

# CREDIT ENHANCEMENT FOR GREEN PROJECTS

Promoting credit-enhanced financing  
from multilateral development banks  
for green infrastructure financing

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**Madhu Aravamathan  
with Marina Ruete  
and Carlos Dominguez**

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### Head Office

161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4  
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: [www.iisd.org](http://www.iisd.org)

### Geneva Office

International Environment House 2, 9 chemin de Balexert, 1219 Châtelaine, Geneva, Switzerland  
Tel: +41 22 917-8373 | Fax: +41 22 917-8054 | Website: [www.iisd.org](http://www.iisd.org)

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## Executive Summary/Methodology

This paper seeks to identify, review and understand credit-enhancement schemes provided by multilateral development banks and international financial institutions. It does this to determine, through the analysis of case studies, the applicability of such credit-enhancement mechanisms to infrastructure and green infrastructure projects. This analysis is intended to provide a basic notion of the challenges faced by the various participants in obtaining and assigning financing for both infrastructure and green projects.

The paper starts by defining its central terms, infrastructure and green infrastructure. This first chapter briefly reviews the terms to underscore the fact that the difficulty in defining them reflects the complex nature of the projects seeking investment. It then continues with an overview of traditional credit-enhancement schemes, with a more specific look into the schemes offered by various multilateral development banks. Chapter Three then analyses, through three examples of successful credit-enhancement schemes for both general and green infrastructure projects, the possible applications of such schemes for future projects. The paper concludes with a summary of challenges identified and goals for the future.

While this paper is based on policy and research, interviews with relevant personnel at multilateral development banks were extremely helpful in providing a perspective on internal processes, investment goals, green infrastructure promotion and general practices regarding infrastructure development.

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- Vivek Rao, Senior Project Officer, Asian Development Bank
- María Netto Schneider, Lead Capital Markets and Financial Institutions Specialist, Inter-American Development Bank
- Malik Faraoun, Principal Investment Officer, Infrastructure Finance and PPP, African Development Bank
- Martin Berg, Investment Officer, Climate Change & Environment, New Products & Special Transactions, European Investment Bank

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## Introduction

The year 2015 brings important discussions on infrastructure development. The G-20 summit in late 2014 put infrastructure in the limelight with the setting up of the Global Infrastructure Hub that could help unlock private infrastructure spending and governments recommitting to help bridge the infrastructure gap. This year is also the setting of the Sustainable Development Goals (SDGs) by the UN General Assembly in which all stakeholders will participate. Some of these SDGs<sup>1</sup> expressly relate to infrastructure and public-private partnerships, highlighting their significance in the upcoming years. The World Economic Forum (WEF) in 2015 also focused quite heavily on infrastructure development benefits and means to achieve the same with increased private investment.

This paper looks at infrastructure development from a definite angle. We review and consider the credit-enhancement schemes provided by multilateral development banks (MDBs) and international financial institutions (IFIs). While infrastructure as a whole is a concern, this paper examines it with a view to promoting credit-enhanced financing from such institutions for green infrastructure projects. With increasing climate challenges and need for infrastructure development, it is necessary for countries to embrace growth in terms of green projects. This focus is borne out of a need to mainstream green infrastructure developments and provide them greater access to the sizeable private funding available. The usually accessible sources of financing, such as debt financing (commercial loans or bonds) or government support (subsidies) are insufficient to meet the global target for infrastructure investment and particularly green infrastructure. This is exacerbated by the reality that green infrastructure presents different and new risks (and the perception that its risks are more plentiful and severe) that need to be mitigated. Credit-enhancement instruments are facilitators of access to private funding—they raise the credit standing of projects, enabling them to attract various other sources of financing.

The issue of leveraging private financing for infrastructure was also raised at the WEF, where a dedicated solution was mooted—a special entity capitalized by donor countries, private banks and IFIs that would provide partial guarantees to cover risks in projects. This is an excellent proposition, which, if implemented, would address several financing concerns. However, at present, it is important to maximize the available sources of financing and credit enhancement. This is especially important in an era where the funding of green infrastructure projects is being thoroughly scrutinized. Attracting new and sizeable investment to finance green projects is a difficult proposition, but one that can be achieved through understanding and application of existing and new methods of financing.

This paper provides an overview of the mechanisms available under credit-enhancement schemes provided by MDBs and IFIs in order to understand how they can be used to garner greater private sector investment. While a variety of credit-enhancement products have been floated by MDBs and IFIs, they are not deployed to a large extent due to several factors. A brief review of successfully credit-enhanced projects presents anecdotal evidence and potential for future projects in mitigating risk and obtaining private financing. Greater progress can be achieved with a more effective utilization of these instruments through innovative combinations, knowledge dissemination and entrenched partnerships between MDBs, project developers, private banks and governments.

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<sup>1</sup> The SDGs have been built upon to further the Millennium Development Goals and specifically refer to infrastructure development in Goals 7, 9 and 11.

# CHAPTER 1. GREEN INFRASTRUCTURE FINANCING



# Chapter 1. Green Infrastructure Financing

## Defining Matters

Governments have benefited from private sector involvement in infrastructure projects boosting many times the number of available resources and, hence, of projects. The large investment associated with infrastructure projects has both daunted and lured investors at the same time.

While defining infrastructure is a complex endeavour, it can generally be construed as including “facilities, structures, equipment, or similar physical assets – and the enterprises that employ them”.<sup>2</sup> The term “infrastructure” alone lends itself to circumstantial definition by determining whether or not a specific structure will be developed on the basis of its characteristics. It could refer to both physical<sup>3</sup> and social infrastructure<sup>4</sup> together when referring to government responsibilities but independently when considering potential investment opportunities. For the purposes of this paper, the term “infrastructure” refers only to physical structures and not social infrastructure.

The size of infrastructure projects and the large investments that they entail make them inherently complex and beset with hurdles for investors, financiers, governments and the many stakeholders the structure allows. Risk assessments, coordination of roles, visualization of the implementation phase, and other legal, administrative and political problems scare investors and financiers away from these projects. Over the last couple of decades, myriad innovative financial models have appeared tailor-made for the actors’ needs or conditions, sectors, type of infrastructure, country or region particularities, among others.

While it is imperative to provide a comprehensive definition of the term “green infrastructure” in order to develop a case for extensive credit-enhancement mechanisms among other financing methods, it is also important to understand the evolving and competitive nature of such a definition. The definition of green infrastructure also varies on the basis of context and depends on several different factors—some of the more obvious are the institutional or academic purpose, the intended audience or the results expected, or whether it is an investment or ecological discussion. It is imperative for green infrastructure to develop to accommodate the changes and challenges arising out of new green technological advancements, which in turn evolve from a greater understanding of the environmental concerns and issues. A narrow definition of “green” risks excluding such new creations, while one that is too broad might not be purposeful. The OECD, in its stocktaking exercise on what constitutes green investments, reviews the types of definitions and their features to suggest that an “open and dynamic approach” and a “competition of definitions and standards” may be a more productive strategy (Inderst, Kaminker, & Stewart, 2012, p. 7).

A non-exclusive list of infrastructure considered “green” for the purpose of this paper, includes:

- (1) *Low-carbon energy or energy-efficient infrastructure*: Infrastructure that includes processes that produce climate benefits.
- (2) *Renewable energy projects*: generation or derivation of “energy from natural processes (e.g. sunlight and wind) that are replenished at a faster rate than they are consumed. Solar, wind, geothermal, hydro and some forms of biomass are common sources of renewable energy” (International Energy Agency, 2015).
- (3) *Green buildings*: “Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building’s life cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and

<sup>2</sup> A Harvard Law School study by Larry Beferman and Allan Wain (2013), reviews the origin and contexts of the term “infrastructure” to provide a comprehensive definition: “Facilities, structures, equipment, or similar physical assets—and the enterprises that employ them—that are vitally important, if not absolutely essential, to people having the capabilities to thrive as individuals and participate in social, economic, political, civic or communal, household or familial, and other roles in ways critical to their own well-being and that of their society, and the material and other conditions which enable them to exercise those capabilities to the fullest.”

<sup>3</sup> The physical and organizational structures that form the backbone of any nation such as roads, dams, and power plants. Also see Beferman and Wain (2013).

<sup>4</sup> Social infrastructure includes provision of social services such as health care, education, emergency services and cultural establishments.

complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or high performance building” (Environmental Protection Agency, n.d.).

- (4) *Modified green*: The addition, modification or updating of existing structures to convert them from conventional or brownfield infrastructure to include features of green building.

## Green Infrastructure Financing

Global procurement trends are pushing the private sector to invest and finance in environmentally friendly products and services. Infrastructure needs to follow suit. Certain studies estimate that green infrastructure requires between US\$36–42 trillion in investments between 2012 and 2030 or 2 per cent of global GDP per year (Kaminker, Kawanishi, Stewart, Caldecott, & Howarth, 2013).

However, when adding this “green” characteristic to infrastructure finance, the already complicated nature of project finance is intensified. Some of the reasons why it is difficult to mobilize capital into these projects is that most government agents lack of knowledge about the risks and are unfamiliar with the gains of “greening” infrastructure.

Partnerships among governments, investors, financial institutions, civil society and international organisations are crucial for accelerating green infrastructure growth. However, there is a need for forward-thinking action plans to allocate the best knowledge, role and risk to each partner in order to increase value for money of green infrastructure projects.

Globally, public-private partnerships (PPP) are the most preferred method of sourcing private investment for infrastructure projects, though there are certain very specific methods and innovative initiatives when it comes to green infrastructure financing. According to the OECD (Kaminker et al., 2013) the different financing structures attracted by green infrastructure include:

- Indirect corporate investments such as corporate bonds, publicly listed equity and mezzanine finance.
- Semi-direct venture capital/private equity funds investing in green companies or straight into projects and asset-backed securities.
- Direct investment into green infrastructure projects through equity, debt or PPPs.

The systemic requirements of green infrastructure financing are often met through focused project or infrastructure development funds and viability gap funds.<sup>5</sup> From green infrastructure bonds<sup>6</sup> to PACE bonds,<sup>7</sup> capital markets have participated in several new formats of raising funds for green infrastructure development. Bloomberg New Energy Finance (BNEF) has identified that a record US\$38 billion was invested in green bonds in the year 2014 alone; with both institutional (World Bank) and corporate bond issuers (Unilever, GDF Suez) stepping up their offerings (BNEF, 2015).

Participants in green infrastructure finance have diversified their investor base, with governments of developing countries seeking to green their infrastructure growth with inventive programs and partnerships. For example, India’s National Solar Mission is an example of green infrastructure being given top priority notwithstanding political changes; national interests are pushing Kenya’s Climate Change Action Plan towards greener infrastructure and Brazil’s sustainable climate-smart agriculture programs have been promoted heavily over the past few years (World Economic Forum, 2012; African Development Bank, 2011; Kaminker, Kawanishi, Stewart, Caldecott, & Howarth, 2013). The increased involvement of governments in promoting green growth has also lead to the formation of new and interesting structures for project developers to work with governments, MDBs and private investors. MDBs, for

<sup>5</sup> For a brief explanation of project development funds and viability gap funds, please see Box C in Chapter 2 below.

<sup>6</sup> The popularity of green bonds can be seen in its spread to developing markets. For instance, India launched its very first green infrastructure bond recently (“Yes Bank,” February 2015).

<sup>7</sup> Property Assessed Clean Energy (PACE) is a means of financing energy efficiency upgrades or installing renewable energy for existing buildings. For instance, the state of California launched the largest clean energy PACE program in the United States (September 2014) (Gerdes, 2012).



their part, have greater interest in investing in projects that are considered green or climate friendly, as defined by their internal processes. For instance, the Inter-American Development Bank (IADB) dedicates at least 25 per cent of its investment capital towards those projects that have a “climate positive impact” and the European Investment Bank (EIB) also has the same target of 25 per cent for projects considered green.<sup>8</sup>

These new structures entail the participation of many actors with different roles in risk taking. Pension funds, for example, which account for large amounts of capital, may be mandated to invest in green projects. Other private investors may have capital limits on the amount they invest in projects that do not receive top credit grading. However, green infrastructure poses high risks given its uncertainties. Governments are usually unable to bear all risks associated with such large infrastructure projects. It is then key for an enabling actor to be present in order to ameliorate certain risks and thus improve the standing of the project. This will in turn provide confidence to other investors about the project and the returns it is capable of producing. National and multilateral development banks have appeared on the scene as such credit enhancers of infrastructure projects, and particularly green infrastructure.

While there are differences in the present and perceived risks in regular infrastructure projects and green infrastructure projects, the internal processes at MDBs for risk assessment and financing these projects is quite the same or mostly similar.

#### **TEXT BOX A. DIFFERENT DEFINITIONS OF “GREEN INFRASTRUCTURE” BY DIFFERENT ACTORS**

##### ***Academy***

An interconnected network of natural areas and other open spaces that conserves natural ecosystem values and functions, sustains clean air and water, and provides a wide array of benefits to people and wildlife.

*Source: Benedict & McMahon (2006).*

##### ***International Institutions***

Creating more sustainable economies and communities by emphasizing that policies that favor environmentally sustainable growth should have a more prominent role in development criteria and plans.

*Baietti, Shlyakhtenko, Rocca & Patel (2012).*

A “competition of definition and standards” has the benefit of making productive use of the full breadth of knowledge available. It may be beneficial for climate change-related investing across the full range of opportunities, ranging from new funds for innovative ventures to moving the traditional economy into a greener direction.

There is a sizeable common intersection of the various definitions in terms of sectors (e.g., renewable energy), goods (e.g., lead-free fuel), services (e.g., water and waste management), technologies and processes (e.g., to enhance energy efficiency).

##### ***Regional and National Organizations***

A strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings.

*Source: European Commission, (2013), p. 3.*

Green infrastructure is an approach to wet weather management that uses soils and vegetation to utilise, enhance and/or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration and reuse.

*Source: US Environmental Protection Agency (2008).*

<sup>8</sup> Information gathered from interviews with personnel at the IADB and the EIB.

# CHAPTER 2. CREDIT ENHANCEMENT



## Chapter 2. Credit Enhancement

This chapter provides an introduction to different types of credit-enhancement mechanisms and a brief overview of those offered by MDBs. In order to understand the need for credit enhancement, it is first essential to review both the reasons for it and the risks inherent in infrastructure projects.

There has been increasing demand for infrastructure development over the past few decades, with an increased focus on commensurate economic growth. With this demand came the requirement for innovative financing solutions for infrastructure projects, especially in developing countries. Also, developing countries present a financing gap, which has been widened as a result of the financial crisis and new banking regulations (Basel II and Basel III).

Infrastructure projects present a less-attractive option than other long-term projects. There are usually significant upfront costs involved (that may be even greater in green infrastructure) that are difficult to match with the project's cash flow over its life cycle as well as infrastructure-specific risks that are difficult to mitigate. Infrastructure projects also pose particularized risks that could differ depending on the borrower or investor. For MDBs and development financial institutions, the main risks arise from lending to sovereign and sub-sovereign entities. These could range from (a) political risks (regulatory risk, permits and permissions risk, expropriation risk, market-distortion/corruption risk),<sup>9</sup> (b) credit risk (tariff risk, cash flow risk, interest rate risk), (c) environmental risk (d) technical/technological risk (especially new technology risk for green infrastructure) and other forms of risk. The degrees of influence of these risks is inherent based on:

- (1) The type of borrower (sovereign or sub-sovereign entity, SPV).
- (2) Nature of the project (contracts—such as Build-Operate-Transfer or “BOT,” limited recourse, revenue based lending—sectoral differences between roads, power, green infrastructure that cause technical and physical risks).
- (3) The issues in the country where it is deployed (some developing countries have specific issues such as political uncertainty, lack of a developed financial market, etc.).

In addition to the risks set out above, green infrastructure projects face specific challenges. A recent CPI paper looks at the classification of green investment risks perceptions, noting that when it comes to green infrastructure, the political risks are amplified due to the increased reliance on public support; technological risks are complicated by the overwhelming presence of new, cutting-edge technology that is untested in markets to inspire sufficient confidence; and the long payback periods combined with high upfront costs increase the market and commercial risks (Frisari, Herve´-Mignucci, Micale, Mazza, 2013).

Credit-enhancement schemes respond to the demand to mitigate the risks of the project and attract further financing and investment to the project. It is an external mechanism that seeks to increase the credit rating/credit worthiness of the financeable aspects of an infrastructure project. The main objective of a credit-enhancement mechanism is to ameliorate the credit quality of infrastructure projects that have already achieved a certain minimum threshold, in order to attract more private financing for the project. The various mechanisms typically employed by multilateral banks and development financial institutions are detailed in Boxes B and C below.

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<sup>9</sup> A recent report (WEF, 2015) by the World Economic Forum analyses the various types of political and regulatory risks in infrastructure projects and methods for their mitigation. The report looks at the risk landscape in different phases of the project (planning/ construction, operation and termination) and identifies political and regulatory challenges that need to be mitigated, such as the risk of cancellation or change of scope of project, environmental permits, local community opposition, expropriation, breach of contract, regulatory changes, taxation changes, judicial and corruption risks.

## **TEXT BOX B. GUARANTEES AS CREDIT-ENHANCEMENT MECHANISMS**

Guarantees are used in project finance to stabilize financing and reassure the lenders and investors they will be repaid. Guarantees usually have easy triggering methods in case of default. As credit-enhancement mechanisms, the different types of guarantees available seek to cover a specific risk or portion of the debt.

### ***Partial Credit Guarantee (PCG)***

A partial credit guarantee is created to absorb part or all the debt service default risk of an infrastructure project, irrespective of the cause of default. This is particularly helpful to improve a project's credit profile, enabling it to garner a wider array of investors and better terms for the debt agreement.

PCGs can be used for any commercial debt instrument (loans, bonds) from a private lender. The existence or proposed implementation of a PCG is indicative of confidence in the product being floated by the government and can even assist in bringing new lenders to the table.

### ***Political Risk Guarantee (a.k.a. Partial Risk Guarantee) (PRG)***

PRGs cover private lenders and investors for certain risks of lending to sovereign or sub-sovereign borrowers. Thus, by definition, a PRG necessarily needs to include private participation in the project.

A PRG can cover a number of sovereign or sub-sovereign risks such as currency inconvertibility, political force majeure such as war, regulatory risk and government payment obligations (such as tariffs). PRGs are used quite often and favourably in green energy/energy efficiency projects.

## **TEXT BOX C. OTHER CREDIT ENHANCEMENT MECHANISMS**

### ***First-loss provisions***

First-loss provisions refer to any device designed to protect investors from the loss of capital that is exposed first if there is a financial loss of security. These could be debt, equity or derivatives instruments such as cash facilities or guarantees. They could also take the form of monoline insurances that insure debt security providers who are liable to pay compensation to the investors, irrespective of the cause of the loss. This helps by shielding investors from a defined initial amount of losses, thereby improving the creditworthiness of an investment.

### ***Contingent loans***

Contingent loans are often used in project finance to backstop the main debt by providing a payment option for specific case scenarios (for instance, in case of a failure of the government to obtain quality cash flows, the contingent loan is triggered and investors paid). This mechanism is extremely helpful, especially since the provision of a loan contingent on the risks that private investors would not want to take on creates a more conducive atmosphere for government projects to be invested in.

### ***Viability gap funding (VGF)***

VGF is used specifically and heavily in infrastructure to cover for the heavy upfront funding that is required to kick start projects. An analysis of the viability of a proposed project points out the weak areas that prevent large-scale funding from being obtained. A VGF scheme can be implemented through capital grants, subordinated loans or even interest subsidies to target specific issues that are affecting the viability of the project. For instance, if the long-term acquisition of tolls from the project is a deterring risk, then a grant or guarantee from the government in the PPP road project increases the viability of the project to obtain private investment.

Some infrastructure finance specialists also include A/B loans or grants in the definition of credit-enhancement mechanisms. Under the A/B loans programs, MDBs offer the “A” portion of the loan while attracting other lenders to join in a second (or “B”) tranche. The MDB will be the lender-of-record, lead lender and administrative agent in the transaction. The benefit to the additional lenders (the “B” lenders) is that it reduces part of the risks of the operations, by also being covered by the “umbrella” of the MDBs that include a preferred creditor status and de jure immunity from taxation.

Often, these mechanisms are used in combination (with each other or other financing schemes) to achieve a more effective project. For instance, for Chilean toll road construction, the IADB provided a blend of financial guarantee and an A/B financing in bond transactions. The resultant guarantor-of-record structure extended the preferred creditor status to monoline insurers thereby giving risk protection that allowed private insurers to enter the market. Similarly, to support a pipeline project in West Africa, the World Bank offered a partial risk guarantee while the Multilateral Investment Guarantee Agency (MIGA) offered political risk insurance that would cover payments owed by the government (Matsukawa & Habeck, 2007).

Another example of credit-enhancement mechanisms being used in conjunction with other structures is the Global Energy Efficiency and Renewable Energy Fund (GEEREF) launched by the EIB, which includes a first-loss provision by donors to cushion risk absorption for senior lenders and private investors. This system uses credit-enhancement techniques within detailed equity structures to achieve greater coverage of potential projects.

The purpose of credit-enhancement schemes is to identify the weaknesses in the financial viability of a project and improve them to make it more attractive to investors and financiers. Private debt finance sources usually come from bond investors (e.g., pension funds, insurance investors, private debt funds) and commercial banks. Such private financiers are look for investment-grade rated projects, which means that high-risk projects (including infrastructure projects) are not of interest to them. The participation of the private sector is key for the viability of infrastructure projects. Without the assistance provided by credit-enhancement mechanisms, many projects remain unfeasible and unable to garner private financing. The weakening of the global economy with increased austerity measures and decreased investment capacity, new banking regulations under Basel II and Basel III, and the perception of high-risk in infrastructure projects have kept private investors away, especially in developing countries.<sup>10</sup>

Unlike direct lending, credit-enhancement schemes: (1) may improve credit rating and/or interest rates of the project; (2) may raise the profile of the project by boosting confidence in the creditworthiness of the project. Both these characteristics further the chances of future investments. These benefits are crucial in their ability to mainstream financing and investors into infrastructure projects.

## Multilateral Development Banks – Credit-enhancement schemes

MDBs have traditionally deployed funds in the form of loans, investment or capacity building. The years of experience and knowledge of the demands in countries have opened their field of work to other financial products, including credit-enhancement products, which have increased over the last decade.

The World Economic Forum recommended in 2006 that MDBs activities “should shift over time from direct lending to facilitating the mobilization of resources from the world’s largest private saving pools—international or domestic—for development-oriented investments through . . . wider use of risk mitigation instruments to alleviate part of the risk faced by investors (World Economic Forum, 2006). This focus has not shifted completely, but MDBs are offering credit-enhancement mechanisms as part of the portfolio of products to their member countries.

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<sup>10</sup> The main concerns for infrastructure financing arising from Basel III are due to the requirements under the Liquidity Coverage Ratio, the Net Stable Funding Rule and the treatment of interest rate swaps. These three issues are especially potent for green and energy efficient projects (such as renewable energy projects) that involve high up-front costs, are structured through SPVs and necessitate long pay-out periods.

When an infrastructure project proposal is put forth to an MDB, its chances of success are increased if it identifies specific substantial risks that could benefit from credit-enhanced lending. For instance, if a power plant project suffers from a significant risk of continuing subsidies, the project proposal should identify this risk. This proposal could then have a greater likelihood of obtaining a PRG or a PCG to cover the subsidy risk to make the project more financially attractive.

Also, in the case of green infrastructure, MDBs skills and capabilities are used to provide confidence to the private sector. Its participation “raise and deliver concessional climate financing at a significant scale to unleash the potential of the public and private sectors to achieve meaningful reductions of carbon emissions and greater climate resilience” (Climate Investment Funds, 2008b). Once MDBs offer credit enhancement for a project, it demonstrates to other market investors that the project is viable and thereby catalyzes private sector investment. This has been the case of a wind energy project in Oaxaca, Mexico where IADB, IFC and Clean Technology Fund (CTF) funds were used to overcome the barriers to investment of the private sector leveraging over US\$500,000 of commercial resources (Climate Investment Funds, 2014). The involvement of MDBs in mitigating certain risks definitely boosts investor confidence. MDBs have the advantage of experience, reliability, credibility, knowledge of local markets and their proven track record of supporting long-term investments

It must be noted here that despite different risks present and perceived in regular and green infrastructure projects, MDBs mostly carry out the same risk assessment for both. In fact, the internal procedures for assessing credit-enhancement proposals and requests for direct loans are also similar.<sup>11</sup>

In order for this recognition and implementation to occur, it is important that developing countries are aware of the various options available to them. The following subsections describe some of the mechanisms and initiatives MDBs have developed in order to enhance financing in infrastructure.

## **African Development Bank (AfDB)**

The estimated infrastructure spending need in Africa to close the infrastructure gap with other developing countries is US\$93 billion a year (15 per cent of the region’s GDP) for the decade from 2010–2020. Existing official development finance will not be enough to cover the current financing gap needs. It is necessary that it be filled by private investment (African Development Bank, 2013) and, hence, it is essential to create new mechanisms to attract investors. Over the past decade, the AfDB’s lending environment became more responsive to the changing needs of the borrower countries to provide them flexibility and choice. The introduction of guarantees by the AfDB in 2004 opened up new opportunities for borrowers who could then access lending from third parties, including local commercial banks.

### ***Guarantees***

The AfDB has successfully implemented PCGs and PRGs in various African projects through the African Development Fund’s initiatives over the past two years. A significant example of these efforts is the PRG provided to coal-based independent power plants in Nigeria, enabling local private investors to come into the projects (AllAfrica, 2014).

### ***Risk-Mitigation Initiative***

In 2012, the AfDB introduced the Initiative for Risk Mitigation in Africa (IRMA), recognizing that projects in various African countries are in dire need of specific assistance and intending to encourage the effective use of the AfDB’s existing and proposed risk-mitigation services. IRMA has identified various types of risks, including political risk, credit risk, project development risk, foreign exchange risk, etc.) and correlated them with instruments offered locally and globally to counter them.

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<sup>11</sup> This information was gleaned from interviews with officials at major MDBs such as the World Bank, ADB, AfDB, IADB, EBRD and the EIB.

The survey conducted by the IRMA has been helpful in recording results demonstrating that there is a continued perception of unacceptable levels of risk across African countries that does not match the increased demand for investment. The survey and paper then helpfully identify next-step solutions for addressing risk-mitigation gaps. These include increased effectiveness of existing public sector risk-mitigation mechanisms (through marketing, dedicated product specialists and integrating the programs into the country fabric) and increased participation in programs initiated by various development finance institutions.

### ***Project Bonds***

In the trend of the Project Bond Credit Enhancement (PBCE) scheme introduced by the European Investment Bank (see below), the AfDB sees the value in supporting project bonds. The promoters of the “Africa 50 Fund” established in 2013, intends to establish two arms, project development and project finance. The latter is intended to focus on delivering, among others, credit-enhancement and other risk-mitigation mechanisms similar to that of the PBCE floated by the EIB.

## **Asian Development Bank (ADB)**

In order to try and address the massive US\$8 trillion infrastructure gap for 2010–2020, the ADB has identified and floated several different types of credit-enhancement products. While the first guarantee was issued by the ADB in 1988, the products have evolved and become more sophisticated over the years. In 2006, the Asian Development Bank re-launched its credit-enhancement products policy with the aim of attracting more potential users. These products were now more flexible and had a broader application (Asian Development Bank, 2011). Generally, they can be classified into guarantees to cover credit and political risks of debt instruments and syndications to reduce credit exposure by transferring some of the risk to financing partners. A majority of the guarantees issued by the ADB cover borrowing in local currency, which facilitates local financing where full direct loans are impractical.

### ***Guarantees***

The ADB typically offers guarantees including PRGs and PCGs. In 2012 the ADB supported infrastructure project bonds in India by providing a backstop guarantee facility of up to 50 per cent of the India Infrastructure Finance Corporation Limited (IIFCL)’s underlying project risk to cover four to five projects in the pilot phase of the scheme (Asian Development Bank, 2012).

### ***Syndications***

What ADB defines as Complementary Financing Scheme is “a form of loan syndication whereby ADB acts as lender-of-record (LOR) but sub-participates the loan to one or more banks that are providing the financing” (Asian Development Bank, 2006). The ADB also acts as Guarantor-of-Record where it “fronts” a guarantee contract for the entire amount of the guarantee and then transfers all the exposure to one or more insurers who end up underwriting the risk in the project. The ADB also presents credit-enhancement schemes that contain “sell-down” arrangements wherein the ADB can transfer certain risks it has undertaken through transfers, assignments or novations.

## **European Bank for Reconstruction and Development (EBRD)**

The EU goal of spending EUR100 billion on infrastructure by mobilizing public and private investment is a serious commitment that requires new methods to tap resources. A slow recovery and low growth figures further complicate the achievement of this target. The EBRD has consistently been providing focused financing for infrastructure projects across the EU.

The EBRD also has several initiatives focusing on infrastructure development alongside the credit support systems they provide. They have consistently provided co-financing, guarantees and syndications over the years, but have a

renewed interest in credit enhancement recently. In January 2015 at the World Economic Forum in Davos, the EBRD floated the novel idea of setting up a fund capitalized by donor countries and MDBs that would be a partial guarantor for infrastructure projects to provide a rating upgrade to attract institutional investors. This fund would be, when implemented, a go-to setup for projects that would not be viable without assistance.

### ***Syndications and Guarantees***

The EBRD routinely lends support to various infrastructure projects in the region for risk sharing through “B” loans or guarantees. The EBRD has employed credit-enhancement schemes quite heavily in its operations in the municipal environment infrastructure (MEI) sector. In MEI, the EBRD has provided support through a broad range of financing instruments that include credit-enhancing instruments such as junior debt, guarantees and targeted credit lines (EBRD, 2013).<sup>12</sup> The goal, especially with the MEI sector, is to help transition the government to private sector investments.

### **European Investment Bank (EIB)**

The EIB has a long history of providing supportive mechanisms to projects. Some of the products include structured finance instruments (for example, senior loans and guarantees incorporating pre-completion and early operational risk), guarantees, and more recently, project bonds. In addition to these “blending” instruments, the EIB also focuses on extensive green infrastructure investment (through schemes such as the Private Finance for Energy Efficiency [P4EE] and Natural Capital Financing Facility [NCFF]) (EIB Products, <http://www.eib.org/products/index.htm>).<sup>13</sup>

#### ***Project Bond Credit-Enhancement scheme***

The EIB launched the Project Bonds Initiative in 2012 to address the European Union’s 2020 objective of investment of EUR2 trillion in infrastructure projects. The EIB will provide partial credit enhancement through a subordinated instrument, either a loan or contingent facility, to improve the credit quality of senior project bonds issued by the project company (“Senior Bonds”), and therefore increase their credit rating. This will be done by:

- a loan given to the project company from the outset (funded PBCE); or
- by way of a contingent credit line which can be drawn if the cash flows generated by the project are not sufficient to ensure Senior Bond debt service or to cover construction costs overruns (unfunded PBCE).

#### ***Contingent Loans***

The EIB has enabled the issuance of long-term bonds for PPP projects by providing a contingent loan (i.e., one that is to be used if the project is unable to repay the bondholders).

### **Inter-American Development Bank (IADB)**

The Latin American region requires investment of about 5 per cent of its GDP (an amount equivalent to US\$250 billion in 2010) to close the infrastructure gap. While some countries in Latin America see such investment in infrastructure as a means to boost GDP growth, others require infrastructure development for provision of basic needs (such as safe drinking water, electricity). The IADB provides several different types of financing to address these financing requirements.

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<sup>12</sup> For instance, the EBRD enters into Project Support Agreements for projects in the water sector which provides a quasi-guarantee of tariff shortfall. The experience of the EBRD in Romania is a good example of how PSAs helped transition the economy to a sustainable water production system that is now mainly funded by private sector investors (World Economic Forum, 2014).

<sup>13</sup> The NCFF is EUR125 million funding directed at projects that are focused on biodiversity and ecosystem services. Eligible projects can receive direct funding or intermediated debt financing. The P4EE targets projects that are energy efficient and provides them with different types of assistance such as credit risk protection, long-term financing and expert support services.



## **Guarantees**

The IADB provides PCGs and PRGs for the enhancement of bond issues, project finance or structured trade finance transactions and securities backed by assets or future flows. They also offer local currency guarantees to enable greater local lending and sovereign counter-guaranteed guarantees (the latter is a risk guarantee related to government contractual obligations in a project). Apart from these more traditional forms of guarantees, the IADB has recently begun to focus on ameliorating specific concerns such as construction risk in approved projects to attract private financing. The IADB also caters to risk mitigation for green projects through performance guarantees that address concerns for green infrastructure that may be unmet by credit guarantees.

## **International Finance Corporation (IFC)**

The credit-enhancement schemes offered by the IFC may have slightly different characteristics, since the IFC lends only to the private sector rather than the sovereign borrowers for the MDBs. This also means that there are some interesting products that the IFC has brought forth. The IFC has used PCGs quite effectively for several projects, but has also utilized new methods of providing lender confidence. The IFC has acted as anchor investor (the first investor in a public offering who instills confidence in the project) and pulled together the IFC Global Infrastructure Fund that seeks to fill the gap in the lack of funding in the sector. The IFC also provides interesting instruments such as a partial swap guarantee to enable certain cross-border transactions.

## **World Bank Group (World Bank, MIGA, IBRD)**

The World Bank provides several different types of guarantees such as PCGs (for public investment projects) to sovereign governments and PRGs for private projects (BOTs, PPPs, etc.) to cover debt investments. The World Bank also provides policy-based guarantees, which are essentially PCGs provided in support of commercial borrowings of governments for budget financing or in support of reform programs. In addition to these, MIGA provides political risk insurance to private sector companies or government-owned companies operating on a commercial basis.

# CHAPTER 3. CASE STUDIES ON CREDIT ENHANCEMENT



## Chapter 3. Case Studies on Credit Enhancement

While the availability of credit-enhancement schemes has been outlined above, their uptake has been quite limited. A number of reasons may be attributed to this, the most significant of which are:

- (a) A lack of knowledge among governments about the credit-enhancement schemes available when structuring transactions.
- (b) Undeveloped procurement decision-making, including precise feasibility studies, to put together large infrastructure deals, and identifying the risks to match them with the potential mitigation methods offered by MDBs.
- (c) When it comes to green infrastructure, the lack of understanding and technical inability to address these risks.

In order to understand what makes a successful project with a credit-enhancement scheme by an MDB, it is helpful to preview the stages that build up to it. Annex A to this paper provides a description of the common patterns of projects' internal processes of MDBs: the risk-assessment methods for large infrastructure projects at MDBs. This chapter looks at the requirements to compile a project into an approvable structure, through a case study of large, successful infrastructure projects, including green projects, that have received credit enhancement.

### Successful Credit-Enhancement Projects

An analysis of some successful credit-enhancement infrastructure projects sheds light on the variety and nature of proposals that are approved and implemented by MDBs.

All information and data presented below have been obtained from the project documentation listed for each project described.

#### ASIAN DEVELOPMENT BANK: India – IIFCL (2012)

##### *Background*

The first of these projects is the partial credit guarantee facility in India. It was identified that the infrastructure market in India was predominantly financed by the banking sector (infrastructure accounted for about 14 per cent of the asset book of the Indian banking sector in 2011). With the increasing need for long-term lending to the sector, it was seen as necessary to tap into funding apart from the traditional banking sector. The old-fashioned asset debt financing methodology in India required a makeover in order to tap other credit sources such as pension and insurance funds—this aligned with ADB's strategy of developing local debt markets to fund infrastructure by 2020.

##### *The Product*

Under this first-of-a-kind US\$128 million facility, developed with India Infrastructure Finance Company Limited (IIFCL), ADB and domestic finance companies will provide partial guarantees on rupee-denominated bonds issued by Indian companies to finance infrastructure projects. ADB will then take on a part of that guarantee risk, which will improve the credit rating of an infrastructure project to A or AA (ADB, 2012). This opens up the market to institutional investors such as pension funds that can only invest in assets graded AA or above, to buy the project bonds. This is the first such program implemented for bonds issued by private companies. The first project under the program to receive such an incentive is the GMR expressway linking two major cities in South India.

The project documentation (detailed in Text Box D below) is extremely helpful in identifying the main stages in the project.

### *The Significance*

The effects of this groundbreaking scheme are evidence of its success:

- (1) Development of the nascent bond market in India with a focus on infrastructure will lead to self-sufficiency in the future.
- (2) The partial credit guarantee intended to be provided for three to five projects over three years is more effective than direct lending for a single project.
- (3) Since the project is already in its operational phase, the risk it presents is that of tariff collection and traffic volatility for debt service repayment, which is guaranteed by IIFCL and ADB.
- (4) The participation of local approved financial institutions (which have government backing) ensures capacity building in the country. A particular distinction of this project has been the guarantees offered by local banks alongside IIFCL and ADB, since such programs are usually run only by high-level agencies or MDBs.
- (5) An additional feature relates to the indirect positive externalities offered by these projects in that it helps to develop local capital markets by being a source of more bond activity and it helps banks deleverage by passing the debt burden to institutional investors.
- (6) The efficacy of partial credit guarantees in the Indian market was recently commended by the Climate Policy Initiative, which concluded that PCGs can mobilize additional capital from pension and insurance funds and reduce cost of debt by up to 1.9 percentage points while also increasing tenor by up to five years for the developers (Shrimali, Konda, & Srinivasan, 2014).

This project is an excellent example of an effective credit-enhancement scheme utilized to not only remove impediments to financing, but also create a precedent for further mainstreaming infrastructure investment in the markets. While this project is for financing a normal infrastructure project, the ADB does not particularly differentiate between brownfield and green infrastructure projects. So long as the quality of the off-take agreement and the credit rating of the project is acceptable, the nature of the project will not affect its ability to garner credit-enhancement schemes. The first utilization of the PCG was for the Jadcherla Expressway by GMR Constructions, which will be rated AA by ICRA Ltd., an Indian credit ratings agency. The PCG scheme is to be extended to other identified infrastructure projects in India.

#### **TEXT BOX D. PROJECT DOCUMENTATION FOR THE IIFCL PROJECT**

The project documentation for the IIFCL project is helpful to understand the rationale for the success of the project.

##### ***Capacity Development Report – PCG Features:***

The first report provided upon project identification is prepared by CRISIL, the Indian arm of the international rating agency Standard & Poor, and outlines the characteristics of PCGs in general and past experiences of the ADB with PCGs in India. This is a vital document in that it convinces lenders of the value of the ADB's involvement in the project.

##### ***Progress report – PCG Structure and Mechanics:***

The second report, also prepared by CRISIL, advises the technical assistants to the project at the ADB of the structure and working mechanics of the PCG. This is extensive, covering the optimal PCG structure for IIFCL, a financial study of the bond portfolio, project outflows, and a breakdown of various case scenarios of issuing the PCG, including lessons learnt.

##### ***ESIA:***

IIFCL then prepared an environmental and social audit report of the first project for which the PCG will be employed.

##### ***Report and Recommendation:***

Finally, before the project is approved, the Report and Recommendation of the President to the Board of Directors is submitted. This outlines the research and strategy of the team, including detailed financial analysis that is presented to the Board to explain the risks that the ADB takes on, the mitigation systems in place and the importance of ADB's involvement in the project.

## **WORLD BANK GROUP: Nigeria – Power Sector Guarantees Project (2014)**

### ***Background***

While Nigeria's economic growth increased, there were fundamental issues with local infrastructure. Despite extensive oil resources, access to electricity was limited and an obstacle to conducting business in Nigeria. With limited fiscal resources, it was necessary to shore up private sector promotion along with public investment.

### ***The Product***

The Power Sector Guarantees Project (PSGP), launched in Nigeria by the World Bank, IFC and MIGA, seeks to address the total power sector deficiencies in Nigeria. The PSGP is a package of loans and guarantees supporting a series of energy projects.<sup>14</sup> The IBRD guarantees include forward-looking mitigation and risk-sharing arrangements, designed to augment the power sector reforms while building market confidence and setting industry benchmarks. The package also includes World Bank Partial Risk Guarantees and MIGA political risk insurance (details of these instruments can be found in Box E below).

### ***The Significance***

The PSGP is innovative because it has been implemented on an extremely large scale and combines several different instruments, including guarantees. The package includes two greenfield power projects that receive credit enhancement and commercial debt mobilization guarantees that seek to mainstream the green energy projects into Nigeria's growing economy. The second main instrument is a partial risk guarantee that covers only those clearly identifiable risks relating to subsidies and tariffs. The appraisal of the project led to the following conclusions regarding viability and impact that could have been the deciding factors:

<sup>14</sup> World Bank partial risk guarantees approved include up to US\$245 million for the 459-megawatt (MW) Azura Edo power plant near Benin City, Edo State; and up to US\$150 million for the 533-MW Qua Iboe plant in Ibeno, Akwa Ibom State. Both plants are gas-fired. The Boards of IFC and MIGA approved loans and hedging instruments of up to US\$135 million and guarantees of up to US\$659 million for the Azura Edo project.

- (1) The influence of the PGSP in developing the energy sector would have ramifications in the comprehensive development of Nigeria.
- (2) Given the scale of financing required, rather than provide direct lending, the credit-enhancement guarantees promote private sector investment.
- (3) The PRG provided by the IBRD to commercial lenders serves two vital purposes – it invites increased private investment and it reduces the exposure of the IBRD (as the government entity providing an indemnity to IBRD is buffered by the sale of government power projects).
- (4) The World Bank Group’s presence creates comfort for foreign institutional investors as well.

Credit-enhancement schemes given out by the World Bank Group are quite popular among African countries, especially for energy projects. The unavailability of commercial instruments encourages project developers to seek government or MDB assistance in reducing contractual risks. The World Bank Group, in collaboration with PPIAF, also provided assistance in project preparation stage-upstream phase for creation of feasibility studies, identifying risks and correct structuring for the same.

#### **TEXT BOX E**

##### ***Project Information Document (Concept stage):***

This document is prepared at the concept stage and reviews the status of the power sector and the issues it faces (including distribution, tariffs, systematic power purchase agreements). The paper outlines the proposed objectives and methodology.

##### ***Project Appraisal document:***

This is an extremely detailed document with information about the specific risks and their mitigation, the exact structure of the project and the role of each MDB in the same. The appraisal includes project mechanics, implementation methodology, financial and technical analysis and a look at the environmental and social safeguards.

##### ***Project Information Document (Appraisal stage):***

The World Bank then prepares a summary of the project, its context and description and proposed structure.

##### ***Chair summary:***

This is the document ultimately released by the Board at the World Bank confirming the approval of this project. The Board notes the high-risk, high-reward nature of the project and the importance of the involvement of the World Bank entities at the early stages to garner private investment.

## **INTER-AMERICAN DEVELOPMENT BANK: Mexico - Geothermal Project (2014)**

### ***Background***

The need to reduce carbon emissions through increased use of green energy sources was the basis of this project and its financing. Geothermal potential in Mexico is extremely high, and the development of this project would be in line with the objectives of the government in advancing the sector. The major issues that geothermal energy projects face, such as unpredictable exploratory costs, high upfront costs for the project and long maturity periods, could be ameliorated with the correct type of financing.

### ***The Project***

The unique challenges presented by the nature of the project and the specific risks associated with it required particularized solutions. The project deployed IADB resources to provide direct financial support to developers through various methods—direct loans, contingent loans, first-loss guarantees and insured loans (details of some project documentation can be found in Box F below). The intention is to create bankable geothermal projects to attract private funding and mobilizing capital to boost growth in the industry in the long term.

### ***The Significance***

This project is a notable example of innovative financing to address precise problems posed by green projects. The following are the takeaways from this project:

- (1) The risk-mitigation mechanism is based on the identification of a single specific issue (exploration costs) that requires attention in order to promote and develop local green energy.
- (2) The IADB uses a “loan-guarantee,” which is paid back only if the exploratory phase proves to be successful in finding enough energy sources. This ensures that the costs associated up front are not a deterrent for future investors.
- (3) This scheme not only promotes green energy growth, it also attracts private investment to fund such green projects.

#### **TEXT BOX F**

##### ***Indicative Information Technical Eligibility:***

This document is an initial standard form that reviews and answers queries on the project that indicate whether it is eligible for funding by the IADB.

##### ***Monitoring and Evaluation Plan, Financing schemes:***

These documents provide general details about the proposed project, its working schematics and plans for monitoring once implementation is complete.

##### ***Loan Proposal:***

This is a detailed document that describes the project, how it fits into the IADB’s goals, the risks associated with the project, their mitigation mechanisms and the implementation and management plan for the project.

##### ***Board Resolution:***

Upon receipt of the loan proposal, the Board confirms acceptance of the project and it is then administered.

# CHAPTER 4. RISK MITIGATION IN GREEN INFRASTRUCTURE





## Chapter 4. Risk Mitigation in Green Infrastructure

Credit-enhancement schemes are intended to target precise risks that infrastructure (or other projects) pose. As discussed in chapters 2 and 3 above, the nature of the project determines the risks, their perception and their mitigation. The identification of risks in a project occurs at the project appraisal stage, which then helps determine the type of mechanism that can be used in the implementation stage to ameliorate these risks. Though the exposure for an MDB differs for a direct loan (where it bears all risks as a lender) and a credit-enhancement mechanism (where it has limited coverage and receives an indemnity from the parastatal entity), the internal processes for both are the same. In fact, MDBs do not distinguish between the different types of projects (brownfield or green energy) or the different types of financing for processing assistance.

The real and perceived risks associated with green infrastructure projects are less attractive to commercial lenders. Green infrastructure projects also present technical issues that are often not understood by less sophisticated investors or in developing economies.

The importance of the three examples discussed above lies in the use of credit-enhancement mechanisms to address risks that prevent the project from being bankable. In the India-IIFCL project, the traffic and tariff risk prevented the roadways project from obtaining private uptake; while it was the combined regulatory, new-market and tariff pricing risk in the PSGP and the exploratory and upfront costs in the geothermal project. The credit-enhancement mechanisms used in each of these projects addressed the specific risk to make the project more attractive to private investors. The crucial element in each of these projects has been the identification of that troublesome risk, a potential solution offered by an MDB and the correlation and application of the two together. This is an important lesson for project proposal preparation for any infrastructure project, but in the case of green infrastructure it is an essential aspect.

# CHAPTER 5. CONCLUSIONS



## Chapter 5. Conclusions

There are several significant challenges for mainstreaming green infrastructure financing, in the road ahead through credit-enhancement schemes. But a review of the mechanisms available and an understanding of their successful operation—not only in infrastructure projects generally, but for green infrastructure in particular—provides an idea of how this road can be traversed.

The more general issues of lack of knowledge can be addressed and are being considered by several agencies, including MDBs. There are active efforts in marketing the new instruments to the potential investor pool along with workshops on the advantages of such instruments. On the preparation side, most MDBs provide extensive support in making feasibility reports through technical assistance teams that also participate in the project identification stages.

When it comes to green infrastructure specifically, it is imperative that knowledge dissemination take place at two levels. First, governments require technical assistance to understand the benefits of and promote green infrastructure project proposals. Second, investing banks need training to consider green projects and not be averse to the risks they present. The latter of these concerns is being addressed by some MDBs such as the IADB and the EBRD who give technical know-how to the local commercial banks they work with.

There is a need for greater uptake of credit-enhancement schemes, which can only increase if there is knowledge dissemination and endorsement of these schemes with both governments (who originate projects), MDBs (who provide the necessary mechanisms) and private investors (who are the final objectives of this process). An intensified relationship among these key players is crucial to strengthening the acceptance and implementation of credit-enhancement schemes. Governments need to take the first step in not only identifying suitable projects, but also the inherent risks involved. This enables the second player, the MDB, to work with the governments to devise a potential mitigation strategy for those specific risks. Only once these two stages are successful can enlightened investors step in to provide financing to larger number of projects.

There are several suggested means of improving the efficacy of existing credit-enhancement schemes. One such method is to create a combined pool of credit-enhanced investments that are aggregated according to the risks they represent. This would be effective for marketing to private sector investors, who will then have the option of buying into these risks in a fashion similar to that of insurance products. While this system would require extensive organization and coordination, it does have potential to make the uptake of credit enhancement schemes more widespread. Another promising endeavour is that mooted by the EBRD to pool resources for a dedicated funding system that focuses on providing risk-mitigating guarantees for infrastructure projects. The box below also lists some important questions that need attention in order to resolve the issues identified in this paper.

#### TEXT BOX G

While there are several initiatives by MDBs to promote credit enhancement, there have been some real obstacles in their practical application.\*

(1) In some countries (such as India), there has been reluctance from the local banks that finance infrastructure projects to accept credit enhancement of the project once it has started producing results. The credit-enhanced project will usually take on new investors, with the initially investing banks being repaid. Banks see this as a wasted opportunity, having sunk in the initial costs yet not able to realize the returns once the project is operational. It is to be questioned whether the banks are actually correct in their approach. The repayment of the initial debt frees up capital for investment in other ventures and encourages new and different forms of investment into infrastructure.

(2) MDBs have a single processing mechanism for all types of loan requests, whether it is a request for a full direct loan or credit enhancement. It may be helpful to review these processes to evolve simpler procedures for credit-enhancement mechanisms since they present lesser risks to the MDB or a parallel route with more guidance on structuring for credit enhancement of a project.

(3) Similar to the singular processing mechanisms for different types of loans, MDBs do not differentiate the risk assessment for green projects and other projects. Keeping in mind the differences in the real and perceived risks for green infrastructure projects (especially the reluctance amongst even MDBs to buy down technical risks), it could be helpful to have focused project approval mechanisms that cater to green projects. While a number of MDBs and IFIs have green investment targets, the processes for approval of funding for green infrastructure remains the same as other infrastructure, which may need to be reconsidered.

\* This information was gathered from the interviews with MDB personnel and through relevant research about the projects analyzed for the case studies in this paper.

The case studies above highlight the importance of the following:

- (1) Identify and iterate issues in projects. While there are challenges going in to any project (in terms of risks, perception of these risks, lack of knowledge, lack of coordination) it is necessary to recognize, iterate and classify these issues. This enables the second stage of planning amelioration.
- (2) Innovation is key. The input from various participants is crucial to creating a complex (such as the PSGP) or simple (such as the geothermal project) solution to mitigate risks.
- (3) Continuity of local development is an essential goal in all cases. The IIFCL project is an excellent example of promoting local future growth without constant MDB or other outside assistance.

While these are onerous tasks, they are the first step towards bridging the infrastructure gap. Especially when it comes to green infrastructure development, it is important to start early to ensure that all potential investors (whether they be large insurance funds looking to invest in climate friendly projects to reduce future potential claims or pension funds that have capacity to invest in credit-graded projects) are aware and equipped to mainstream green infrastructure financing.

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## Annex A. Internal Processes at MDBs

Most MDBs have similar internal configurations when it comes to dealing with projects in various countries. Broadly generalizing, it can be said that the team formation is as follows:

- A basic country unit within the MDB that deals with projects, issues and overarching goals of that country (for instance, at the ADB this is known as the country partnership strategy).
- The countries' government officers from various agencies that have liaisons with specialists from the MDB to identify areas of need for development.
- Expert teams at the MDBs that work exclusively on different areas of development irrespective of the country (such as green infrastructure, risk-mitigation mechanisms, financial institutions).

### Project Cycle

The projects financed by MDBs are originated and supervised according to predetermined project cycles. A number of documents produced during the different stages provide transparency of the MDBs' operations and serve as evidence in the monitoring processes. The complete project cycle is represented in Figure 1 below.

An analysis of the project cycles of MDBs also reveals similar procedural arrangements for the initiation and handling of loans and credit-enhancement schemes. In several of these MDBs, while they do contain focused departments for risk mitigation and credit enhancement, the processes through which proposals for direct loans and credit-enhancement schemes are run are comparable. A brief overview of the typical project cycle is set out below.

### The Country Strategy

This strategy constitutes the overall relationship between the MDB and the country within which medium- and long-term programs are established. It is inherently founded on development and poverty reduction aims. The strategy for each country, based on each bank's analytical work, is usually prepared in cooperation and consultation with government officials and other interested stakeholders (such as the private sector participants, civil society, NGOs and other development partners).<sup>15</sup> It contains the goals, requirements and development objectives for each country based on local studies and conferences.

### Project Identification

The MDB works with governments to identify feasible projects. During this exercise, basic elements including risks and the alternative scenarios for mitigations are already displayed. It is followed by environmental and social analyses to determine the impact of the project on the ground. Once the project has been identified and placed within the selected assistance program, various documents relating to the project are prepared by teams at the MDBs, including internal concept notes and safeguards analysis documentation.

### Preparation and Appraisal

The due diligence of the proposal will often be performed in consonance with outside consultants, reviewing the project, its effects and consequences. Preparation for the project includes analysis of all aspects of the project including technical, financial, economic and institutional concerns. This is typically the longest stage of the project. The MDB assesses the risks associated with the project to determine the nature of the lending.<sup>16</sup> Environmental and social impact assessments could be prepared at this stage. Detailed project risks and sensitivity analyses are developed to assess the viability of the project. During this phase, the MDBs usually provide support to the member

<sup>15</sup> At the World Bank this is called the Country Assistance Strategy, at the ADB it is the Country Partnership Strategy, and at the AfDB it is the Country Strategy Paper.

<sup>16</sup> Information gathered from MDBs officials informs us that the processes for a direct loan proposal are the same as those for other mechanisms such as credit enhancement.

country to collate and conceive relevant information for the project preparation. The appraisal is driven by the MDB through the preparation of internal documentation for approval of its management. This documentation is published after approval.

### Negotiation and Approval

Once the project has been appraised thoroughly by the MDB and the country, it enters the negotiation stage where the terms and conditions of the loan are decided. This stage is crucial since it requires the definition of the amounts and forms to cover the risks of the project. A credit-enhancement or loan proposal is submitted to the Board of Directors for approval. The country then enters into negotiation with the MDB as to the terms of the loan (the amount, financing plan, disbursements, execution and completion of the project).

### Loan Signing and Effectiveness

After the loan terms have been negotiated and approved within the MDB, it is then sent to the government of the respective country for approval from the relevant cabinet of ministers. Upon receipt of the confirmed loan documentation, the representatives from the MDB and the country's government sign it. Disbursement or effectiveness will usually happen after certain conditions of the agreement are met.

### Implementation and Supervision

The project is administered in the country together with technical assistance of the MDB and recruitment of project consultants as required. Tender documents are prepared to procure goods and services to carry out the project. This is performed following the MDB's procurement guidelines and under its supervision. The actual time period for implementation of a project varies depending on the nature of the project.

### Evaluation

Once the project has been implemented, a team from the MDB conducts evaluations of the project's progress to measure the outcomes against the terms set out in the loan. This is done at regular intervals, with the focus on the development in the country with the overall strategy as a lead. The completion of the project and the ongoing assessment of its status feed into the country strategy to ensure that the goals set out in the strategy are being met with the implementation of the project.



Source: Author diagram.



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Head Office

161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4  
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: [www.iisd.org](http://www.iisd.org)

Geneva Office

International Environment House 2, 9 chemin de Balexert, 1219 Châtelaine, Geneva, Switzerland  
Tel: +41 22 917-8373 | Fax: +41 22 917-8054 | Website: [www.iisd.org](http://www.iisd.org)

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