to the pressure of non-performing and stressed assets. The rationale for establishing NIIF can further be understood in light of the challenges related to identifying equity capital, in particular long-term patient capital.

NIIF has a proposed corpus of USD 6 billion; and through its Funds will make long-term equity investments in operating assets, greenfield projects and third-party managed funds in core infrastructure and related segments, with a view to leveraging this equity manifold.

F.2. MANDATE

NIIF's funds have mandates to invest in infrastructure assets and related businesses that are likely to benefit from the long-term growth trajectory of the Indian economy. The investment objective is to generate attractive long-term risk-adjusted returns for investors on a sustainable basis. The sector coverage includes energy, transportation, housing, water, waste management and other infrastructure-related sectors in India. More specifically, each of NIIF's three funds have a distinct mandate:

- **The Master Fund.** This fund primarily invests in operating assets in core infrastructure sectors, such as roads, ports, airports, energy etc. Target businesses are typically mature entities with a long-term track record, often operating in regulated environments or under concession/ long-term agreements, and which can provide predictable inflation-hedged and stable cash flows.
- **Fund of Funds.** This fund invests in funds managed by fund managers in infrastructure and associated sectors. Sectors of focus include Green Infrastructure, Mid-Income & Affordable Housing, Infrastructure services and allied sectors.
- **Strategic Investment Fund.** This fund is aimed at growth and development-stage investments in large scale projects/companies in a broad range of sectors of economic and commercial importance, which are likely to benefit from India's growth trajectory over the medium- to long-term.

¹¹⁰ Infrastructure Leasing & Financial Services Limited has been plagued by unmanageable levels of debt, while IDFC is in the process of transitioning into a commercial bank. While IFCL is still a lending institution operating in the infrastructure sector, it is project-financing oriented and thus, not comparable to NIIF which operates as an equity fund.



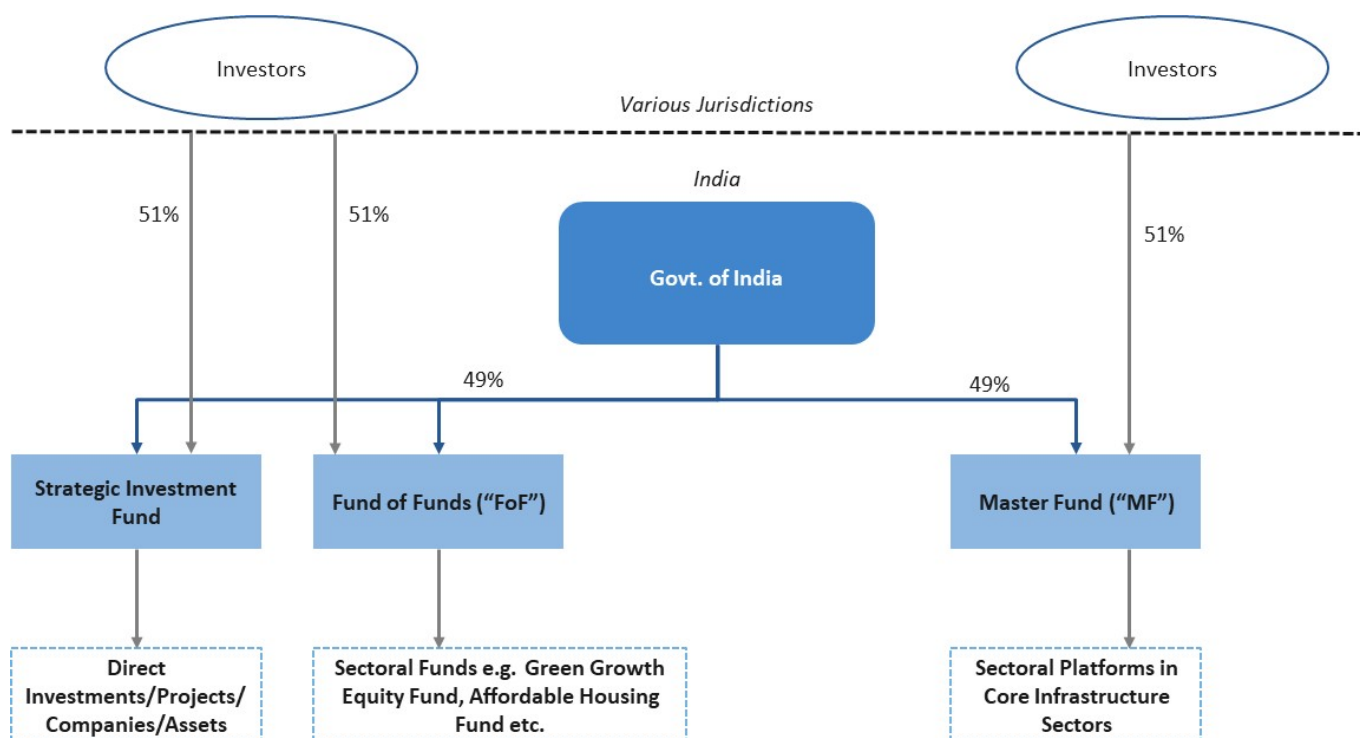


F.3. INSTITUTIONAL STRUCTURE

NIIF is set up as a trust, with the funds created by NIIF registered as Alternative Investment Funds with the Securities and Exchange Board of India.

The proposed corpus of NIIF is USD 6 billion. Initially, the Government of India had a 100 percent ownership of NIIF, however the Government's ownership now stands at 49 percent. NIIF is mandated to raise third-party capital, and it is envisaged that ultimately the Government's contribution to the corporates of each of the three funds will reach 49 percent. It is planned for NIIF to raise funds from international as well as domestic institutional investors, including sovereign wealth funds, multilateral institutions, insurance and pension funds, endowments, etc. The structure and composition of NIIF is illustrated in Figure F.1 below.

Figure F.1 – Structure and composition of NIIF



Source: NIIF

F.4. GOVERNANCE STRUCTURE

The activities of NIIF are overseen by a Governing Council which is headed by the Finance Minister and has representatives from the Government of India, as well as eminent economists and professionals in the infrastructure and finance space. The Council provides strategic guidance and mentorship to the NIIF management. The Governing Council played a key role during the run up to formation of the NIIF. It now meets annually but does not interact on day-to-day basis with the NIIF.

NIIF Limited (NIIFL) acts as the Investment Manager of the NIIF and is responsible for the day-to-day operations of the funds. NIIFL has a team of 40 professionals based out of Mumbai and Delhi. The team has international as well as domestic experience which includes background in infrastructure, including investing and operating experience. The funds under NIIF are overseen by an investment committee, which comprises the CEO of NIIF, Sujoy Bose, and NIIFL executives. There are, notably, no representatives on the investment



committee from either the government or investors, to ensure objective decision-making in line with the global fund management industry.

Project origination is through deals in the market, as well as deals which are officially tendered by the government. In addition, NIIF informally collaborates with the government to explore new opportunities; and is currently in the processing of developing two to three innovative concepts in the transport sector. As these are in the early stages of development, there is no further detail available in the public domain.

Project approval is typically based on commercially viable, risk-adjusted returns.

F.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The capital structure of NIIF is equity only, with a capitalisation target of USD 6 billion. There are no plans to raise debt or solicit loans at the fund level, with NIIF conceptualised as a pure equity fund.

There are two key sources of funds: (i) government budgetary funds to each Alternative Investment Fund established under NIIF (the government has committed USD 3 billion, to be drawn down as appropriate); and (ii) equity participation from strategic anchor partners such as overseas sovereign, quasi-sovereign, multilateral and/or bilateral investors, as well as contributions from domestic financial institutions. NIIF will also solicit funds from domestic pension and provident funds and National Small Savings Fund.

NIIF is currently raising capital from domestic and international institutional investors:

- **The Master Fund** has a target size of approximately USD 2.1 billion. It achieved its First Close in October 2017 with investments from the government (49 percent of the fund), as well as from Abu Dhabi Investment Authority (which has the largest share with approximately USD 1 billion committed in total investments, of which USD 250 million will be in the form of direct investments) and from four domestic institutional investors – ICICI Bank, HDFC Group, Kotak Mahindra Life Insurance and Axis Bank. The second close of the fund in October 2018 saw Temasek – Singapore's Sovereign Wealth Fund – come on board with USD 400 million committed across the Master Fund through both direct and co-investments. All investors come on board the Master Fund on a full equity-risk basis.
- **The Fund of Funds** has a broad target of USD 1 billion, with a multi-tiered basis of partnership. The initial closing of the Fund of Funds is US 600 million, of which the government will provide USD 500 million and AIIB will provide USD 100 million in Phase I, with another USD 100 million from AIIB in the future. Recently, the UK Government also made a direct investment in the Fund of Funds to create the Green Growth Equity Fund, further details of which are provided below. NIIF's Fund of Funds has recently partnered with HDFC in an investment platform for mid-income and affordable housing in India.

F.6. FINANCING ACTIVITIES

NIIF is a pure equity investor.

- **The NIIF Master Fund** invested with DP World to create Hindustan Infralog Private Limited (HIPL), a large-scale platform in ports, terminals, transportation and logistics businesses in India. The platform will invest up to USD 3 billion of equity to acquire assets and develop projects in the sector. HIPL has recently acquired a 90 percent stake in Continental Warehousing Corporation, a multi-modal logistics player in India; and will continue to acquire assets and develop projects in the sector. The NIIF Master Fund also participated in the first NHA Toll-Operate-Transfer (TOT) bid for nine toll roads in partnership with Roadis, a PSP owned global roads platform.





- **The NIIF Fund of Funds** has made its first investment, Green Growth Equity Fund, which will invest in renewable energy, clean transportation, water, sanitation and waste management. The USD 750 million equity fund is anchored by NIIF in partnership with the UK Government, with both the UK Government and Government of India (through NIIF) contributing GBP 120 million to the fund. EverSource Capital, a joint venture between Everstone Group and Lightsource BP was selected as the fund manager for the Green Growth Equity Fund following an international selection process. Everstone Group is a premier multi-asset investment firm and Lightsource BP is a global market leader in renewable energy development and management.

The second investment of approximately USD 95 million for NIIF's Fund of Funds has been in an Affordable Housing Fund managed by HDFC, which is a mortgage financing institution in the country. The HDFC Fund provides mezzanine finance to developers of mid-income and affordable urban housing projects.

- **The NIIF Strategic Investments Fund** has made its first investment recently, NIIF has announced the acquisition of an Infrastructure Debt Fund owned by IDFC. The Debt Fund lends to operating infrastructure projects, and thereby enables the original project financiers to recycle their capital following the commencement of operations. This is the first control transaction for NIIF and is currently in the process of seeking regulatory approvals and completing customary closing conditions.

F.7. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

Consultations with NIIF suggest that NIIF collaborates with the Government of India at a policy-level and provides input towards developing the infrastructure pipeline in India. On this basis, NIIF is set to play a key role in all stages, from project design through to implementation, of innovative concepts in core infrastructure sectors. However, NIIF has no formal right to any infrastructure project that the Government of India may consider developing, nor obligations to invest in policy-driven projects.

F.8. PERFORMANCE MONITORING

The investment committee has a beginning-to-end role in managing the investment portfolio and companies under the investment platform. Structures are also built in to ensure performance monitoring, such as the establishment of monitoring committee of Hindustan Infralog which will hold regular board meetings, etc. As NIIF is still in early stages of its own development, lessons will be iteratively drawn going forward to feed into future activities.

F.9. KEY LESSONS LEARNED

NIIF's structure has implicitly addressed key risks/issues facing global investors. More specifically, with a USD 6 billion corpus, NIIF is the largest infrastructure-focused fund in the Indian market and as such, is in a position to provide scale to investors as well as acting as a strong counterparty to work with as a partner.

Further, funds are designed with a long horizon (15 – 20 years on average), thereby circumventing the short-term outlook traditionally taken by private equity firms looking to invest in infrastructure, while also enabling projects to ride through business cycles. The Strategic Investment Fund will have an even longer-term horizon of 20-25 years, with a focus on large projects that will benefit the country on a large-scale.



The distinctive investment mandates of the NIIF also ensures that, combined, the different investment platforms comprehensively target key infrastructure opportunities – for instance, while the Master Fund is focused on ‘larger-ticket’ projects in core infrastructure sectors such as ports and roads, the Fund of Funds has a mid-market strategy, including a focus on agriculture and green infrastructure as exemplified by the recent establishment of the Green Growth Equity Fund.

Most interestingly, NIIF is able to act as a bridge between the government and the private sector on policy-level issues. Yet key decision-making remains at an arms-length from the government as the main investment committee has no government representation.





ANNEX G: INDONESIA - PT SARANA MULTI INFRASTRUKTUR

G.1. BACKGROUND AND ESTABLISHMENT

Established in 2009, PT SMI aims to catalyse infrastructure development in Indonesia by providing funded and contingent financing products to projects that are largely originated in the public sector but financed by the private sector. As of the date of this Guidance Note, PT SMI has no subsidiaries but a 30 percent share in the PT Indonesia Infrastructure Finance (PT IIF), a private sector focused joint venture started in 2010.

The establishment of PT SMI came at a time when the Government of Indonesia was looking to significantly increase infrastructure investment, including from the private sector, after several years of low investment. For example, after the Asian financial crisis of 1997/98, infrastructure investment as a proportion of GDP fell from seven percent to just over two percent in 2001, and by 2006 had only reached slightly higher than three percent.¹¹¹ The Government of Indonesia aimed to increase infrastructure investment to five percent of GDP per year over the 2010 to 2014 period, or IDR 1,800 trillion (USD 128 billion), including IDR 365 trillion (USD 26 billion) from the private sector. However, an analysis of the financial sector in Indonesia by the World Bank¹¹² showed that the structure of bank liabilities in Indonesia, with more than 85 percent of deposits having maturities of less than one month, meant that providing long-term loans to infrastructure projects was not possible for banks. In addition, the asset bases of institutional investors were relatively small compared to overall financial assets, and such institutions were averse to lending to long-term illiquid assets, preferring investment in short-term instruments and government bonds.

Given these low levels of spending and the limited ability of the private sector to invest in infrastructure projects, the government initiated a range of legal, regulatory and institutional reforms aimed at catalysing investment in infrastructure. Prior to these reforms, the main government entity responsible for planning and supporting the development of infrastructure in the country was the National Development Planning Ministry (known as Bappenas). However, the government reforms expanded the role of the Ministry of Finance (MoF) in supporting infrastructure development, which included establishing PT SMI to act as a publicly-owned centre of excellence for developing and financing infrastructure projects and assigning ownership of PT SMI to the MoF. In addition to establishing PT SMI, the government also set up a number of funds across government as arms-length institutions. This included the establishment of a revolving fund to support land acquisition within the Ministry of Public Works; a guarantee fund within the MoF; and a project development facility with the support of the Asian Development Bank (ADB) and the Government of the Netherlands within the Ministry of Public Works.¹¹³

The Indonesia Infrastructure Guarantee Fund (IIGF) under the MoF is a 100 percent government owned, independent state enterprise that was established in December 2009, under Government Regulation No. 35/2009.¹¹⁴ It is the 'single window' for guarantees to infrastructure PPPs in Indonesia. To be eligible, such PPPs have to correspond to the definition given in Presidential Regulation No. 38 of 2015. The Indonesia

¹¹¹ World Bank (2009), Indonesia Infrastructure Financing Facility – Project Appraisal Document. In the decade or so after the crash, there was minimum infrastructure project finance activity in Indonesia.

¹¹² See Footnote 112.

¹¹³ More recently, there is a Public Service Agency within the MoF, called Lembaga Manajemen Aset Negara (LMAN) or State Asset Management Agency, act as a land-bank responsible for, among other, procuring land for national strategic projects.

¹¹⁴ See <http://www.iigf.co.id/en/>, for annual reports and supporting documents.



Infrastructure Guarantee Fund is a fund, not an implementing agency, and it benefits from World Bank technical and financial support.

As reported in its Annual Report for 2017, the Indonesia Infrastructure Guarantee Fund had established a portfolio of 15 infrastructure PPP guarantees, with a total project value of IDR 178.9 trillion (USD 12.6 billion) and a guarantee exposure of IDR 35.6 trillion (USD 249 million).

As of 2017, PT SMI had made more than IDR 52 trillion (USD 370 million) in investment and financing commitments, and had supported 125 projects with commercial financing for private sector entities, municipal lending, advisory services, project development support, sustainable financing and sharia law financing.¹¹⁵

PT IIF is substantially smaller. In 2017, it had made IDR 14.5 trillion (USD 103 million) in gross investment commitments, had assets of IDR 13.0 trillion (USD 921 million) and a debt to equity multiplier of 4.8.¹¹⁶ Its main mandate is financing and investment of viable infrastructure projects in Indonesia. While there is some overlap with PT SMI, the two entities seek to be complementary; for example, for a PPP project where PT SMI will undertake project preparation and advise on the government side, PT IIF will take a lead arranging the financing or advisory services to the bidders in the transaction.

G.2. MANDATE

PT SMI is mandated to act as a catalyst in fostering long-term infrastructure financing in Indonesia. The mandate focuses on two main objectives, specifically (i) optimising the social and economic benefits of infrastructure for communities; and (ii) supporting the achievement of the Sustainable Development Goals, including supporting climate change mitigation efforts. The PT SMI mandate has been expanded to include elements of local government finance.

PT IIF had a similar mandate to act as a catalyst but is more specialised, and is seeking to network opportunities within private sector sponsor networks as well to develop domestic risk and credit expertise based only on commercial infrastructure projects. It also seeks to promote capital market development.

G.3. INSTITUTIONAL STRUCTURE

PT SMI was established as a non-bank financial institution that is 100 percent owned by the Government of Indonesia. Specifically, it is a limited liability company (SOE) that comes directly under the jurisdiction of the MoF. The purpose of PT SMI is to act specifically in the interest of the government in pursuing its objectives with regards to infrastructure development. PT IIF is a private non-bank financial institution and also regulated by the MoF. Its shareholding is: PT SMI 30 percent; IFC 19.99 percent; ADB 19.99 percent; and DEG 15.12 percent; plus Sumitomo Mitsui Banking Corporation with 14.9 percent. PT IIF has some 85 permanent staff compared to PT SMI's 260.

G.4. GOVERNANCE STRUCTURE

As the principal shareholder, the MoF holds the highest authority in the PT SMI and is central to making formal decisions regarding government investment in it. The nominee of the MoF participates in the

¹¹⁵ PT SMI, Annual Report. (2017).

¹¹⁶ PT IIF, Annual Report. (2017).





company's General Shareholders' Meeting, which involves activities such as agreeing annual budgets and business plans, approving long-term plans and disbursements of loans to the company.

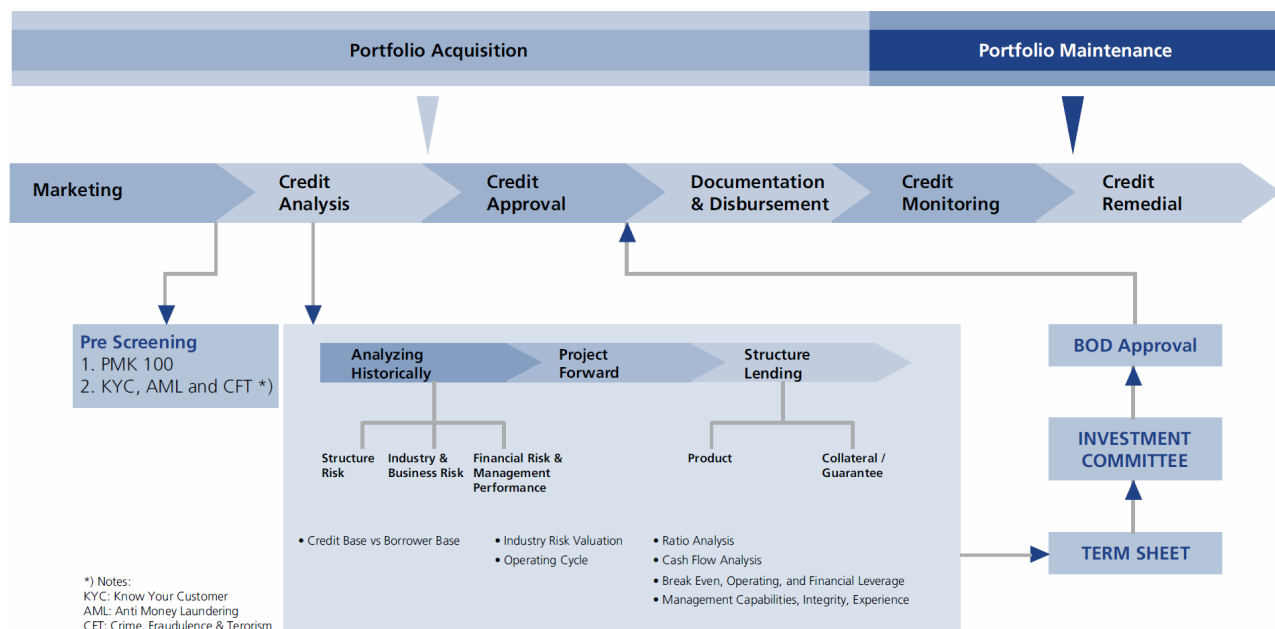
The overall governance of PT SMI is undertaken by a Board of Commissioners which comprises individuals from several key ministries, including the MoF, as well as independent commissioners, all of whom are appointed by the Minister of Finance.¹¹⁷ The role of the Board of Commissioners is to supervise and advise the Board of Directors on strategic issues and ensure that shareholders' interests (i.e. the interests of the Government of Indonesia) are protected. Along with the Board of Directors, the Board of Commissioners also ensures that the long-run sustainability of PT SMI is maintained.

As regards day-to-day management, the company is run by a Board of Directors, which includes a President Director (or CEO) and individuals responsible for PT SMI's different areas of the business, including Finance & Investment, Project Development & Advisory, Operation & Finance and Risk Management. The Board of Directors is also appointed by the Minister of Finance, suggesting some degree of political involvement in determining leadership positions.

As regards approvals for financing of projects, PT SMI follows general principles with regard to appraisal and risk management, and the specific process that is followed for determining these is outlined below. This shows that the initial credit analysis is undertaken by the internal team, before being presented to the Investment/Financing Committee, which will provide preliminary approval before final approval is given to the Board of Directors (whose members also form part of the Investment/Financing Committee).

PT IIF is governed with the same two-tier structure; at least three of the Commissioners are independents, four from joint-venture partners; and two from PT SMI/the MoF.

Figure G.1 – PT SMI approval process for financing transactions



Source: PT SMI (2009)

With regards to its investment criteria, PT SMI is guided by Ministry of Finance Regulation Number 100/PMK.02/2009, which stipulates that the company can support the following activities: (i) direct

¹¹⁷ There are five Commissioners, of which two are independent.



infrastructure lending; (ii) refinancing; (iii) subordinated loans; (iv) credit enhancement (including guarantees); (v) equity investment; (vi) swap market transactions; (vii) advisory services; and (viii) provision of subsidiary facilities in connection with supporting infrastructure financing on approval of the Minister of Finance. As regards sectors, those which PT SMI is able to support include: (i) transport (roads, rail, ports and other maritime infrastructure and airports); (ii) water and wastewater; (iii) energy (including electricity, oil and gas); (iv) telecoms; and (v) other sectors on a specific basis, with approval from the Minister of Finance.

G.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

As of 2017, PT SMI's capital structure consisted of equity and debt from a range of financiers, as detailed below.

G.5.1. Equity

Total equity in the company amounted to more than IDR 34 trillion (USD 240 million), which has all been provided by the Government of Indonesia as the sole shareholder. The Annual Accounts list this as paid-in, with an additional IDR 2 trillion (USD 140 million) received in 2017. At end 2017, total assets were listed IDR 55.4 trillion (USD 394 million) and liabilities at IDR 21.1 trillion (USD 150 million).

G.5.2. Debt

Debt in PT SMI totalled more than IDR 20 trillion (USD 150 million), and has been provided from the following sources:

- **Loans from private sector banks and other financial institutions**, which amounted to IDR 3.7 trillion (USD 250 million). Lenders included UOB Indonesia, the Bank of Tokyo Mitsubishi, Bank Mandiri and AFD.
- **Loans from the Government of Indonesia**. These represent credits provided by the ADB and the World Bank, which have provided loans to the government on a sovereign basis to on-lend through PT SMI to its joint venture PT IIF. The total amount of outstanding loans was IDR 2.6 trillion (USD 180 million). Significant additional loans from ADB and World Bank were scheduled for 2018.
- **Bonds**: PT SMI has been active in issuing bonds in the Indonesia capital market, and as of 2017, had net outstanding debt securities of more than IDR 14 trillion (USD 100 million) -- for further details see below.

Total debt and other non-equity liabilities amounted to IDR 21 trillion (USD 140 million), suggesting a debt: equity ratio of 38:62, which is relatively low by comparison to other institutions and is likely to reflect PT SMI being a relatively new institution.

With regards to its bond issuances, the company aims to issue IDR 30 trillion (USD 213 million) as part of its program to attract institutional and other private sector local currency finance to the country's infrastructure sector. PT SMI has issued bonds in the following tranches:

- **First issuance**: In 2014, the company successfully raised IDR 1 trillion (USD 67 million) in two tranches, (i) a three-year IDR 100 billion (USD 6.7 million) tranche with a coupon of 9.6 percent; and (ii) a five-year IDR 900 billion (USD 61 million) tranche with a coupon of 10 percent.

Following this, the company issued significantly larger bonds in the capital market in 2016 and 2017. This was undertaken in two phases, as follows:





- **Phase I:** In 2016, the company issued IDR 5 trillion (USD 340 million), which comprised (i) IDR 2.3 trillion (USD 160 million) of three-year bonds with a coupon of 7.85 percent; (ii) IDR 1.3 trillion (USD 88 million) of five-year bonds with a coupon of 8.2 percent; (iii) IDR 700 billion (USD 74 million) of ten-year bonds with a coupon of 8.65 percent; and (iv) IDR 674 billion (USD 45 million) of 15-year bonds with a coupon of 8.9 percent.
- **Phase II:** In 2017, the company issued an additional IDR 7 trillion (USD 470 million) of bonds, which comprised (i) a one-year IDR 1.2 trillion (USD 81 million) tranche with a coupon of 6.15 percent; (ii) a three-year IDR 4.5 trillion (USD 300 million) tranche with a coupon of 7.4 percent; and (iii) a five-year IDR 1.35 trillion (USD 91 million) tranche with a coupon of 7.6 percent.

While the maturities of these bonds are relatively short, with only a small proportion being greater than ten years, this does suggest that the government is making good progress on achieving its objectives of attracting local institutional investment into the market and developing infrastructure as an asset class.

As part of its issuances, PT SMI has been able to achieve relatively high national credit ratings of AAA from both PEFINDO and Fitch, which has enabled it to attract institutional finance on relatively favourable terms, given that it has only been around 100bps above government bond issuances (in the case of three-year bonds). Such ratings are driven by the support provided by the Government of Indonesia, plus the relatively low level of gearing of the company at present relative to equity injections. As a non-bank financial institution, PT SMI is limited in the level of gearing it can operate and, in its 2017 Annual Report, there is reference to transition to the Indonesian Development Financing Institution (Lembaga Pembiayaan Pembangunan Indonesia, LPPI), which may signal an aspiration to higher gearing.

In addition to these conventional issuances, in 2018 PT SMI also issued an IDR 1 trillion (USD 67 million) sukuk bond, as well as green bonds in Indonesia (further details of this are provided in the subsection below). It also has a sharia law finance division.

PT IIF has total assets of IDR 13.0 trillion (USD 921 million) and equity of IDR 2.2 trillion (USD 141 million), reported as all paid-in. It is also rated AAA by Fitch. Currently, its main product is senior debt and it does not yet take many equity or other higher risk positions, although it aspires to do so as its capacity and expertise increases.

G.6. FINANCING ACTIVITIES

PT SMI is an example of an institution with a sole focus on infrastructure. As regards products, the organisation provides a number of services based around three core business pillars: (i) Financing and Investment; (ii) Advisory Services; and (iii) Project Development.

PT SMI's Financing and Investment service line is its main area of business, which includes the provision of senior debt and equity financing. In addition to this, PT SMI can also provide relatively boutique services such as sharia-law financing, 'sustainable financing' and cash deficiency support. In 2017, PT SMI earned more than IDR 2.4 trillion (USD 160 million) from its lending activities and IDR 677 billion (USD 45 million) from its investment activities, either PT SMI itself or PT IIF. This has increased from IDR 586 billion (USD 40 million) and IDR 141 billion (USD 9.6 million) respectively, demonstrating the huge growth in business activities in recent years. These revenues dwarf its earnings from its Advisory Services (IDR 6 billion, or USD 0.4 million) and project development (IDR 21 billion, or USD 1.4 million). National priority PPP projects may be assigned to the PT SMI for project development and transactions support – to date, a total of 12 such projects have been closed.



As with other infrastructure financing organisations, senior debt accounts for the majority of financing provided by PT SMI, comprising more than 70 percent in 2017.^{118, 119} Regarding sectors, electricity and road infrastructure accounted for more than 60 percent of total outstanding financing. In addition to supporting private sector and PPP projects, PT SMI also supported 18 projects for local government, with commitments totalling IDR 2.6 trillion (USD 184 million), primarily for toll road and bridge projects. As noted above, 12 PPP projects have been closed by PT SMI.

The majority of PT SMI's equity portfolio is provided to its joint venture PT IIF, and a significant proportion of these resources were lent to the government by the World Bank and ADB, with PT SMI essentially acting as an umbrella investment vehicle. While the mandate is similar, PT IIF deals only with commercial projects and, predominantly, financing activities, although it also offers some fee-based services such as public sector and private sector advisory services. While PT SMI is positioned as advisor and project developer/transaction adviser to government, PT IIF is more commercial and private sector facing, and seeks additionality through crowding-in DFI and other international sources by lead arrangements or other convening characteristics. Both see capital market development as a strategic objective, and both see their roles being increasingly clarified by business and market maturity.

As of 2017, PT SMI's interest in PT IIF was valued at IDR 600 billion (USD 42 million), which is significantly greater than its other equity investments. These include a five percent and a 10.67 percent share in two toll road projects.

A particularly interesting product that has been provided by PT SMI is through cash deficiency support. This support is similar to a bridge financing loan, in that funds are provided to cover payments to other lenders before projects begin to make revenues. Examples of where this form of support has been used include a number of toll road projects, although PT SMI is looking to significantly expand this product into other sectors. It is not clear the degree of concession involved but some is likely to exist and justified in accelerating market closure.

Further details of PT SMI's Sustainable Financing, Advisory Services and Project Development business lines are provided below.

G.7. GREEN FINANCE

As mentioned previously, in 2018 PT SMI issued IDR 1 trillion (USD 70 million) worth of green bonds, which was the first of its kind in Indonesia and the first issuance as part of an IDR 3 trillion (USD 210 million) program to raise finance for green infrastructure projects. In particular, the proceeds from these bonds will be ring-fenced to finance projects in: (i) renewable energy; (ii) energy efficiency; (iii) sustainable pollution management and prevention; (iv) sustainable natural resources and land use management; (v) clean transportation; and (vi) sustainable water and sewerage management. As part of these issuances, PT SMI received technical support from the World Bank and the Center for International Climate Research-Oslo, with funding support provided by the Swiss State Secretariat for Economic Affairs and by Global Affairs Canada.

In addition to issuing green bonds, in 2017, PT SMI established its Sustainable Financing division, which focuses on providing financing, grants and technical assistance support to projects with a focus on climate change

¹¹⁸ The original eight sectors have recently been expanded to include tourism.

¹¹⁹ Working capital makes up 13 percent and subordinated loans 11 percent; promoter financing, sharia and bridging loans were small.





mitigation, improving environmental quality and supporting low carbon development. This includes projects in wind, solar, biomass and energy efficiency, as well as the fund management services PT SMI provides in the geothermal sector, in particular the recently established Geothermal Infrastructure Financing Fund. This fund aims to provide resources for exploratory drilling and data collection on key sites so that projects can be developed faster and with less risk downstream.

The Sustainable Financing division has received concessional and grant funds from a number of international partners, including the Green Climate Fund, GIZ from Germany, AFD, UNDP, the World Bank's Clean Technology Fund and the Global Environment Facility (GEF), while the proceeds from its green bonds will also be used to on-lend to projects.

While financing of renewable energy projects has formed a core part of PT SMI's business activities, it intends to provide greater support to project sponsors with quasi-equity products, given that, according to PT SMI, one of the major challenges facing the sector is the lack of suitable sponsors developing projects. In 2017, PT SMI sharply increased the value of equity investments, particularly in project sponsors and early stage preparation. PT SMI also tried to innovate with early shareholder loans and flexible, redeemable grant support or loans.

Sharia law activities included syndication via the Sharia bank network, raising IDR 4.3 trillion (USD 297 million) for the national power company; about a quarter of this was attributed to PT SMI.

G.8. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

G.8.1. Advisory Services

PT SMI's Advisory Services arm includes its provision of financial and investment advisory and providing financial arrangement services. This includes acting as a syndicator for infrastructure transactions, as well as advising regional governments and other SOEs on financing aspects of infrastructure activities. The company has also provided advisory support to local private sector banks that traditionally have had less capacity to appraise infrastructure transactions. In 2017, projects that received advisory support included power plants being developed by the state-owned mining company and the Kuala Tanjung Port. Going forward, the Advisory Services division aims to focus its services on strategically important projects, particularly in transport, utilities and water sector.

G.8.2. Project development

PT SMI's project development line refers to services it provides more upstream in the project development cycle, including PPP pipeline development, feasibility studies, support for municipal financing projects, as well as government technical assistance and capacity building related to infrastructure development. Examples of activities it has supported included initial preparation activities for PPP projects, such as the West Semarang PPP project in 2017 where it had taken the project to the transaction stage. As part of its support for project development, PT SMI has also established a project development facility (PDF) which it can use to obtain resources to support these activities.

G.9. PERFORMANCE MONITORING

PT SMI tracks a number of financial metrics as part of its corporate risk management activities to ensure financial sustainability. This includes monitoring return on investments and overall equity, as well as



productivity measures. With regards to the former, it is noteworthy that PT SMI has been making returns on investment of around three percent on average over the past five years, which is low for an organisation operating commercially. However, given that the organisation is meant to be playing a catalytic role, it could be argued that this is a reasonable return.

In addition, PT SMI also tracks the extent to which it has support infrastructure outputs across the different sectors. More widely, the company also tracks how its activities impact economic output, including gross value-added, its impact on household income and its impact on employment, all of which feed into its annual reporting process.

In 2017 the return on assets was 2.29 percent and on equity, 4.77 percent. Non-performing loans were 1.9 percent in the same year.

G.10. KEY LESSONS LEARNED

Despite it being a relatively new organisation, PT SMI has provided extensive support to infrastructure projects across Indonesia, offering a range of traditional and more innovative forms of support. This has been a direct implementation of government policy, reflecting national and also regional/local government priorities; these are increasingly clustered in networks or corridors. The move to add local government financing and tourism underlines this. The result is a more systematic and programmatic approach. Both PT SMI and PT IIF offer advisory services; the former more upstream and the latter more downstream. Capacity and knowledge building is a feature particularly of PT SMI.

A major aim has been to accelerate the financial close of projects, with PT SMI seen as a central and systematic enabler or catalyst; this relies on strong public working relationships both with the MoF and other line Ministries. This direct MoF sponsorship appears to have been a major positive factor. As has been the willingness to address long-term capital and credit markets issues through market-based incremental regulatory and policy mechanisms. There appears to be the start of a general movement away from a senior debt-only model to one which offers other flexible products and robust project preparation to de-risk transactions and build longer, higher quality pipelines.

Particularly noteworthy activities include its ability to offer local currency financing to infrastructure projects on relatively long tenors, which was previously lacking following the Asian Financial Crisis. Lack of local currency financing has been a key issue across a range of emerging markets, yet PT SMI has been able to utilise the support from the Government of Indonesia to attract local sources of institutional capital to finance its operations. At the same time, the tenors of such bond issuances have been relatively short to date – but are now moving to 10/12 years - while raising interest from institutional investors. In the long-term, PT SMI will likely need to raise capital with longer tenors in order to reduce its reliance on central government equity support to finance its operations.

PT SMI is also an interesting example of how infrastructure banks can play a role that goes beyond financing transactions, as it has played an important role in project development activities both upstream and further downstream -- although the extent to which it is able to offer such support is likely to be a function of it being fully government-owned, in that such activities may not be possible for institutions that have significantly higher levels of private sector equity or debt in their capital structure.

PT SMI also provides an interesting example of how green financing can form part of a NIB portfolio, and it will be interesting to see the implications of the recent capital raising activities on PT SMI's deal flow for green and sustainable infrastructure projects.





PT IIF capitalisation is relatively low compared to the average ticket size of national infrastructure projects, and it is clear that impact of the Asian Financial Crisis in 1997/98 still constrains the appetite for project finance risks and modalities. Nevertheless, the drivers of limited fiscal space and heavy public debt continue to drive the need to leverage diverse funding sources and to crowd-in the private sector. The lessons of capital market development in both traditional and non-traditional bonds seem positive and tenors have extended, plus commercial bank and other institutional interest has increased, as demonstrated by the PT SMI-sponsored infrastructure stock index.

The need for innovation and flexibility in both project packaging and product design is evident; an example being the cash deficiency support bridging product and the move to developer equity and early stage loans. The questions on the overall value added of PT SMI and PT IIF need more evidence and analysis; this includes the different roles of PT IIF and PT SMI going forward and the degree of overlap that might result.



ANNEX H: JAPAN – DEVELOPMENT BANK OF JAPAN (DBJ)

H.1. BACKGROUND AND ESTABLISHMENT

The Development Bank of Japan (DBJ) was originally established in 1951 to provide finance to and support for the development of important domestic industries (coal, steel, etc.) as part of the post-war recovery. It also had a focus on providing long-term credit to infrastructure projects, particularly energy and power supply infrastructure, and promoting balanced interregional development. It was during this early period in the DBJ history that the portfolio was most concentrated in infrastructure.

During the 1970s, 80s and 90s, the DBJ became more concerned with sustainability objectives and its support was extended to new projects such as wind power projects and waste treatment facilities. Along with the deregulation of important utilities sectors, the DBJ began to apply modern project finance to support private investment in infrastructure.

In 1999, the existing DBJ and another development bank (Hokkaido-Tohoku DFPC) were combined to form a new Development Bank of Japan. The new DBJ was given a mandate to support community development, environmental conservation and sustainability, and technological and economic growth. After the financial crisis in 2008, the DBJ was dissolved and re-established again under the Development Bank of Japan Inc. Act. The Act is meant to provide for the eventual privatisation of DBJ – though this ambition has been stalled due to the global financial crisis and the Fukushima disaster. In 2015, legislation was passed that mandates the DBJ to utilise its investment and loan functions to take all possible measures to supply funds to deal with large-scale disasters and economic crises, to promote the supply of growth capital so as to revitalise regional economies, and to reinforce the competitiveness of enterprises.

DBJ continues to work toward the development and advancement of Japan's economy. It is supporting upgrades and improvements to social, transportation, and information infrastructure, and other essential utilities, but this is only a part of its overall activities, which are primarily focused on financing small businesses.¹²⁰

H.2. MANDATE

DBJ's mandate is to “conduct business activities utilizing the methods of integrated investment and loan services and other sophisticated financial methodologies, thereby contributing to the smooth supply of finance to those who need long-term funding, as well as to the sophistication of financial functions”.¹²¹

H.3. INSTITUTIONAL STRUCTURE

DBJ is wholly owned and regulated by the Japanese Ministry of Finance (MoF). The Development Bank of Japan Inc Act 2008 set an ambition to privatise the bank, but current government policy appears to have put these plans on hold due to concerns around wider economic conditions, the provision of long-term credit to small businesses, and the bank's crisis response objectives.

Although the DBJ has been set up to act commercially (for example, it earns additional income through arrangement, asset management, M&A and other advisory services) and to conduct operations at arms-length

¹²⁰ Development Bank of Japan. About DBJ/Timeline. [Online]. <<https://www.dbj.jp/en/ir/about/outline.html>>.

¹²¹ Development Bank of Japan. Annual Report & CSR Report. (July 2016) [Online]. <https://www.dbj.jp/en/pdf/CSR_disclo/2016/about.pdf>. In this context we interpret “sophistication” to mean innovation in the provision of financial products to meet the diverse capital needs of the market.





from government, its ownership, legal and regulatory structure clearly reflects that the bank is a tool of public policy. The government is able to exercise a degree of control over the bank – for example DBJ's funding and bond issuance policies need to be approved by the MoF. The DBJ is required to adhere to the Fourth Medium-Term Management Plan, set out by the Japanese government, and maintain a CET I ratio of at least 14 percent.¹²²

H.4. GOVERNANCE STRUCTURE

The DBJ is governed by a Board of Directors who are appointed/dismissed by the MoF.¹²³ The Board is supported by audit and supervisory committees, in addition to an Advisory Board and a Special Investment Operations Monitoring Board comprising outside experts.

Other matters which require the authorisation of the finance minister include amendments to the DBJ Articles of Incorporation, disposition of surplus funds, mergers and corporate splits, and basic policy on business plans and fund procurement.

The Executive Committee (directors who are also appointed/dismissed by the MoF) manages day-to-day operations. The committee is supported by a range of decision-making and deliberative committees, including the Committee on Investment and Loan Decisions, the Advisory Panel on Investments and Loans, and the General Risk Management Committee.¹²⁴

H.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The DBJ has an 82:18 debt to equity capital structure. As of 2017, the bank had JPY 2.8 trillion (USD 25 billion) in equity and JPY 12.6 trillion (USD 113 billion) in debentures, borrowed money and corporate bonds.¹²⁵

The DBJ procures long-term funds through the issuance of corporate bonds and the Fiscal Investment and Loan Program (a type of Japanese government bond that provides long-term, low interest funds). The DBJ can issue both government guaranteed and non-guaranteed bonds. Over the last ten years, the DBJ has issued JPY 22.4 trillion (USD 20 billion) in non-guaranteed bonds, JPY 1.6 trillion (USD 1.4 billion) in Yen-denominated government-guaranteed bonds and a further USD 11.9 billion in government-guaranteed international bonds.

Over the last ten years, the DBJ has issued around 100 corporate bonds denominated in Japanese Yen for maturities between three and 30 years. Issue amounts typically range from JPY 10 to JPY 30 billion (USD 90 to USD 270 million), although in some instances the amount has been as large as JPY 60 billion (USD 540 million). Over the same period, it has issued around 70 Japanese government-guaranteed bonds. Maturities are typically shorter (between three and 10 years) but amounts raised are much larger (between JPY 20 to JPY 100 billion, or USD 60 to USD 900 million).

The DBJ has also issued so-called SRI bonds which are created to raise capital for new and existing projects with environmental and social benefits. They are exactly the same as DBJ's senior unsecured non-guaranteed

¹²² Development Bank of Japan. Fourth Medium-Term Management Plan. (May 2017). [Online]. <<https://www.dbj.jp/en/pdf/ir/about/plan/plan4.pdf>>.

¹²³ Eunomia. Comparative Study of National Infrastructure Financing Institutions. (June 2018). [Online]. <https://www.nic.org.uk/wp-content/uploads/Eunomia-NIC-FinalReport-Slide-Deck_v1.0-050718.pdf>

¹²⁴ Development Bank of Japan. Annual Report & CSR Report. (July 2016). [Online]. <https://www.dbj.jp/en/pdf/CSR_disclo/2016/about.pdf>.

¹²⁵ Development Bank of Japan. Annual Report. (July 2017). [Online]. <https://www.dbj.jp/en/pdf/CSR_disclo/2017/02.pdf>



bonds but are subject to a formal internal process that is linked to DBJ's lending operations. To date, the DBJ has issued four SRI bonds, raising between EUR 250 million and USD 1 billion at three to five-year maturities.

DBJ's capital plan for 2018 involves issuing an estimated JPY 2.47 trillion (USD 22 billion) in corporate bonds, including approximately JPY 350 billion (USD 3.1 billion) in Japanese government-guaranteed bonds.

Because of the strong support provided by the Japanese government, DBJ currently has an 'upper-medium' credit rating: A1 (Moody's), A+ (S&P), AA (R&I), AAA (JCR). Moody's gives the same rating to DBJ's government-guaranteed bonds as its corporate bonds, but S&P rates its corporate bonds one notch below (A).

H.6. FINANCING ACTIVITIES

The DBJ offers equity, debt and guarantee products. It also provides advisory services.¹²⁶ It usually acts as a lead arranger in putting together project finance packages, alongside offering senior and mezzanine loans. Over time, the DBJ has built up significant experience in energy and infrastructure projects. Projects supported to date include:

- **Japan Wind Development Fund.** The DBJ launched a new fund jointly established with Japan Wind Development Co to invest in wind power projects in Japan. As at March 2017, the fund had acquired 15 wind farms across the country. A group of Japanese lenders recently closed a JPY 24 billion (USD 216 million) project finance facility which was used to refinance the loan provided by the DBJ to acquire wind assets.¹²⁷
- **Haneda Airport International Passenger Terminal.** The expansion of Haneda Airport's international passenger terminal was undertaken as a private finance initiative (PFI) project. DBJ, in collaboration with Mizuho and Mitsubishi UFJ, acted as the lead arranger of the project finance.¹²⁸
- **Fukuoka Clean Energy Corporation.** This project involved was developed by a jointly financed special purpose company, formed by the City of Fukuoka and Kyushu Electric Power Co, to build a waste processing facility using a PFI approach. Under the sponsor agreements, the facility will incinerate general waste generated in the city of Fukuoka over a 25-year period, generating electricity from the heat energy of incineration and selling any surplus energy to Kyushu Electric. The DBJ structured the arrangement involving a direct agreement between the City of Fukuoka and Kyushu Electric and a banking syndicate, which provided that the financing will be repaid through fees received from the City of Fukuoka for processing waste and through income from the sale of electricity to Kyushu Electric.¹²⁹

¹²⁶ Eunomia. Comparative Study of National Infrastructure Financing Institutions. (June 2018). [Online]. <https://www.nic.org.uk/wp-content/uploads/Eunomia-NIC-FinalReport-Slide-Deck_v1.0-050718.pdf>

¹²⁷ Development Bank of Japan (March 2017) "The arrangement of Japan's largest wind power project finance" [Online]. <https://www.dbj.jp/en/topics/dbj_news/2016/files/0000026501_file1.pdf>

¹²⁸ Development Bank of Japan. Case Study: Haneda Airport International Passenger Terminal PFI. [Online]. <https://www.dbj.jp/en/solution/social/public/haneda_pfi.html>

¹²⁹ Development Bank of Japan. Case Study: Fukuoka Clean Energy Corporation. [Online]. <https://www.dbj.jp/en/solution/social/resources/c_ennagy.html>





H.7. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The DBJ does not have a role in supporting the development of a national pipeline of projects. However, it does take the lead arranger role in some financings, which means that it has a role in structuring the project.

H.8. PERFORMANCE MONITORING

The DBJ has internal risk management and credit analysis functions which assess and monitor client creditworthiness. It also performs a comprehensive analysis of data based on borrower ratings and calculates the loan portfolio's overall exposure to credit risk.¹³⁰

H.9. KEY LESSONS LEARNED

Three notable lessons from the DBJ experience are around the sharing of risk:

- Unlike NIBs in a traditional emerging markets context, the DBJ has been able to adopt a 'market making' approach by, for example, undertaking primary financings which are subsequently refinanced once the asset is operational. In this way, the DBJ finances the riskier construction phase of the project but enables transfer of risk to the private sector at a later stage.
- The DBJ has tried to avoid crowding-out private capital by focusing on higher value-added (but also higher risk) services where there are gaps in the market, such as structured financing and mezzanine financing.
- Where the DBJ raises funding from the capital markets through non-government guaranteed bonds, it implicitly transfers some risk to the private sector.

¹³⁰ Development Bank of Japan. Annual Report & CSR Report. (July 2016). [Online].
<https://www.dbj.jp/en/pdf/CSR_disclo/2016/about.pdf>.



ANNEX I : SOUTH AFRICA - DEVELOPMENT BANK OF SOUTHERN AFRICA (DBSA)

I.1.BACKGROUND AND ESTABLISHMENT

The DBSA was established in 1983 and, despite its regional name, is solely owned by the Government of South Africa. Its original focus was radically changed in 1994 with the transition to democracy, and its current mandate, statutes and regulatory controls date from the DBSA Act No. 13 of 1997 plus the Public Finance Management Act No. 1 of 1999 and the King IV Code of Principles for governance. It now has a very strong focus on basic infrastructure – both economic and social – at the sub-national level in South Africa. To a much lesser extent, it also operates in the 14-member Southern Africa Development Community (SADC) and Africa more generally. This municipal commitment reflects the policy consensus that access to finance was a major constraint on the local delivery of basic services and hence equity, job creation and growth. Municipal loans and bonds were also recognised as having strong potential for capital markets deepening and the attraction of foreign investment. Finally, there was also the legacy of the inequalities and vulnerabilities of the homelands policy of the pre-democracy era.

Not a large bank in the South African financial sector context, DBSA has pursued an aggressive balance sheet growth strategy, but its performance weakened over 2011 – 2013 and it required a total ZAR 11.7 billion (USD 900 million) of new equity in two tranches during 2015 – 2016. It has since restructured and improved the quality of its loan portfolio, in an attempt to become more of a market leader and diversify its own funding sources, particularly through credit lines and partnerships with international DFIs. Its main development instrument remains senior loans with limited equity and investment in bonds; all non-transactional services are priced at full cost recovery. As it does not take deposits, it is mainly reliant on the domestic capital market for funding, and is strictly regulated. The latter market, although relatively well-developed and with long-term tenors, is volatile and relatively high-cost. Currently, the South African economy is in recession, with the Rand depreciating over 15 percent in 2018.

The DBSA seeks to play a more catalytic role in overall infrastructure investment mobilisation, to enhance development impact and its own value proposition, while at the same time trying to increase its competitiveness compared to other DFIs and commercial banks, given its small ZAR 80 billion (USD 6 billion) balance sheet and strict statutory sustainability requirements. Recent years have seen some progress on crowding-in investment but project preparation (and disbursed loans) dipped sharply in 2016/17. National economic and political issues also directly impact its domestic public sector client base. It has a single head office in Midrand, and, at the end of 2016/17, it had some 491 permanent employees, plus 97 contracted staff in municipal infrastructure delivery.¹³¹

I.2.MANDATE

Based on the latest Integrated Annual Report 2016/17, the DBSA vision is: “a prosperous and integrated resource efficient region, progressively free of poverty and dependency”.¹³² This vision centres on financial and development interventions in energy, water, transport and communications, but with secondary support in health, housing and education. The corresponding mission is to advance the development impact in the

¹³¹ No public financial or operating information was available for 2017/2018 at the time of writing.

¹³² DBSA. Annual Report. (2016-17). [Online]. <<https://www.dbsa.org/EN/About-Us/Publications/Annual%20Reports/DBSA%20Integrated%20Annual%20Report%202016-17.pdf>>





region by expanding access to development finance and effectively integrating and implementing sustainable development solutions so as to:

- improve the quality of life of people through the development of social infrastructure;
- support economic growth through the investment in economic infrastructure;
- support regional integration; and
- promote sustainable use of scarce resources.

Over the last three years, the DBSA has modified its strategy, to become an organisation that will enable mobilisation of ZAR 100 billion (USD 7.5 billion) in infrastructure annually by 2020. Achieving this target will require considerable leverage of other financial sources, mainly private.¹³³ Emphasis is now placed on substantial growth in development impact; providing integrated infrastructure solutions throughout the value chain; as well as maintaining the DBSA's financial sustainability. In summary, the DBSA aspires to be a trusted third-party between public and private sectors, catalytic throughout the value chain but particularly taking early stage risks (and rewards), as well as remaining active in the management and improvement of infrastructure assets. Innovation is also stressed, but there is limited specific evidence to date of what this means in practice.

The 2020 corporate targets are highly challenging. As well as the annual investment value, others refer to preparation of a gross value bankable project pipeline of ZAR 25 billion (USD 1.9 billion) and nearly ZAR 18 billion (USD 1.3 billion) of funds under management. For 2016/17, the actuals for project preparation/approval and funds management, respectively, were ZAR 600 million (USD 40 million) and ZAR 3.3 billion (USD 200 million).

1.3. INSTITUTIONAL STRUCTURE

The DBSA is a South African government-owned DFI with a specific legal and regulatory status and is integrated within the public sector financial management system. There is no intent to widen or divest ownership. The institutional structure of DBSA continues to evolve in line with its statutory and market positioning. At the same time, it is still a key development platform for the South African government, and its activities in municipal social and economic infrastructure – particularly basic service delivery at full cost recovery – retain a public sector character.

Recent institutional and other changes have been driven by funding constraints, domestic and international competition and cyclical performance. There is also a heavy client concentration, with seven loans accounting for some 55 percent of the loan portfolio.¹³⁴ Institutional restructuring has tended to follow rather than lead market drivers; it is also clear that more systematic change in scale is inevitable if the 2020 strategic infrastructure objectives are to be met.

1.4. GOVERNANCE STRUCTURE

The Minister of Finance is the Governor of the DBSA and is responsible for the appointment of a 14-member Board of Directors, including the Company Secretary. There are ten independent non-executives, which

¹³³ It was criticised for straying from its tight infrastructure mandate, particularly via equity investments in productive sectors. It also administered the now curtailed national Jobs Fund and is active in black empowerment financing.

¹³⁴ The top ten clients in 2016 /17 accounted for 60 percent of the loan book and the top 20 some 71 percent.



include union, academic and NGO representatives. The DBSA CEO and CFO are also members, as is a Director nominated by the Treasury. The Chairman is an independent non-executive.

Below the Board, day-to-day control is by a senior management team and four-person steering committees on asset liability and supply chain; investment; infrastructure delivery; knowledge management; and corporate services. No executive directors serve on the Board audit and risk or HR/remuneration committees.

Based on the Association of African DFIs governance rating system, the DBSA was awarded an A plus in 2016/17.

The DBSA is closely regulated, and its annual investment/borrowing plan is formally approved by the Treasury. Legislation restricts borrowing to a maximum of 2.5 times equity plus capitalisation minimum ratio (equity/loans) at 28.6 percent. It also has 4.5 percent target rate of return and is required to be financially sustainable. Lending outside South Africa cannot exceed one third of the portfolio. Under the DBSA Amended Act No. 41 of 2014, its authorised share capital was increased to ZAR 20.2 billion (USD 1.5 billion).

The Board operates a balanced scorecard methodology and publishes a suite of reports on an annual basis that include the Integrated Annual Report, Financial Statements and a Sustainability Review. There is no dividend policy. The authorised share capital can only be increased by Treasury, and is divided into 2.02 million shares of ZAR 10,000 each. As of 31 March 2017, DBSA assets totalled ZAR 83.7 billion (USD 6.25 billion); the main components being: development loans at 85 percent, equity investments at seven percent and development bonds at one percent.¹³⁵ The dominance of loans varies only marginally across clients, sectors and geographies.

DBSA historically operated four reporting segments based on the underlying business units; South African financing, international financing, infrastructure delivery and treasury. However, from April 2016, it has adjusted its market-facing divisions to fit its new catalytic, integrated solutions and sustainability strategy.¹³⁶ These provide focus for new business development in terms of client coverage, transactions and project preparation. These are supported by finance, HR and infrastructure delivery and management units. The Board delegates specialist oversight to four main committees: Audit and Risk; Credit and Investment; HR, Remuneration, Nominations, Social and Ethics; and Infrastructure Delivery and Knowledge Management.

Project origination varies by client type, sector and geography (national or international). Across the 283 municipalities in South Africa, there is a wide divergence in creditworthiness and capacity, and DBSA project preparation activities reflect this. DFIs or private or provincial governments have higher capability but tend to want financing and technical expertise support in the higher-risk early stages; DBSA has its own limited project preparation resources, but it has also convened a portfolio of facilities, funds, partnerships and credit lines that assist DBSA to boost project pipelines and gain early access to transactions.

DBSA managed the innovative Renewable Energy Independent Power Producer Procurement (REIPPP) program, which included ZAR 80 million (USD 6 million) of DBSA loan finance but unlocked some ZAR 200 billion (USD 14.9 billion) of mainly private investment and added 6,000MW of renewable energy. As program manager, the DBSA also helped create local Community Trusts, which became part of the ownership structures and accelerated take-up.¹³⁷ REIPPP is credited with opening up the South African renewables market; as well as being the program manager to the sponsoring Department of Energy (DOE) and Treasury,

¹³⁵ These are all South African municipal bonds and are held to maturity.

¹³⁶ DBSA. Financial Mail Infrastructure Special Report. (June 2018). [Online]. <<https://www.dbsa.org/EN/DBSA-in-the-News/NEWS/Pages/Financial-Mail-Infrastructure-Report-2018.aspx>>.

¹³⁷ Community Trusts provide local residents and community stakeholders with a legal instrument to invest in the equity of a renewable energy generation project, this facilitates local involvement and community voice.





the DBSA was the joint-mandated lead arranger and underwriter; it also provided debt finance to Black Economic Empowerment groups and Community Trusts for purchase of equity.

The DBSA operates a standardised pricing model for loans to deliver a risk-adjusted return on capital, Net Present Value and a sustainable profit on an economic basis. It has extensive risk management procedures and systems; it reports monthly and quarterly to management. Despite a collapse in project preparation and a one quarter fall in development loans distributed in 2016/17, it still reported a net profit of ZAR 2.8 billion (USD 200 million). This was achieved primarily by an increase in non-interest income and a fall in operating expenses.

Apart from the statutory and corporate investment criteria detailed above, the infrastructure mandate is the main driver, with increasing importance given to development impact in terms of total funds mobilised or household and community outcomes. Problems of attribution or measurement of outputs/outcomes over the longer term are not reported; there is also preference given to aggregate results over projects or programs.¹³⁸ It is not clear if systematic, independent evaluations are undertaken or how time lags are dealt with. There has also been some criticism that sustainability has been largely interpreted as financial and has not sufficiently included environmental or social dimensions.¹³⁹ But DBSA can argue that its appraisal systems and partners reflect good practice and that they are becoming a major domestic hub for green finance. DBSA reports itself as: “Bigger than its Balance Sheet.”

1.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

Liabilities, at a total of ZAR 51.6 billion (USD 3.9 billion), are mainly financial market debt at ZAR 36.4 billion (USD 2.7 billion). Lines of credit add another ZAR 14.0 billion (USD 1 billion). For short- to medium-term financing, the DBSA held five auctions on the Johannesburg Stock Exchange in 2016/17; all were reported as oversubscribed. The DBSA also has a revolving credit facility, as well as foreign exchange funding through DFI credit lines. Total equity was ZAR 32 billion (USD 6.2 billion).

The DBSA reports a number of standard financial indicators such as total capital and reserves relative to development loans at 45 percent. The long-term debt to equity ratio at end 2016/17 was 158 percent (excluding callable capital of ZAR 20 billion (USD 1.5 billion)). With callable capital, the rate was 97 percent and the overall return on assets was 3.4 percent. The majority of the net cash generated is from operations, and roughly 60 percent of operating income is from within South Africa. The recent injections of equity from the South Africa Treasury were designed to give more headroom in gearing, and the DBSA still has an aggressive growth strategy for its balance sheet but remains constrained by its business and funding model plus the statutory regulations that govern it as a fully government-owned DFI.

DBSA has credibility with other international DFIs and green investment facilities operating in the South African and the wider Southern African region. The extension to include all of Africa was clearly designed to help this partnership/cooperation position. As noted above, DBSA has partnerships, fund management and agency relationships with a number of internal and external environmental and development actors.¹⁴⁰ These include grants, technical assistance, guarantees, bridging finance and reimbursable fees as well as loans and

¹³⁸ For example, all financial and development impacts are based on committed or ex ante investments not actual and households are simply referred to as “impacted.”

¹³⁹ Danny Bradlow and Chris Humphrey. Boston University Global Economic Governance Initiative, Working Paper No 4/ 2016, “Sustainable Infrastructure Investment: Development Banks in Africa,”

¹⁴⁰ In mid-2017, a USD 200 million infrastructure investment facility with African coverage was announced for DBSA through Standard Chartered with political risk guarantees provided by MIGA. The aim is to provide competitive foreign exchange financing for both project development and investment.



equity instruments. The DBSA can offer loans in SADC countries without sovereign guarantees. It also provides capacity development, project preparation and master planning to vulnerable or under resourced municipalities, as well the delivery of basic services and asset management.

Moody's reviewed the DBSA credit rating in March 2018, and assessed it Baa3 for long-term foreign currency issues with a stable outlook. This is the same as the national government. It noted DBSA had high capital buffers but also high credit concentration and an aggressive growth strategy that will require new funding sources during a period of capital market volatility. In line with the main credit rating agencies' methodology for government-owned entities, the DBSA's credit rating is correlated to the sovereign outlook.

Table I-1 – DBSA ratings as of 28 March 2018

Agency	Issuer rating type	Short-term	Long-term	Outlook
Fitch	National Scale	F1+ (zaf)	AA+	Stable
Moody's	Foreign currency	Prime-3	Baa3	Stable
	National Scale	P-1.za	Aa1.za	Stable
	Foreign currency	B	BB	Stable
Standard & Poor's	Local currency	B	BB+	Stable

The DBSA does not report on its cost of capital or the terms on which other credit lines or co-financing is provided.

1.6.FINANCING ACTIVITIES

Of the total development loan portfolio, some 58 percent is in electricity; 18 percent in roads and drainage; and seven percent in social infrastructure. Water is currently at four percent, but it is recognised that water security may be a future growth area. By geography, South Africa accounts for three quarters of the portfolio – mainly Gauteng and Western Cape - and the rest of Africa the remaining 25 percent. By clients, local government (27 percent), public utilities (25 percent) and private sector intermediaries (19 percent) are the largest; all other types are less than two percent.

There is no reporting of the breakdown of financial products or their tenure by sector, client or geography. Pricing is based on commercial terms except where DBSA manages or has access to a specific external fund or facility that can offer concessional terms.¹⁴¹

Looking at 2016/17 annual disbursements, the total DBSA spend of ZAR 12.4 billion (USD 900 million) was distributed as follows: South Africa ZAR 8.7 billion (USD 600 million), with the rest of Africa at ZAR 3.7 billion (USD 300 million).

Apart from the REIPPP program, the DBSA was also a lead player in the post-2006 IPP programs, principally the Avon and Dedisa plants with a combined 1,005MW capacity, both of which are now operational. It provided both senior debt and financed broad-based Black Empowerment groups. The DBSA has now been

¹⁴¹ Consultation should examine the argument that DBSA is a relatively high cost provider; also that its public status means that it is slower and more bureaucratic than competitive private sector commercial banks.





displaced in the IPP market by commercial banks, but can claim to have been one of the key initial market-making stakeholders.

The current DBSA strategy emphasises its claim to additionality through its tight infrastructure focus, trusted advisor and convenor status, project preparation capacity and expertise and integrated infrastructure solutions approach. However, there is minimal published evidence on how this catalytic role is currently being discharged, either in projects or programs or through innovative, relatively high-risk initiatives.

Project performance is heavily influenced by political and economic factors, both domestically and in the region. The delays and operating problems faced by the light-rail Gautrain Project, in both Phases 1 and 2 of the project, are good examples.¹⁴²

Examples of DBSA involvement in municipal infrastructure projects include the 100MW Ka Xu concentrated solar project in Northern Cape, a number of urban rapid transit schemes and the Durban University Student Village. It has also acted to restore storm and flood damaged social infrastructure in the Limpopo Province, build health clinics and accelerated school construction.

DBSA project and program information for investments in SADC or elsewhere in Africa is only published at a headline level, mainly in aggregate totals and some, partly dated, case studies.¹⁴³ Examples include senior debt to hydro-power expansion in Zambia (Ithezi – Thezi project; USD 23 million); senior debt to the Cenpower Kpone IPP in Ghana (USD 53 million); the Kenya Pipeline extension (USD 35 million); and rehabilitation of road networks in Angola and Zambia.

1.7. GREEN FINANCE

A number of the DBSA's DFI credit lines include green projects, particularly in renewables or energy efficiency. Examples include the Nordic Investment Bank USD 100 million facility announced in February 2018. Also, the New Development Bank USD 300 million loan to DBSA for the Greenhouse Gas Emissions Reduction and Energy Sector Development Project. In 2016/17, the DBSA became accredited to the Global Climate Fund.

Within its Project Preparation Division, DBSA has recently announced the creation of a Climate Finance Unit as an initial step towards establishing a green bank capability, and is actively looking for partners to supply development and capital support. This will lead to a new USD 160 million fund, typically with high gearing and targeted to Rand-based economies connected to the Southern Africa Power Pool (the Republic of South Africa, Namibia, Lesotho and Swaziland). The DBSA is looking to attract Climate Investment Funds, GEF and other global facility support. There was no report of DBSA participation in the issue of Cape Town or Johannesburg development bonds; or the first green bond on the JSE for Growthpoint Properties in 2018; the latter being a ten-year ZAR 1.1 billion (USD 82 million) bond for green buildings and urban infrastructure. It was linked to the African Local Currency Bond Fund sponsored by KfW.

The DBSA reports a renewable energy portfolio worth ZAR 13 billion (USD 1 billion) with a total capacity of 1,550MW, with most of the projects being in Northern Cape. The 100MW Kathu Concentrated Solar Project closed in mid-2016 and should be operational by end 2018. In this instance, the DBSA worked with Absa Bank, Investec, Nedbank and Rand Merchant Bank for a total project investment value of ZAR 13.6

¹⁴² These include political opposition to fares and service levels, disputes with trade unions and financial accountability problems in municipalities.

¹⁴³ DBSA. Société Nationale Des Pétroles Du Congo (SNPC). [Online]. <<https://www.dbsa.org/EN/About-Us/Projects-2017/Pages/SNPC.aspx>>.



billion (USD 1 billion). The DBSA provided ZAR 1.7 billion (USD 127 million) of senior debt and ZAR 368 million (USD 27 million) for an equity stake by broad-based Black Empowerment groups.

Only 20MW of renewable energy solar projects were linked to DBSA financing activity in 2016/17; with none reported for gas or coal. The DBSA continues to try to accelerate investment in the renewable energy sector. For example, the South Africa Department of Energy is struggling to complete the first two rounds of a small-scale independent power producer program aimed at plants of 1MW to 5MW and, in response, the DBSA is trying to design a Global Environment Facility/Infrastructure Investment Program for South Africa (IIPSA) to accelerate sponsors access to equity and debt markets. As well as an interest rate subsidy, this includes Black Empowerment finance.

1.8. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The DBSA preparation activities focus on de-risking individual projects, partnerships, cooperation and programs. DFI credit lines or partnerships include project preparation and technical assistance components; such as the 2017 DBSA/AFD USD 100 million infrastructure loan facility; the DBSA/United States Trade and Development Agency Infrastructure Cooperation Agreement (which aims to accelerate large-scale projects through feasibility studies, technical assistance, and pilots); the joint EU and SA government Infrastructure Investment Program for Southern Africa (IIPSA); and the administration of the SADC Project Development and Preparation Facility, with technical assistance also provided by the EU and KfW.

The DBSA is also the implementing agent of the SA Department of Environmental Affairs Green Fund, this is an initiative to provide catalytic support to the transition to a green economy through three windows: green cities and towns; low carbon energy; and environmental and natural resource management. Priority areas and sectors are listed in annual calls for projects; financing can be grants (including recoverable), loans and equity.

Except through the execution of external programs, DBSA has neither the staff nor the financial resources necessary to undertake a major scale-up of the development of infrastructure pipelines in South Africa or regionally. In 2017, the project preparation department had total staff of 16, up from 11 in 2016.¹⁴⁴ In 2017, total funding mobilised for project preparation, including co-financing, was ZAR 163 million (USD 12.2 million). Technical assistance activities are not separately reported in the accounts or statements.

The Financial Sustainability Review for 2016 /17 details a number of case studies covering the last five-year period.¹⁴⁵ The eThekweni Municipality Aqueducts Project involves bulk water supply for a catchment population of over 1 million people; here DBSA/AFD provided a 15-year loan of ZAR 700 million (USD 52 million) and supported a IIPSA ZAR 93 million (USD 7 million) grant within the overall ZAR 3 billion (USD 0.2 billion) program. The DBSA has also supported the South African Government's public transport policy with PPP preparation in the difficult area of bus rapid transit. Transactions included ten-year loans with flexible tenors, grace periods and interest rates. Successful projects include the Tshwana and Ekurhuleni Bus Rapid Transit projects, plus Phases 1 and 2 of the Gautrain Project. The latter Phase 2 extension is currently stalled, but Phase 1 issues included municipal risk and loan tenors across different concession periods. IIPSA provided a ZAR 40 million (USD 3 million) project preparation grant. An aggregate of some 224,000 households were

¹⁴⁴ Other project preparation staff may be in other departments but such skills should be concentrated here. With the increased emphasis on project preparation in the 2017 strategy, this resource may grow.

¹⁴⁵ DBSA. Integrated Annual Report. (2017-2018). [Online]. <<https://www.dbsa.org/EN/InvestorRelations/Pages/DBSA-Annual-Reports.aspx>>.





reported as positively impacted by municipal infrastructure delivery programs, social and economic, in 2016 /17.

I.9.PERFORMANCE MONITORING

The DBSA does not publicly report by project or programs but by business unit or segment and then higher-level aggregates; it has a comprehensive risk management policy and systems and generates monthly and quarterly internal management statistics and profiles. There are clear processes for independent and executive investment, pricing and exit or refinancing, but loan instruments dominate and there is some evidence that international activities are more profitable (and dominated by the private sector or its intermediaries) relative to the DBSA's domestic activities.

As noted above, the DBSA is now emphasising its development impact both by crowding in investment and economic benefits to households, job creation and use of MSME supply chains. This appears to be monitored and measured at the transaction approval or commitment stage and not through de facto independent evaluations or surveys. Attribution and hence additionality are only addressed on a very high level.

I.10. KEY LESSONS LEARNED

The DBSA has the reputation of being a public sector 'safe pair of hands' for the administration and implementation of programs and projects funded by external stakeholders. However, more evidence is needed on the extent to which it adds value by expertise or targeted local technical assistance/equity. The main DBSA successes in South Africa are its role in the REIPPP program, IPP start-ups and municipal energy and transport. Its funding of broad-based Black Empowerment and community trusts to enable them to gain equity shares in local projects has been catalytic. However, the DBSA's financing program and regulatory constraints would seem to suggest that the DBSA is less nimble and more risk-averse on the use of its own borrowed or generated resources than larger banks or DFI competitors.

The DBSA has largely maintained its tight strategic focus on municipalities and infrastructure and has been proactive in trying to convene additional concessional or foreign exchange funds through administration or partnering arrangements. This has included arrangements with the Green Climate Fund, the Climate Investment Fund and the GEF, as well as KfW, AFD and domestic public sources. To date, the DBSA has not sponsored or initiated any green bond or similar activity. It is closely regulated and required to be financially sustainable; except when it can use concessional external funds, this means commercial pricing and full cost recovery. This has forced some innovation in reimbursable grants or refundable technical assistance for poorer municipalities. Financial activities are dominated by loans, mainly senior debt.

The DBSA is reported in the South African financial press to be at a 'tipping point' in terms of value added and relevancy; additionality seems higher in South Africa than in SADC or the rest of Africa. It will continue to face strong competition from DFIs plus larger commercial and investment banks, and its main effectiveness seems to be at the smaller, more programmatic end of projects, where its local knowledge, convening power and expertise is greatest and there is evidence of best practice. To maintain its niche, it will need to increase its project preparation capacity and funding.



ANNEX J : AUSTRALIA - CLEAN ENERGY FINANCE CORPORATION (CEFC)

J.1.BACKGROUND AND ESTABLISHMENT

The CEFC is an Australian Government-owned institution (or “green bank”) that was established in August 2012 to facilitate increased flows of finance into the clean energy sector and to support the government’s commitments to reduce carbon emissions. Using government funding, it invests in and supports clean energy projects, although across its portfolio it must deliver a positive return for taxpayers. It also supports innovative start-up companies through a dedicated Innovation Fund.

Establishing the CEFC was a controversial policy, and a subsequent government sought to abolish it on the basis that this form of government intervention was not necessary. In particular, there was some opposition to the CEFC’s proposed role in supporting onshore wind and domestic solar photovoltaic project, because these were more established technologies. Notwithstanding this opposition, the CEFC remains in operation today.

J.2.MANDATE

The CEFC mandate was established in the Clean Energy Finance Corporation Act 2012 and the prevailing Investment Mandate which can be amended by the government from time to time.¹⁴⁶

The Mandate stipulates that CEFC is a mechanism to help mobilise investment in renewable energy, low-emissions and energy efficiency projects and technologies in Australia, and to help finance Australia’s clean energy sector using financial products and structures to address the barriers inhibiting investment. The CEFC should make commercial investment decisions, though it can offer concessional finance terms. For example, it should have regard to positive externalities and public policy outcomes when making investment decisions.

The Mandate also stipulates that the CEFC must target an average return of the five-year Australian Government bond rate of three to four percent per annum over the medium- to long-term, whilst seeking to develop a portfolio of projects from across the spectrum of clean energy technologies that in aggregate has an acceptable but not excessive level of risk.

The Mandate also places the following limits on CEFC’s activities:

- The CEFC must limit the amount of concessionality it provides in any one financial year to AUD 300 million. Concessionality reflects the mark-to-market valuation of loans made that financial year and is measured as the difference between the present value of each loan at market rates and the present value of each loan at the given concessional rate.
- The CEFC should seek to avoid the use of guarantees where possible. It must ensure that all guarantees are limited and quantifiable, and at no time may the total potential liability of outstanding guarantees exceed the amount of uncommitted funds available to CEFC.
- In undertaking its investment activities, the CEFC must consider the potential effect on other market participants and the efficient operation of the Australian financial and energy markets.

¹⁴⁶ The current version of the mandate is available online [here](https://www.legislation.gov.au/Details/F2017L00035): <https://www.legislation.gov.au/Details/F2017L00035>





- The CEFC must focus on supporting emerging and innovative renewable energy technologies and energy efficiency technologies, such as large scale solar, storage associated with large and small-scale solar, offshore wind technologies, and energy efficiency technologies for the built environment.

The Mandate also includes various other directions in relation to specific funds managed by CEFC that have focused themes (e.g. the Clean Energy Innovation Fund, the Sustainable Cities Investment Program and the Reef Funding Program).

The government can provide direction to CEFC through the Investment Mandate, providing the direction:

- does not require the corporation to make or not make a particular investment; and
- is not inconsistent with the CEFC Act.

J.3. INSTITUTIONAL STRUCTURE

The CEFC is a corporate Commonwealth entity – a body that has a separate legal personality from the Commonwealth and can act in its own right exercising certain legal rights such as entering into contracts and owning property.

Under the CEFC Act, the CEFC has two responsible Ministers: the Minister for the Environment and Energy and the Minister for Finance, through which the CEFC Board is accountable to Parliament.

The CEFC Act provides for a governing Board. The Board acts independently of the Australian government, although all Board members are government-approved appointees. In turn, the Board appoints the Chief Executive Officer (a statutory officer) and Executive staff, who are employed under such terms and conditions as the Board sees fit.

J.4. GOVERNANCE STRUCTURE

The CEFC Act provides the Board with statutory responsibility for decision-making, performance of the CEFC's functions, making and managing investments. The Board can, as required, delegate authority to individual Board members to work with the Executive Team on investment decision-making or risk management matters. The Executive Team is responsible for implementing the Board's decisions, conducting portfolio reviews and managing day-to-day investment matters.

While the Board retains responsibility for investment decisions and portfolio management, the Audit and Risk Committee oversees the audit, risk, compliance and assurance functions, reviews financial statements and evaluates the adequacy and effectiveness of the risk management framework.

The Executive Investment Committee assesses investment proposals. It is responsible for reviewing investment opportunities, making recommendations to the Board, and making investment decisions under Board-delegated authority. It oversees progress of transactions until first drawdown, at which point responsibility transfers to the Asset Management Committee.

The Asset Management Committee oversees the Portfolio Management function. It has responsibility for management of all investments post first drawdown until they are fully repaid or exited. It is responsible for reviewing the performance, including investment risk, of the CEFC's portfolio of investments.

The Executive Risk Committee provides oversight of CEFC-wide enterprise risk management. It oversees the system of identification, management and monitoring of risks associated with the CEFC itself, in accordance with the CEFC's Risk Management Framework.



The CEFC publishes its Investment Policies which set out how and where it invests, its performance benchmarks and its approach to managing risk.¹⁴⁷

J.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The Australian Government is the sole shareholder in the CEFC and the annual budget appropriations (AUD 2 billion (USD 1.4 billion) every year from 2013 to 2017 inclusive, as set out in the CEFC Act), are CEFC's only source of capital. It is not able to raise debt to fund its activities.

The CEFC targets positive financial returns from its portfolio, therefore it aims to be self-sustaining over time in terms of its operating costs.

J.6. FINANCING ACTIVITIES

CEFC began making its first financial commitments in July 2013. Over the last five years, the CEFC has directly invested AUD 4.8 billion (USD 3.4 billion) in more than 110 individual transactions, with a total project value of AUD 19 billion (USD 13.5 billion). It has also delivered finance for more than 5,500 smaller-scale clean energy projects through co-financings and corporate/climate bond programs.

It has flexibility to invest across the capital spectrum – in equity (including through specialist equity funds), debt (corporate or project) and subordinated debt. This allows it to respond to changing market conditions; lower barriers to clean energy investment; and support the development of a robust clean energy pipeline, by attracting project developers, entrepreneurs and other investors to the Australian clean energy market. However, the CEFC is limited in the guarantees (contingent support) that it can provide. Where it does so, the total potential liabilities under any outstanding guarantees is limited to the CEFC's uncommitted and available funds, thus it does not require additional funding to deal with contingent liabilities.¹⁴⁸

The CEFC's products and project cycle focus allow it to address common renewable infrastructure risks. For example, appetite for construction risk and merchant price risk remains limited among Australian banks and non-bank investors such as funds and insurance companies. Additionally, the market for corporate power purchase agreements is underdeveloped in Australia compared with other advanced economies. When energy retailers have shown reduced demand for power purchase agreements, the CEFC has developed sophisticated merchant energy price risk guidelines that have allowed it to finance partly or fully merchant (uncontracted) renewable energy projects to avoid disruption to the development pipeline. In this way, with the backing of funding from the Government of Australia, the CEFC is able to support clean energy markets through periods of policy transition and market uncertainty.

The CEFC primarily applies a commercial approach when making investment decisions – focusing on projects and technologies that are at the later stages of development – but, given its public policy purpose, it will pursue projects that are perceived by the market to be slightly ahead of the current level of risk appetite. Where there are positive externalities to the project, the CEFC can accept a higher level of risk, or a lower financial return ("concessionality").

As at 31 December 2017, the CEFC's financing commitments were as follows:

¹⁴⁷ Details of CEFC's investment policies can be found here: <https://www.cefc.com.au/media/328406/CEFC-Investment-Policies-June-2017.pdf>

¹⁴⁸ See Part 2 Clause 10 "Limits on Guarantees" of the Clean Energy Finance Corporation Investment Mandate. [Online]. <<https://www.legislation.gov.au/Details/F2017L00035>>.





- Project finance loans – AUD 1.7 billion (USD 1.2 billion)
- Co-financing programs – AUD 1.1 billion (USD 780 million)
- Equity – AUD 804 million (USD 571 million)
- Corporate loans – AUD 800 million (USD 568 million)
- Climate bonds – AUD 383 million (USD 272 million)

As at 31 December 2017, the sectoral breakdown was as follows:

- Solar photovoltaic – AUD 1.5 billion (USD 1.1 billion)
- Wind – AUD 791 million (USD 562 million)
- Other – AUD 795 million (USD 565 million)
- HVAC/Monitoring Systems – AUD 384 million (USD 273 million)
- Lighting – AUD 362 million (USD 257 million)
- Low emission vehicles – AUD 359 million (USD 255 million)
- Industrial process improvement – AUD 234 million (USD 166 million)
- Cogeneration – AUD 163 million (USD 116 million)
- Bioenergy – AUD 151 million (USD 107 million)

Part of the benefit of CEFC support is its long-term investment horizons – for example, the average legal tenor of CEFC project finance loans is 11 years. It can take equity positions in projects which have no specified term.

The CEFC publishes quarterly reports regarding investment commitments.¹⁴⁹ Some relevant examples include:

- **Macarthur Wind Farm, Victoria.** The CEFC provided AUD 50 million (USD 36 million) as part of a debt package of AUD 499 million (USD 355 million) to refinance a 50 per cent stake in the AUD 1 billion (USD 710 million) Macarthur Wind Farm. Other syndicate members were ANZ, NAB, ING, Shinsei, ICBC and EKF. The CEFC's additional finance helped ensure efficient market pricing and encouraged other banks to participate, and demonstrated that developers of large-scale renewable energy projects in Australia can successfully complete a development-refinance-exit cycle.⁷
- **Moorebank Logistics Park, Sydney.** The CEFC is committing up to AUD 150 million (USD 107 million) through a seven-year bilateral term debt facility to assist in providing medium-term finance for the staged construction of a logistics park which will take emissions-intensive trucks off the roads by increasing the use of rail networks to distribute containerised freight to and from Port Botany.
- **The Local Government Finance Program.** The CEFC provides flexible and competitive fixed-rate, long-term finance for councils, targeting major investment projects with the potential to make a significant difference to a council's energy consumption. Eligible projects include energy from waste, solar

¹⁴⁹ These reports can be found here: <https://www.cefc.com.au/publications/quarterly-reports/>.



photovoltaic, street lighting upgrades and low emission vehicles (including related infrastructure). Finance can be drawn over three years and the Program provides access to fixed rate senior debt up to ten years in maturity.

- **The Energy Efficient Equipment Finance Program.** This program, offered through the Commonwealth Bank, provides Australian businesses and not-for-profits with lower cost finance for a wide range of energy efficient assets. It offers a 0.7 percent discount on CB's standard asset finance rate for technologies which meet the CEFC's investment guidelines and provides up to 100 percent of the project cost for those between AUD 10,000 and AUD 5 million (USD 7,000 and USD 3.6 million).
- **Climate Bonds.** National Australia Bank issued an AUD 300 million (USD 213 million) Climate Bond in December 2014, the first by an Australian issuer, which was supported by an AUD 75 million (USD 53 million) cornerstone investment by the CEFC. The funds were earmarked for a portfolio of renewable energy assets and are now supporting wind farms and solar energy facilities located in Victoria, South Australia, Tasmania, Western Australia and NSW, with an estimated total capacity of over 2GW.

J.7.SUPPORT FOR GREEN FINANCE

Under the CEFC Act, it may only invest in “complying investments” which must be clean energy technologies (i.e. energy efficiency, renewable energy or low emission technologies). Beyond its direct investment into clean energy projects, the CEFC has also committed finance to several clean energy financing ‘firsts’, including the first climate bonds for the Commonwealth Bank, the National Australia Bank and Westpac; the first certified Australian dollar green bond issued by a Australian real estate investment trust; the world’s first climate bond issued by a university, and an investment in Australia’s first peer-to-peer green lending platform.

J.8.PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The CEFC aims to encourage dialogue with project developers and is willing to use its specialist expertise in green sectors to act as a ‘sounding board’ to help structure bankable projects. It does not have a formal role in project development activities that can be supported through technical assistance (that is project design, feasibility work or in developing a pipeline of priority public infrastructure projects) but it does respond to government consultations on issues which affect investment in green infrastructure.

The CEFC does have an important role in demonstrating that clean energy projects can be commercially viable. The CEFC has a pipeline of investment opportunities valued at around AUD 9 billion (USD 6.4 billion) at 30 June 2017. This demonstrates growing interest in clean energy investment, which may be related to the role that the CEFC has played in working with investors and project developers.

J.9.PERFORMANCE MONITORING

The main Key Performance Indicator used to assess the CEFC's performance is the ratio of private finance raised for each dollar of CEFC investment. CEFC states that it achieved AUD 1.80 of private sector finance per CEFC AUD. It also tracked key environmental outcomes at a portfolio level, such as annual and lifetime reductions in carbon and other greenhouse gas emissions. In total, it has 13 different performance criteria on which it publicly reports performance on an annual basis.

Internally, CEFC's portfolio management and risk and compliance functions track the performance of individual projects and manage risk at both individual project and portfolio levels.





J.10. KEY LESSONS LEARNED

The CEFC is a specialist financial institution for the clean energy sector, meaning that it has a strong understanding of risks and opportunities that the market finds difficult to assess. This helps the CEFC to play a valuable demonstration role; that is, sharing its sector expertise and ‘crowding-in’ private investment. In some instances, a cornerstone financing commitment from the CEFC helps projects secure additional private sector growth capital.

New infrastructure banks benefit from a clearly defined charter, well-structured investment parameters, and the ability to make decisions independently of government. A tight charter and a commercial board are required to provide the necessary high standard of governance.



ANNEX K : UK - THE GREEN INVESTMENT BANK (GIB)

K.I. BACKGROUND AND ESTABLISHMENT

The GIB was established by the UK government in October 2012 to “accelerate the UK’s transition to a greener, stronger economy” by investing in green infrastructure projects. At the time, the government estimated that the UK required up to GBP 330 billion (USD 423 billion) of additional investment in green infrastructure over the decade to 2020 – an annual investment gap of between GBP 30-50 billion (USD 38-64 billion) – in order to meet the UK’s various international climate agreements and obligations. The scale of the investment gap suggested that there was a case for government-led intervention to address a range of market gaps that were impeding investment, including:

- temporary limits in company and bank balance sheets, owing to increasing regulation and illiquidity in capital markets, following the 2008 financial crisis;
- a limited number of investors willing to take on the uncertainty associated with projects without precedent or a track record of results; and
- a lack of stability in long-term government policy on the green economy.

The government concluded that there was a case for a new ‘enduring’ institution with a mandate to invest in a rolling program of green infrastructure projects and mobilise (i.e. ‘crowd-in’) private finance. The new institution would be able to invest in a variety of sectors, focusing on more speculative, early-stage technologies, but with the ultimate constraint that it should exit established sectors once the technology had matured (and market-based finance was available).

In order to achieve the government’s primary aim of mobilising additional private investment, it was decided that GIB should provide finance on fully commercial terms alongside other commercial firms, rather than acting as a public funding platform providing soft loans and grants. GIB’s role would be to be both green and profitable, using its sector specific expertise to assess the risks associated with green projects accurately and giving co-investors the necessary confidence to commit finance.

From the beginning, it was envisaged that the GIB could eventually be transferred into the private sector and was designed to accommodate this, despite its explicit policy objective to encourage investment into sectors where market finance was not well-established. The government indicated that fiscal constraints meant that there was limited funding available for the GIB to build on early successes and grow its portfolio and, therefore, in June 2015 the government announced plans to bring private capital into GIB in order to give it freedom to access much greater volumes of capital and have a bigger environmental impact.¹⁵⁰

It was decided that the best option to overcome this barrier was a sale of a majority stake in GIB to private investors, which was formally launched in 2016. The sale was completed in August 2017 with Macquarie Group paying GBP 1.6 billion (USD 2.1 billion) to purchase GIB outright, although the government retained a stake in a small number of assets it values at around GBP 132 million (USD 169 million).

The GIB now operates as the Green Investment Group – bringing together the GIB and Macquarie Capital’s renewable investment team.¹⁵¹ It continues to finance green projects in the UK, but without funding from the

¹⁵⁰ Others held the view that in the short-term there was no shortage of capital and that if the GIB were allowed to borrow it could have overcome fiscal constraints.

¹⁵¹ There have been recent reports that Macquarie on-sold most of the assets at a profit while not taking on the risk for the assets they would struggle to sell. For those they agreed to continue managing them on behalf of government.





government. It now has a more international mandate and is able to invest in established technologies and at all stages of the project life cycle. To protect the GIB's green purpose, the government provided for a "special share" which is held by Green Purposes Company Limited – a company limited by guarantee – which is owned and operated by independent trustees. The GPC's primary power, in its capacity as special shareholder, is to approve or veto any proposed amendment to the green purposes as set out in the articles of association of the GIB.

K.2. MANDATE

Under the Enterprise and Regulatory Reform Bill 2013, the UK Government enacted legislation to ensure that the GIB would always have a 'green' purpose. Five green purposes" were agreed:

- reduction of greenhouse gas emissions;
- advancement of efficiency in the use of natural resources;
- protection or enhancement of the natural environment;
- protection or enhancement of biodiversity; and
- promotion of environmental sustainability.

The initial strategic priority sectors were offshore wind, commercial and industrial waste, energy from waste and non-domestic energy efficiency.

Additionality was also a core part of the GIB's mandate – its investment activities were intended to: (i) encourage others to invest; (ii) not crowd-out other investors; and (iii) invest on terms acceptable to commercial investors.

The GIB also had a set of "operating principles" which formed part of its wider mandate. These were:

- **Green objectives, sustainable finances.** Working towards a "double bottom line", deploying capital to achieve significant green impact whilst generating positive portfolio returns and in doing so, preserving and building its capital base.
- **Enduring impact.** Building a sustainable institution that delivers the long-term impact required by the UK's transition to a green economy.
- **Strategic alignment with government.** Aligning strategic priorities with government green policy objectives and initiatives.
- **Operational independence from government.** Putting management and operational decision making at arms-length from Government.
- **Partnership with the private sector.** Operating in cooperation with private sector players, enhancing private sector provision and leveraging private sector capabilities where appropriate, and not acting where Government policy objectives could be met by private sector provision alone.
- **Minimising market distortions.** Operating consistently within EU State Aid rules.

As noted, the GIB's mandate was constrained by the conditions attached to the European Commission's State Aid approval. Initially, this limited GIB's investment activities to three priority areas (offshore wind power generation, waste infrastructure and non-domestic energy efficiency) and five non-priority sectors (biofuels for transport, biomass power, carbon capture and storage, marine energy and renewable heat). This



was later expanded to include small-scale onshore wind and hydro-energy sectors. Approval was also conditional on the GIB supporting projects on the same terms as other participants in the same transaction (*pari passu*), or on similar terms supported by an expert opinion.

K.3. INSTITUTIONAL STRUCTURE

The GIB was a public company established under the Companies Act, but the UK Government was its sole shareholder until the sale to Macquarie in 2017. The government managed its investment through UK Government Investments (the agency which acts as shareholder of the UK government's arms-length bodies) and the Department for Business, Innovation and Skills, now the Department for Business, Energy, and Industrial Strategy.

This structure provided for the level of control which the UK Government needed over GIB's operational principles and investment mandate, given its role as sole shareholder and the GIB's explicit policy objectives. But it was also designed to provide for sufficient and credible freedoms from government in order to pursue commercial terms and co-invest alongside private capital.

However, the sale of the GIB demonstrates that public ownership – particularly constraints on the stability and security of future funding – can become a constraint. In this case it prevented the bank from growing its portfolio, and was the main rationale presented for introducing private capital.

K.4. GOVERNANCE STRUCTURE

The GIB's Articles of Association and Shareholder Relationship Framework Document (which described the roles of responsibilities in the relationship between GIB and the UK Government) provided the basis of the governance structure. These documents compelled the GIB to accord with corporate governance best practice and comply with the provisions of the UK's Corporate Governance Code.

The GIB Board had 11 members, including seven non-executive directors, and one senior representative from the shareholder (UK Government Investments). The Board was independent, although the Department for Business, Innovation and Skills retained the power to appoint the GIB chair, the senior independent director, and the shareholder representative director. The GIB chief executive, as GIB's accounting officer, was accountable to both the Board and the shareholder, and to Parliament.

The Board was supported by three Executive Committees (investment, portfolio management and risk & compliance) and five Board Committees (audit and risk, chair, nomination, remuneration and valuation), each of which reported its activities in the GIB's Annual Report & Accounts.

Smaller investment decisions could be approved by the Chief Executive (subject to "no objection" raised by the Chief Risk Officer and the endorsement of at least one non-executive Board member), supported by the Investment Committee. Investments or divestments in excess of GBP 50 million (USD64 million) required Board approval, and those in excess of GBP 300 million (USD385 million) required shareholder approval. Transactions were originated by investment teams within GIB.

The Chief Executive and the leadership of the GIB managed the day-to-day activities of the bank, including making and executing operational decisions and implementing the GIB's strategy agreed by the Board.

Since the sale of the GIB to Macquarie, the GPC has become an important part of the governance structure. The GPC does not have any role in the day-to-day operations and management of the GIB, nor approval of each individual investment by GIB or play any part in the GIB's internal investment approval process. However, the GPC tracks the GIB's investments via an agreed information-sharing mechanism in a manner





which allows the GPC to discharge its duties (the protection of the “green” purposes) effectively. The GPC supports the GIB’s right to invest abroad, thereby assisting in the global transition to a sustainable and low-carbon economy. Such investment abroad, however, should not be at the expense of continued investment at home to help ensure that the UK further develops its world-leading green sector.

K.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The UK Government was the sole shareholder of the GIB until the sale to Macquarie. It was not permitted to borrow funds from the capital markets. It was allocated GBP 3 billion (USD 3.9 billion) of public funding to invest in the period 2012 to 2015. A further allocation of GBP 800 million (USD 1 billion) was made in 2015 for the financial year 2015-16 to support further investment in green projects. The GIB was exempt from some of HM Treasury’s annual budgeting rules in order to give it greater flexibility in making investment decisions.

The government decided in June 2015 that further public funding was not affordable. Other options were explored with the GIB (including giving it the ability to raise its own debt or equity) but the government decided that the preferred option to enable the GIB to build on what it had achieved was a sale of a majority stake.

K.6. FINANCING ACTIVITIES

The GIB had flexibility to invest across the full capital structure, from debt to mezzanine debt and equity, although it does not offer guarantees to help projects access debt finance (HM Treasury’s UK Guarantees Scheme filled this purpose). The GIB’s mandate allowed it to invest in the construction of new projects or in the refinancing of existing projects where there was a benefit in creating a secondary market. It could invest directly in large projects or programs, and indirectly in smaller projects through funds or developer partnerships. This ‘fund of funds’ business allowed the GIB to invest in a higher volume of smaller projects (including a combined heat and power plant in Sheffield where the investment was managed by the fund’s general partner, Equitix).

It also acted as fund manager and general partner in a fund management business which manages the investment of third-party capital in green infrastructure projects – the GIB Offshore Wind Fund.

All of GIB’s investments were made on commercial terms. This was to demonstrate to other private investors that green investment is commercial and profitable, but it was also a requirement of the GIB’s State Aid approval.

By March 2017, the GIB had backed 100 green infrastructure projects in the UK and committed over GBP 3.4 billion (USD 4.7 billion) across energy efficiency, offshore wind, waste and bioenergy, and onshore renewables. It also leveraged a further GBP 8 billion (USD 10 billion) in private capital, equating to around GBP 2.50 for every GBP 1 invested.

As at March 2017, the GIB’s portfolio was held as follows:

- Commitments by sector: Offshore wind (46 percent), Waste and bioenergy (34 percent), Energy efficiency (14 percent), Onshore renewables (six percent)
- Commitments by product: Direct equity (57 percent), Direct debt (23 percent), Fund investment (16 percent), Managed account (four percent)
- Commitments by stage: Construction (75 percent), Operational (25 percent).



Interesting projects include:

- **The Westernmost Rough Offshore Wind Farm**

Westernmost Rough represented the first commercial deployment of the new, larger 6MW turbine anywhere in the world and was the GIB's first investment in a UK offshore wind project at the construction stage. The GIB acquired a 25 percent stake in the project alongside Japan's Marubeni Corporation (25 percent) and the developer Orsted (50 percent). The GIB stated that "the project's technical and financial innovations... helped improve performance levels and reduce the wind power generation cost, making it significantly more competitive."

The GIB's shareholding was later refinanced by a consortium of lenders with GBP 370 million (USD 474 million) of limited recourse senior debt. The lenders included JBIC, Tokyo-Mitsubishi UFJ, Mizuho Bank and SocGen. The transaction brought in a number of new, long-term financiers to the offshore wind sector.

- **The Galloper Offshore Wind Farm**

The GIB was a cornerstone investor in the Galloper Project – a GBP 1.5 billion (USD 1.9 billion), 336MW wind farm which will generate enough electricity for 336,000 homes. The Galloper financing was pioneering, in that the four equity investors helped to de-risk the project in order to attract a consortium of 12 commercial banks and the European Investment Bank. This was the first time that an offshore wind farm secured lower-cost debt finance before construction started. The Beatrice and Dudgeon projects subsequently adopted the same financing approach.

- **The Southend LED Streetlighting Replacement Program**

Southend-on-Sea Borough Council became the first local authority in England to secure financing from the GIB to accelerate the replacement of its existing streetlights with lower energy alternatives.

Supported by a GBP 5 million (USD 6.4 million) grant from the Department for Transport, Southend BC raised GBP 8.2 million (USD 10.5 million) from the GIB under its Green Loan scheme, which offered UK local authorities a low, fixed-rate financial arrangement over a period of up to 30 years. It was specifically designed to finance public sector energy efficiency projects where repayments were less than the savings realised, thus allowing cost savings to flow to the council immediately.

The GIB standardised the Green Loan investment process to save the public sector time and money in agreeing a financing package for energy efficiency projects.

K.7. PROJECT PREPARATION AND TECHNICAL ASSISTANCE ACTIVITIES

The GIB was not mandated to undertake project preparation or technical assistance. Instead, it was a bank seeking to mobilise via demonstration effects. However, in the waste sector, for example, the GIB commissioned reports to review the various technologies, even though the GIB was meant to leave it to the market to decide on technologies.

The GIB did assist projects sponsors to develop bankable projects, in a similar way that other banks/financial institutions would. This was particularly evident with the investment in the Belfast Energy from Waste plant.





K.8. PERFORMANCE MONITORING

The GIB's performance monitoring framework was designed and agreed with the sponsor government department, the Department for Business, Innovation and Skills. It included metrics for measuring GIB's performance against its key policy objectives, and was published annually. The key metrics covered the following areas:

- Green metrics – such as reduction in greenhouse gas emissions, renewable energy generated, and energy demand reduced as attributable to GIB investments. These metrics are set out in an audited “Green Impact Statement”.
- Mobilisation ratio – this reports the additional capital mobilised as a multiple of GIB capital committed.
- Financial reporting – the GIB was required to report annually on the profitability of its portfolio and its forecast rate of return. GIB had a minimum target return of 3.5 percent pa.¹⁵² Although it never achieved this target in any one financial year, as at the end of March 2017 it was projecting a return of around ten percent assuming all projects were built on time and budget.

Internally, oversight of the performance of GIB's assets was maintained by the Portfolio Management Committee. The Audit and Risk Committee had responsibility for identifying and managing any risks arising from the GIB's activities, including risk relating to its green impact. There was also an internal, but independent, audit function. The Investment Committee members were also on the Portfolio Management and Risk Committees.

Externally, GIB was required to report on its activities and ongoing performance to the shareholder representative (UK Government Investments) on a monthly basis. It also published details of all its investments.

In 2015, the UK Government and the GIB jointly commissioned an independent evaluation of the GIB's activities. The evaluation was intended to review whether the GIB had addressed market gaps in each of its sub-sectors. The review found that the GIB had been successful in addressing gaps in offshore wind (where that GIB has committed around 46 percent of its capital) and waste and bioenergy (where it has committed around 34 percent of its capital), but the evidence indicated less certainty around the non-domestic energy efficiency and onshore renewable sectors. The evaluation also noted that it was not possible to quantify the difference that the GIB made in terms of additional investment, partly because sample sizes were too small in some sectors, and that it could not draw robust conclusions about the GIB's impact on cost of capital for new infrastructure assets, because of the lack of a clear counterfactual case against which it could be measured.

The National Audit Office also carried out a review of the government's handling of the sale of the GIB. It concluded that the government had no criteria for success when measuring the GIB's green impact – as it was felt that this might constrain investment choices and original policy intent was to boost green investment more than green impact.

¹⁵² Given that the GIB's early investments were in equity (57 percent), much of which were in construction assets, a return of 3.5 percent while in start-up mode was unlikely to be achieved. Once construction completed, and operational, the GIB could on-sell assets for significant return, or increase leverage on the project and dividend-up the proceeds.



K.9. KEY LESSONS LEARNED

Being flexible, especially at first, is important

Early on, the GIB leadership decided that if something was in line with government regulations then they would consider it. So, for example, one of the first transactions was for the Drax Power Project, which involved converting a coal plant to biomass, but importing wood pellets from the US. This was clearly controversial, but was within government regulations. The GIB carried out all the carbon calculations etc, imposed strict criteria on the wood that could be used ('waste wood', etc.) before agreeing to the transaction.

The original concept was that the GIB should do transactions that were very green, but not creditworthy. Again, the GIB leadership team rejected this idea, recognising that they needed to be an enduring institution that mobilised third-party funding by investing in transactions with appropriate risk/reward characteristics. Investing in a green, but inappropriate risk/reward transaction would not mobilise the market.

An independent board is critical

The government proposed an independent board. This included green and finance professionals, with just one civil servant. This meant that the board could take appropriate decisions in line with the mandate of the GIB, but with no political interference. The civil servant was important, however, to advise the board on issues that may be important to the government, but he had no right of veto. It also provided protection to the government who, if it was pressured, could genuinely say that the board was independent. The board received proposals for projects supported by local MPs that were not bankable and those were rejected.

Capitalisation – especially the split between debt and equity – needs careful consideration

The GIB was the most capitalised bank in the world, with 100 percent equity. When the government added an extra GBP 800 million (USD 1 billion) equity in the spending review, this was in response to the bank's request to be able to borrow. The government responded by stating that the GIB could have GBP 800 million (USD 1 billion) of equity, and borrow if needed, but only up to, and instead of, the GBP 800 million (USD 1 billion). This was likely a function of government accounting (all debt remained on the government's balance sheet). If the GIB could borrow on its balance sheet, this would have saved government money being invested directly, and could have mobilised further third-party funding. The providers of third-party funding could then undertake due diligence on the bank and its operations, and if successful could help mobilise more funds into the green economy by proving that green investment works.

Medium term commitment of funds was important

The government not only committed GBP 3 billion (USD 3.9 billion) over three years, it also provided above this amount, an operating budget for three years. This meant that, for a start-up, the GIB knew their operating cost funding was committed, and so they could take appropriate decisions regarding resources etc., even if they would not provide an immediate return.

A clear focus on a relatively narrow and well-defined sectors is important

If no sectors were defined, there was a risk that the bank could consider all sorts of 'green' projects and end up being a 'jack of all trades, master of none', and perhaps focus on the 'easier' sectors. The relatively narrow priority sectors forced the GIB to focus on how to mobilise funds into these specific sectors, hiring experts in the field, undertaking market analysis, etc. Off-shore wind was a good example of this, where other institutions had looked at the sector, thought it was too difficult, could not afford to spend a year or more to develop a market that may never happen, and so put it to one side. The GIB did not do that.





Investments should be market led

Before its formation, it was difficult to predict what types of investments the GIB would make. There were a myriad of views as to what the bank would invest in before it was formed. The actual mix of investments was almost certainly not what was predicted. This developed from working with the markets, following extensive market engagement, rather than seeking to force markets to go a specific way. That entailed hiring a mix of finance and industry professionals (equity, debt and funds) that could ensure that the bank could undertake any kind of transaction.

An institution with a significant government stake can improve mobilisation

The 'halo' effect of government ownership helped attract other funders into transactions, for two main reasons:

- for renewables which rely on stable government policies (e.g. feed-in tariffs, etc.), it helps provide comfort that the government will remain consistent on these policies; and
- some banks thought if the government-owned entity invested in a transaction, that the government may support the underlying project if it got into difficulty to avoid the GIB losing money.

Even though the government was under no obligation to do either, the market perceived there was a benefit to GIB's involvement in a transaction.



ANNEX L : USA – THE CONNECTICUT GREEN BANK (CGB)

L.1. BACKGROUND AND ESTABLISHMENT

The CGB is the first US green bank, established by the Connecticut General Assembly on July 1, 2011 as a part of Public Act 11-80.¹⁵³ Prior to 2011, the state had the Connecticut Clean Energy Fund and the Clean Energy Finance and Investment Authority, which were given a broader mandate in 2011 to become the Connecticut Green Bank.¹⁵⁴

The CGB uses public funds to attract private capital into the deployment of clean energy in the state. Since its inception, the bank and its private investment partners have deployed over USD 1 billion in capital for clean energy projects. The CGB indicates that, for every dollar of public funds committed, an additional USD 6 of private investment occurred in the local economy.

L.2. MANDATE

The bank was set up to support the Governor’s and Legislature’s energy strategy to achieve “cleaner, less expensive and more reliable sources of energy while creating jobs and supporting local economic development.”¹⁵⁵ Importantly, the CGB’s role is to support the implementation of public policy on clean energy in Connecticut by attracting and deploying private capital to finance the achievement of those goals.

The CGB defines “clean energy” as including “financing energy efficiency projects” and “alternative fuel vehicles and associated infrastructure.”

The bank is focused on the residential, commercial, industrial, institutional and infrastructure sectors.

Figure L-1- Connecticut Green Bank Mandate



Source: Connecticut Green Bank Website – About Us.

L.3. INSTITUTIONAL STRUCTURE

The CGB is divided into three divisions: Investment, Program, and Corporate.

The investment division is responsible for investing public funds into the clean energy market while attracting private capital to finance the clean energy policy goals for Connecticut. This includes the issuance of green bonds.

¹⁵³ Connecticut Green Bank Website. About Us. [Online]. <<https://www.ctgreenbank.com/about-us-2017/>>.

¹⁵⁴ Connecticut Green Bank Website. About Us. [Online]. <<https://www.ctgreenbank.com/about-us-2017/>>.

¹⁵⁵ Connecticut Green Bank Website. About Us. [Online]. <<https://www.ctgreenbank.com/about-us-2017/>>.



The program division is responsible for deploying capital to meet the clean energy policy goals for Connecticut. There are three sub-divisions within programs: residential; commercial, industrial, and institutional; and infrastructure.

The corporate division provides administrative, accounting, legal, marketing and operational support services to the overall business.

L.4. GOVERNANCE STRUCTURE

The CGB is a quasi-public agency created by state legislation and governed by a Board of Directors. The powers of the Green Bank are vested in and exercised by a Board of Directors that is comprised of eleven voting and two non-voting members.

Senior members of the board, including the Chairperson, are political appointees (in this case by the Governor of Connecticut) whilst other board positions are elected by the sitting members of the board. The President (CEO) of the CGB is hired by the board is also one of the non-voting members of the board.

The board has four Standing Committees (Audit, Compliance, and Governance; Budget and Operations; Deployment; and a Joint Committee of the Energy Conservation Management Board and the Connecticut Green Bank) with delegated responsibilities. In particular, the Deployment Committee has responsibility for the CGB's investment functions, although it requires board approval on transactions which are greater than USD 2.5 million in value.

L.5. CAPITAL STRUCTURE AND SOURCES OF FINANCE

The Green Bank is capitalised through a number of public – state and ratepayer – sources.

Table L-1: Connecticut Green Bank Sources of capital

Source	Description
Systems Benefit Charge	The Green Bank through C.G.S. § 16-245n(b) receives a USD 1 million surcharge called the Clean Energy Fund from customers of Eversource Energy and Avangrid. The fund has been in existence since the late 1990s. On average, the Clean Energy Fund cost households ten USD per year and generates about USD 27 million a year to support the Green Bank.
Regional Greenhouse Gas Emission Allowance Proceeds	The Green Bank receives a portion of Connecticut's funds from the Regional Greenhouse Gas Initiative. The Green Bank receives all of the state the Regional Greenhouse Gas Initiative funds for renewable energy and uses these carbon allowance proceeds to provide financing for energy improvement projects through its Commercial Property Assessed Clean Energy (C-PACE) program.
Special Capital Reserve Fund	As part of C.G.S. § 16-245n(d)(1)(C), the Green Bank has access to the Special Capital Reserve Fund, which allows quasi-public agencies to issue bonds for self-supporting initiatives that are backed by the State. This lowers the cost of capital for the initiative. The Green Bank has received USD 100 million in Special Capital Reserve Fund authorization for bonds issued for clean energy programs.
Connecticut State Treasurer's Office	The Green Bank works with the State Treasurer's Office to explore opportunities to co-invest in projects that can deliver appropriate risk-adjusted returns for Connecticut pension assets, reduce the emissions of greenhouse gases, and contribute to job creation.

Source: Connecticut Green Bank Comprehensive Plan Fiscal Years 2017-2019.

Alongside the funds the CGB receives from the State of Connecticut, it also has access to and/or expects to pursue US federal funds, including stimulus monies, revolving loan funds, and competitive grant solicitations as well as loan guarantees, in order to bring private capital to these sources. The CGB is also able to issue revenue bonds to support its investments and to participate in joint ventures and PPPs.



However, it has been reported in 2018 that the CGB has been undermined in its ability to administrate and deliver clean energy programmes by State government decisions to cut funding which was earmarked for these programmes. The CGB can also borrow to finance its activities, but the withdrawal of key funding streams has reportedly led to concerns amongst potential lenders.¹⁵⁶

L.6. FINANCING ACTIVITIES

The CGB runs programs which serve homeowners, building owners, multifamily housing, residential contractors, commercial contractors, towns and cities, as well as partnerships with other capital providers. These programs are summarised in the table below. The combine both the provision of finance and technical assistance. The CGB's financing activities are summarised in the table below.

Table L-2: Program financing activities

Program	Description
Homeowners	
Smart-E Loan	Low interest loans to upgrade home energy performance.
Residential Solar Investment Program	The Residential Solar Investment Program provides rebates that lower the initial out-of-pocket costs to homeowners who wish to install a solar photovoltaic system.
PosiGen Solar + Efficiency for Low-to-Moderate Income Homeowners	In partnership with the Connecticut Green Bank, PosiGen offers to low-to-moderate income homeowners a solar lease that also combines money-saving energy efficiency measures.
Building owners	
C-PACE	Commercial Property Assessed Clean Energy (C-PACE) lets building owners pay for green energy improvements over time through a voluntary benefit assessment on their property tax bill. It is structured so that energy savings more than offset the benefit assessment.
C-PACE New Construction	C-PACE New Construction provides accessible and affordable financing for developers to build higher performing, and more cost-effective and competitive buildings.
Multi-family housing	Technical assistance to make smart energy upgrades, secure financing, rebates, and incentives and track performance and savings.
Residential contractors	
Smart-E	Long-term, low-interest financing through participating lenders to help Connecticut residents make home energy improvements. It can finance more than 40 different kinds of upgrades, including HVAC improvements, fuel conversions, and solar photovoltaic systems.
Multifamily Energy Financing Programs	The bank has a number of programs to assist multifamily owners save money on operating and energy costs.
Residential Solar Investment Program	Incentive structures to help homeowners invest in solar energy. The two incentives include: <ul style="list-style-type: none">• The Expected Performance-Based Buydown incentive (Rebate) for homeowners purchasing a solar system from an Eligible Contractor. The Contractor presents the rebate as

¹⁵⁶ Hartford Business (August 2018) "CT Green Bank takes novel approach to preserve clean-energy mission" available [online]: <http://www.hartfordbusiness.com/article/20180806/PRINTEDITION/308029956/ct-green-bank-takes-novel-approach-to-preserve-clean-energy-mission>





Program	Description
	<p>an upfront cost reduction to the customer and is reimbursed by the Green Bank upon completion of the project.</p> <ul style="list-style-type: none"> The Performance-Based Incentive is designed to allow homeowners to benefit from solar photovoltaic systems for little to no upfront cost. An Eligible Third-Party Photovoltaic System Owner owns the system and enters into a contract with the homeowner. The Performance-Based Incentive is paid to the System Owner based on actual performance over the course of six years and is used to reduce the homeowner's monthly cost.
Working Capital	The bank offers lines of credit secured by ongoing cash flow, project finance, and accounts receivable.
Commercial contractors	
C-PACE	Commercial Property Assessed Clean Energy (C-PACE) lets building owners pay for green improvements over time through a voluntary benefit assessment. C-PACE enables contractors to offer 100 percent up-front financing with no money down and design comprehensive projects that are immediately cash flow positive.
Multifamily Energy Financing Programs	The bank has a number of programs to assist multifamily owners save money on operating and energy costs.
Towns and cities	
Lead by Example	Energy Savings Performance Contracts. The town/city agree to implement a set of energy efficiency and renewable energy measures and those measures are guaranteed to save enough money to finance their full cost. Connecticut Green Bank assists the Department of Energy and Environmental Protection provide pre-qualified contractors, significant technical support and standardized contract documents help to streamline the process.
Solarize CT	Coordinated outreach, education and marketing, combined with competitive pricing for homeowners, to expand solar in communities across the state.
C-PACE Municipalities	An economic development tool for cities and towns focused on energy upgrades to create a more competitive environment for attracting and retaining businesses through lower energy costs.
Capital providers	Partnership opportunity with local lenders and capital providers to work on green energy.

Source: Connecticut Green Bank website.

L.7. PROJECT PREPARATION AND TECHNICAL ASSISTANCE

The CGB provides technical assistance to real estate investors, providers of affordable housing and local municipalities on a range of issues including, for example, resources for improving rooftop solar photovoltaic permitting procedures. It can also provide funding for project level technical assistance and feasibility studies.

L.8. PERFORMANCE MONITORING

The CGB undertakes extensive evaluation and reporting of the impact of its programs. It has established an evaluation framework to guide these assessments, covering (but not limited to): energy savings and clean energy production and the resulting societal impacts or benefits arising from clean energy investment. These studies are available on the CGB website.



L.9. KEY LESSONS LEARNED

In its seven years of operation, the CGB and its private investment partners have deployed over USD 1 billion in capital for clean energy projects across the state, crowing in an additional USD 6 in private investment for every USD 1 of public funding.¹⁵⁷ It is cited by the Green Bank Network as a leading example of effective local green bank initiatives.¹⁵⁸

As with other NIBs, one of the key lessons from the CGB is the importance of developing internal expertise in clean energy which other commercial investors may not have developed (for example, in fuel cell technology). It is also suggested that the CGB was able to take a more flexible approach to risk than institutional capital which may be constrained by legacy credit policies and regulatory oversight which might constrain innovation. By mitigating certain project risks, the CGB helped to demonstrate emerging technologies and develop the market to a point where private capital is willing to invest.¹⁵⁹

More so than NIBs, sub-national facilities may have more limited resources which requires greater efficiency. Although the CGB experience is clouded by recent cuts imposed by the State government, which is likely to have resulted in allocating greater priority to the most effective programmes, its efficiency is also likely to have been boosted by the requirement to invest in programmes which generate reasonable returns and allow the institutions to be operationally sustainable over time.

Finally, the CGB demonstrates that state-backed NIBs can play an important role in addressing distributional issues, such as the barriers which prevent low-income homeowners from adopting clean technologies, including the actual or perceived higher risk of default.¹⁶⁰

¹⁵⁷ Connecticut Green Bank Website. About Us. [Online]. <<https://www.ctgreenbank.com/about-us-2017/>>.

¹⁵⁸ Green Bank Network. Connecticut Green Bank. (June 2018). [Online] <<https://greenbanknetwork.org/connecticut-green-bank/>>

¹⁵⁹ Clean Technica. More Than USD 1 Billion Provided By Connecticut Green Bank For Clean Energy Projects. September 2018. [Online] <<https://cleantechnica.com/2018/09/26/more-than-1-billion-provided-by-connecticut-green-bank-for-clean-energy-projects/>>.

¹⁶⁰ Clean Technica. More Than USD 1 Billion Provided By Connecticut Green Bank For Clean Energy Projects. September 2018. [Online] <<https://cleantechnica.com/2018/09/26/more-than-1-billion-provided-by-connecticut-green-bank-for-clean-energy-projects/>>.





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CONTACT US GLOBAL INFRASTRUCTURE HUB

P: +61 2 8315 5300

E: contact@gihub.org

W: gihub.org



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