

Build or Renovate?

The decision to establish a new Green Bank, or “green” an existing National Development Bank

Diana Smallridge¹ | Marta Becker | Jenni Henderson | Margaret Sider

Editors: Maria Netto | Enrique Nieto | Alexander Vasa



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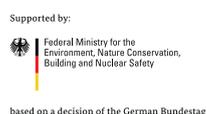
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OBJECTIVES AND CAVEATS

The growing interest in catalyzing green finance via public financial intermediaries²³ – at the national, subnational, regional and municipal level – is a response to the massive gaps between available funding and demand for funding for low-carbon, climate-resilient (LCR) projects, and the vital need to mobilize private sector finance to meet international obligations of the Paris Agreement.

The objective of this concept note is to examine the relative merits of starting a de novo Green Bank compared to “greening” an existing National Development Bank (NDB). It aims to further inform and catalyze the urgent dialogue on NDBs as critical and effective enablers of climate finance solutions.

Section 1 introduces a brief analysis of the general problem that demand for financing of green investments exceeds existing supply, including a description of key financial and non-financial barriers to investment. Section 2 presents the question of whether to green existing NDBs or establish a new Green Bank. Section 3 reviews further context and considerations, including pros and cons for this question. Section 4 identifies a set of key criteria from economy, government, and institutional-specific perspectives to help inform the decision. Section 5 then outlines a basic process for how to ‘green’ an NDB, should that path be chosen.

The note will not examine other vehicles including public institutions, commercial banks, funds and hybrid structures that could be ‘greened’ and incorporated into a more holistic national strategy to channel public resources to deliver and catalyze low carbon and climate resilient investment.

This note was prepared for the following target audiences:

- Policymakers designing and implementing institutional green finance mechanisms at the national and sub-national government level

² Sachi, S. (2019)

³ Bodner, P. (2019)

- 
- NDBs in developing countries that are interested in greening their portfolio via mitigation investment programs and projects
 - Development finance institutions (DFIs) working with NDBs
 - Bi-lateral, multilateral and philanthropic donors committed to expediting the climate finance agenda via catalytic vehicles

The note was prepared between March and May 2019, based on the following key sources of information:

- Review of strategic green finance work with NDBs and DFIs globally
- Desk review of existing literature on green finance
- Workshop participation in the Green Bank Design Summit 2019

The authors wish to acknowledge that the time frame for preparation of this publication did not allow for more in-depth data collection and more exhaustive fieldwork.

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1. INTRODUCTION

The LCR Investment Gap

In all countries – from highly industrialized to least developed nations – the size and scale of the financing needs to support climate-friendly investments and to meet Paris Agreement commitments are significant. The need for low-carbon investments in infrastructure and other sectors is typically addressed in plans developed at the national level and integrated into a country's long-term development agenda. An important component of this planning is the identification of sectors in which a country will invest towards meeting the goals of the Paris Agreement, which are then published as Nationally Determined Contributions (NDCs). At the sub-national levels, the impetus for using taxpayers funds for low carbon and climate resilient (LCR) projects can derive from national obligations that have cascaded down or, more often, a genuine bottom-up desire

by financial and non-financial actors to support the greening of their systems, especially where projects represent sound financial investments, such as with certain renewable energy projects. Even those jurisdictions at the sub-national level – such as municipalities, counties and provinces – feel both the burden and responsibility to develop innovative financing solutions to address gaps that will, for example, decarbonize the electricity grid, optimize energy efficiency in buildings, enable next-generation mobility and improve waste management (McKinsey, 2017). However, public funds are not sufficient and need to be used wisely to mobilize private capital and optimize impact.

Figure 1 (page 5) defines the global scope of LCR investments required to be consistent with the below 2-degree Celsius climate goal of the Paris Agreement. This shows that Investments under the business as usual (BAU) scenario from 2015-2030 would likely include significant investment in LCR infrastructure in the range of US\$53-US\$70 trillion. Global LCR infrastructure needs consistent with the Paris Agreement, however, would require additional investments of US\$13.5 trillion in renewable energy and energy efficiency, for a total of some US\$85 trillion till 2030. The OECD and other reports corroborate these estimates⁴. In Latin America and the Caribbean (LAC) countries alone, the financing gap stands at more than US\$175 billion per year (Abramskiehn et al. 2017).

Barriers to Investment

Financial and non-financial barriers to investment and scaling up can be significant. Table 1 summarizes the barriers to LCR investments. Examples of financial barriers include a lack of long-term funding for productive LCR investments that sufficiently cover the payback period of LCR projects due to the current asset-liability match of commercial financiers⁵. LCR investments also tend to have high upfront costs due to investment in design and physical capital. Additionally, LCR investments are typically novel or 'innovative' technologies, involving smaller projects and inexperienced project developers initially, that subsequently have a higher perceived risk, with a resultant higher cost of capital where risk tolerance exists at all.

⁴ OECD (2017)

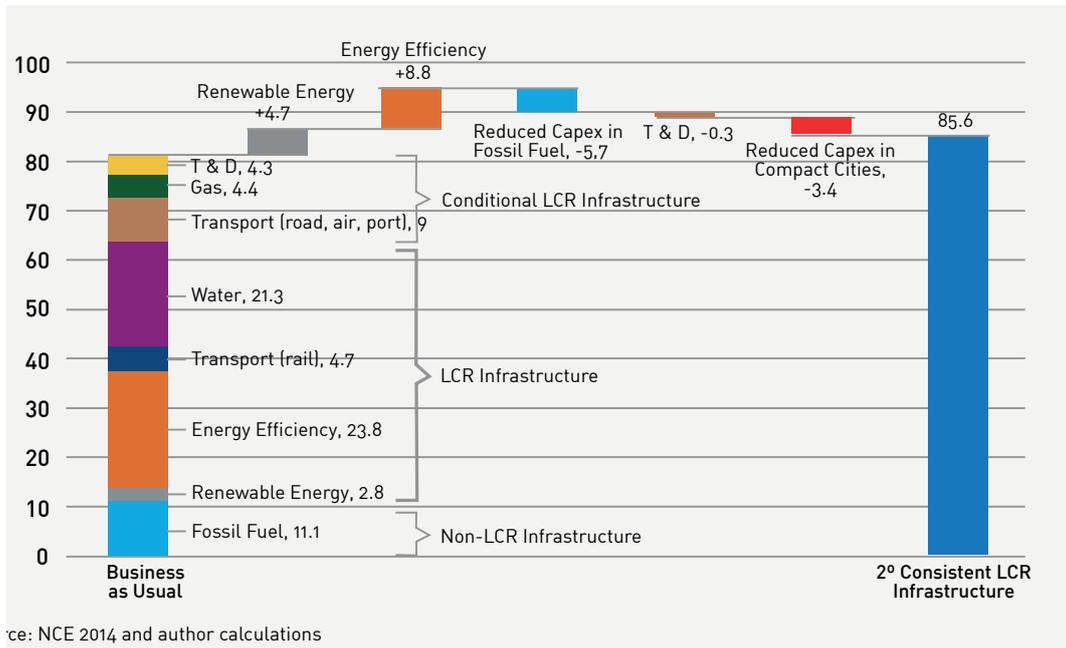
⁵ Commercial financiers, especially in emerging economies, often cannot provide medium to long-term loans as the liabilities e.g. deposits they hold are short term.

Box 1: Definition of LCR

The concept of **low-carbon, climate-resilient (LCR)** development has emerged as a way of framing policy and action to address climate change, capturing the need for both mitigation and adaptation efforts to be fully integrated into development planning and implementation.

LCR infrastructure focuses on power, transport, water/sewage, and investments in energy efficiency.

Figure 1: Global LCR Investments Required 2015-2030 to Achieved -2o Celsius Reduction (USD trillion)



Source: Meltzer, 2018

Meanwhile, key challenges in terms of non-financial barriers include a lack of experience with LCR projects by commercial banks, SMEs, and project financiers. The challenges, however, are dynamic and evolving, as reflected in the scaling and increased market acceptance of projects such as wind and solar. Still, they continue to lead to insufficient or inadequate project development and implementation on the demand-side and, and on the supply side, a limited ability or willingness to provide financial solutions that support LCR projects effectively. Linked to this is a lack of trust related to new technology, weak enabling environments including policy, regulatory and institutional weaknesses or policy reversals, and lack of prioritization by governments to take account of the true 'negative externality' costs associated with existing non-LCR technologies.

Table 1: LCR Sector Financial and Non-Financial Barriers for Green Finance

Financial barriers for green finance	<ul style="list-style-type: none"> Limited access to longer-term financial resources (maturity mismatch) Higher upfront capital costs (technology-related) Limited availability of local currency financing/ high cost of hedging Financial/Macro/Country risks
Non-financial barriers for green finance	<ul style="list-style-type: none"> Lack of priority despite temporal urgency (IPCC's 2030 'deadline') Ineffective policy and regulatory framework Lack of trust and access to new technology Lack of institutional capacity and experience with new technologies Weak project and pipeline identification Ineffective Environmental and Social Governance Systems Lack of systems for monitoring, reporting and verification of results

Source: Magallon et al, (2016: p. 3) and Granoff, Hogarth, and Miller (2016)⁶

⁶ For additional sources see: OECD, World Bank, and UN Environment (2018) and OECD (2017).

Public Financial Institutions Drive Solutions

There is clearly a need for smart and wise public support to mobilize private capital and optimize impact, while safeguarding the social good and not crowding out commercial banks. The urgency of effective public support is a key driver and cannot be understated. This is reflected in the mandate to operationalize Article 2.1c of the Paris Agreement and further reinforced by findings of the IPCC's landmark report in October 2018⁷, which not only upgrades its climate change risk warnings with an 11-year window (to 2030), but identifies political will as the critical factor since adequate technical solutions already exist.

However, even with the full commitment of governments, national public budgets are not sufficient to finance it all. The imperative to leverage public funds is therefore strong and mobilizing private sector sources must therefore be the priority for governments at all levels, and is for many. Key interventions focus on creating the conditions to attract private investment through a combination of enhancing the enabling environment (making it easier to do business) as well as offering incentives to entice investors, through financial and non-financial services. As well, technical assistance for project development, structuring and capacity building across the financial and LCR project sectors is critical.

There is no one solution or perfect model for channeling public money to mobilize private capital towards LCR projects and initiatives. Each jurisdiction must define the best strategy and instrument for delivery, taking into account its own unique set of circumstances, imperatives, pressures, barriers and opportunities. In countries with existing National Development Banks (NDBs), these public financial intermediaries have the potential to be a vehicle for effectively catalyzing private capital towards LCR projects to address the financing gap and achieve Paris Agreement goals.

This paper explores the role of public financial intermediaries in the context of the decision to set up a new public bank with a green mandate or choose to 'green' an existing NDB. In other words, the decision to 'build', or 'renovate' existing public financing institutions. Best conditions under each scenario are laid out and considered using a dialectic approach. Exploring more deeply the scenario of 'greening' an existing NDB, this paper then offers guidance on a potential process to be undertaken, defining and illustrating a "green maturity ladder" from initial recognition of the potential role the NDB could play through to becoming a fully-fledged green financial institution. Examples are referenced from the LAC region and globally, to illustrate various scenarios and considerations.

2. APPROACHES TO CATALYZING PRIVATE INVESTMENT THROUGH PUBLIC FINANCIAL INSTITUTIONS

The mechanisms that governments use to drive market adaptation to low carbon, climate resilient sectors, are varied. In all cases, however – the objectives are the same: reduced emissions, clean water, clean air, and minimizing the burden on the taxpayer. In all cases as well, the government (whether national or sub-national) makes a decision that there is a need for more investment in LCR infrastructure and technology addressing both mitigation and adaptation, and ideally defines a budgetary allocation.

What is a Green Bank?

Some countries and sub-sovereign entities, predominantly in developed economies, have recently chosen to establish a Green Bank, broadly understood to be a publicly capitalized entity established specifically to facilitate private investment into domestic LCR infrastructure. Sources of public capital are varied, and have included, for example, tax revenues, charges on utilities, and payouts

⁷ IPCC (2018)

from mergers, reflecting a variety of strategies. The OECD defines Green Banks as a “...public, quasi-public or non-profit entity established specifically to facilitate private investment into domestic low-carbon, climate-resilient infrastructure.”⁸ (OECD, 2015). Importantly, a Green Bank will furthermore ‘mainstream’ its green mandate by integrating climate considerations throughout the institution, and across all operations.

Green Banks are designed to address local market and policy failures. The core objective of a Green Bank is not only to increase private sector investment in domestic LCR infrastructure and initiatives, but to do so efficiently to leverage limited public capital. These types of dedicated green investment entities have been established at the national, state, county and city levels.

Box 2: Members of the Green Bank Network (7)

- The Clean Energy Finance Corporation, Australia
- Green Investment Group (formerly UK Green Investment Bank)
- NY Green Bank
- Green Finance Organisation, Japan
- Connecticut Green Bank
- GreenTech, Malaysia
- Rhode Island Infrastructure Bank

According to the Green Bank Network, which has adopted the OECD definition of a Green Bank, more than a dozen Green Bank and Green Bank-like entities have been established. Since the inception of the Green Bank Network through mid-2018, its members collectively have committed about US\$11 billion for projects with a total value of more than US\$41 billion.

Greening an existing Development Bank

In other countries, a different approach has been taken to ensuring green finance offerings are available. In some cases, existing and well-established public development banks which have a broad development mandate have been “greened”. This is often at the behest of their government authorities, along with key stakeholders such as development partners,

but sometimes a bank’s initiative is self-driven through recognizing they can play a significant role within their own national ecosystems as catalysts of change, and moreover to remain relevant. These NDBs have been typically capitalized by governments and offer a range of financing instruments. They have mandates to be self-sustaining and are usually well-positioned to be conveners of all main actors within the system, as is depicted in Figure 2 below.

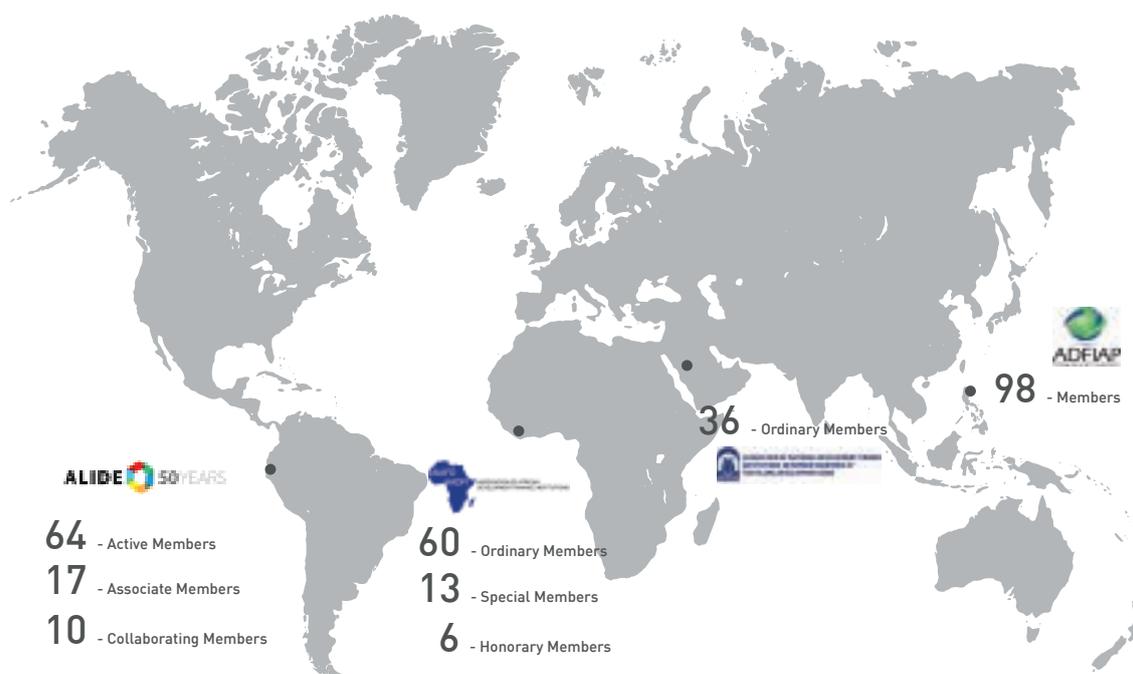
Figure 2: Role of National Development Banks



Source: The Role of National Development Banks in Catalyzing International Climate Finance, Smallridge et al., March 2013

Most countries, particularly in emerging markets, have government-owned or backed National Development Banks. The memberships of the Development Finance Institution (DFI) Associations of Latin America and the Caribbean (ALIDE), Asia-Pacific (ADFIAP), Africa (AADFI) and Member Countries of the Islamic Development Bank (ADFIMI) span the globe, with very few developing countries that do not have a dedicated National Development Bank. Figure 3 below illustrates the 300+ DFI membership globally, across four regional associations reflecting a powerful potential resource, if harnessed through collaboration aimed at supporting LCR initiatives and Paris Agreement goals.

Figure 3: List of National DFI Associations' Membership



Source: ALIDE, ADFIAP, AADFI, ADFIMI websites

These NDBs vary in mandate, focus and distribution channels by which they deliver development finance⁹. NDBs can be Tier 1 or Tier 2 lenders, while many NDBs are both.

Tier 1 NDBs provide direct lending, credit enhancements, and non-risk financial services and technical assistance, typically through their own branch network. Tier 2 NDBs channel their loan and technical assistance products via the distribution network of local commercial banks or other local financial institutions (LFIs) such as microfinance institutions (MFIs) or housing finance corporations. Many NDBs also offer both Tier 1 and Tier 2 facilities.

Tier 1 banks have the advantage of full discretion over the types of clients they lend to and, therefore, can address the low risk appetite for new technologies of private sector finance by supporting LCR investments according to its acceptable financial, risk and development profile. However, these institutions also then carry the full risk of their portfolio.

Tier 2 banks on the other hand can lean on the distribution capacity of a commercial bank network and, therefore, can generate a catalytic effect and scaling, once a product or programme has proven profitable/bankable for the private sector actors involved. Indeed, Tier 2 banks typically embrace the concept of risk-sharing, co-financing and the use of guarantees as effective tools to more broadly catalyze private capital, and especially for smaller, regional projects and initiatives. Of note, however,

⁹ World Bank (2017)

is that Tier 2 banks may be less well positioned to optimize development outcomes given the lack of development orientation and culture of typical commercial banks, oriented to private shareholder needs and reflected, for example, in the absence of development impact performance measurement systems in place.

3. CONSIDERATIONS FOR 'BUILD OR RENOVATE' DESIGN OPTIONS

Key considerations for planning whether to build a new green bank or work with an existing institution cover a wide range of issues, the most critical of which is whether there already exists a public National Development Bank within the country or jurisdiction. Where one exists, an obvious first question from a high-level policy perspective would be “why not ‘green’ it?” and leverage this existing institutional resource. Some countries have already chosen one approach or the other, as illustrated by examples in this section.

Australia and the UK each set up new Green Investment Banks when a government-owned development bank did not already exist. In these cases, there was no real option to “green” an existing government-owned financial institution that had a proven track record of performance.

Box 3: UK's Green Investment Bank

The UK government set up the world's first Green Investment Bank (GIB) in 2012, reflecting the government's commitment to setting the UK firmly on course towards a green and growing economy, while also delivering long-term sustainable growth. It was subsequently, however, privatized when sold to the Macquarie Group in 2017. This decision was largely driven by political pressures to achieve declassification status in order to reduce public debt. It should be noted the decision to establish GIB was made in the absence of an NDB. The British Business Bank was subsequently established in 2014, focused on small business finance in the UK generally (not specifically green).

In other countries, such as Japan and Malaysia, new Green Banks were established notwithstanding the presence of long-established National Development Banks. Japan's Green Fund commenced operations in July, 2013, and was managed by the Green Finance Organisation (GFO), rather than the existing Development Bank of Japan (DBJ) or Japan Bank for International Co-operation, each of which have established green mandates. Malaysia established the Green Technology Corporation, rather than give the mandate to any one of the existing six development banks in Malaysia.

The OECD paper on Green Investment Banks (2015)¹⁰ provides additional perspective on the topic of this paper (see Box 4), which has not otherwise been meaningfully considered in industry research. While some countries have decided, for various reasons, to set up new Green Banks, there may be solid grounds for greening an existing NDB rather than creating a start-up Green Bank, with all its incumbent costs and risks.

Box 4: OECD's Analysis of "Greening" Existing Institutions

To mobilise private investment in domestic green infrastructure, "greening" existing institutions may be preferable to creating new institutions when the necessary institutional and political support exists. For example, many countries have National Development Banks (NDBs) (or public investment, infrastructure or industrial development banks) which focus on domestic investment. While many NDBs are less focused on mobilising green investment than GIBs, some NDBs have been providing financing for low-carbon projects for many years. For example, Germany's KfW has been investing in environmental protection domestically and internationally since the 1980s, and invested approximately USD 58 billion in domestic low-carbon projects in 2010-12 (OECD, 2015).

The case for choosing an existing over a de novo institution is not a simple one, however. As the OECD points out, on the one hand, establishing a new institution could be costlier and create some duplication as compared to greening an existing institution. On the other hand, a new green bank with relative autonomy from government and the flexibility to prioritize market-based solutions, could be preferable to an institution that could suffer from greater political interference. Furthermore, such green banks with may be able to provide greater flexibility to experiment, innovate and more quickly adapt to the dynamic of market developments.

The traditional notion of NDBs, however, and particularly Tier 1 banks, that they are ineffective because they are potentially subject to in n many countries have been made to immunize NDBs against inappropriate meddling by elected officials. Examples of such efforts include central bank and superintendent regulatory supervision, along with strengthened systems of governance which incorporate best practice principles such as independent boards of directors and binding codes of corporate governance to ensure transparency and best practice risk management systems. In this regard, funders such as the MDBs and the bilateral DFIs have played critical roles in

promoting such good practices as a prerequisite for additional funding lines. Indeed, the application by NDBs in developing countries for accreditation from global funds such as EU DEVCO, GEF and GCF to manage funds directly, has generally created the effect of improving internal systems, and increasing transparency and reporting standards.

Another perspective suggested by the OECD in favor of building a new Green Bank is that NDBs lack a clear mandate to drive the climate agenda. However, there are few investments a green bank will do that a traditional development bank could not justify within its broader development mandate. The challenge for an NDB is not necessarily in its mandate, but in what mechanisms and what capacity exists to enable robust results and impact performance aligned with the fullest scope of the NDB's mandate.

Indeed, there are a number of NDBs now mainstreaming climate across their business to bring greater focus and legitimacy to the green agenda within their mandate. As an example, the Development Finance Corporation (DFC) of Belize is seeking to achieve environmental resiliency in all its programs and operations, and undertook a comprehensive and intentional strategic planning exercise in 2017 specifically for this purpose (Box 5). From a practical perspective, however, the mere presence of a policy-led institution, or state-backed bank, should not suggest to policymakers that such an institution is eligible to successfully carry forward a 'green' mandate.

Box 5: Vision Statement for the DFC, Belize

“The Development Finance Corporation empowers the Belizean economy to be economically, socially and environmentally resilient through the provision of world-class, high-impact, innovative, inclusive and accessible financial products and services.”

Box 6: An example of a Green Development Bank

The North American Development Bank, celebrating its 25th year in 2019 and owned by the Mexican and US governments, is both a Green Bank and a Development Bank, as all its activities are to focus on LCR investments¹². NADB also recently issued its first international green bond in July 2018¹³

“The primary objective of NADB is to facilitate financing for the development, execution and operation of environmental infrastructure projects located in the U.S.-Mexico border region and certified by the Border Environment Cooperation Commission (BECC). In accordance with its charter, NADB may provide loans for infrastructure projects with a demonstrable and reasonable assurance of repayment.” All projects must be certified by the Chief Environmental Officer.

While the OECD paper states that financing by IDFC members¹¹ is largely in the form of concessional loans, it should be noted that IDFC membership includes a significant number of bilateral and multilateral DFIs who are not ideal comparators for this purpose. The authors assert that Green Banks tend to be more oriented toward accelerating risk-taking by investors. This is accomplished through demonstration effects, co-investment and sharing risks with investors using guarantees and other mitigants built into the financial structure, including not only pricing, but creditor rankings (senior/subordinate), tenor and security considerations. At the same time, the paper acknowledges that some NDBs develop and use similarly innovative tools to scale up private finance from multiple investor classes, while some Green Banks make extensive use of concessional loans.

Best practice NDBs are not providing concessional loans in terms of pricing, but rather are focusing on offering extended terms, earlier stage investments, and technical assistance for project development and structuring to match demand with the supply of finance. NDBs can therefore be an important mechanism for addressing challenges such as access to long-term and lower-cost funds (as compared to local private market rates where even available) to provide longer-term financing. They can also play an important role in opening the LCR market including for resilience measures by providing technical assistance to commercial banks, project financiers, etc. and by using their public-sector position to advocate at a policy level on behalf of demand and supply-side actors for a more conducive legal-regulatory environment.

¹¹ IDCF website

¹² Although binational, NADB has a limited geographic focus along the US/Mexico border corridor, and as such, is deemed a relevant comparator for purposes of this paper.

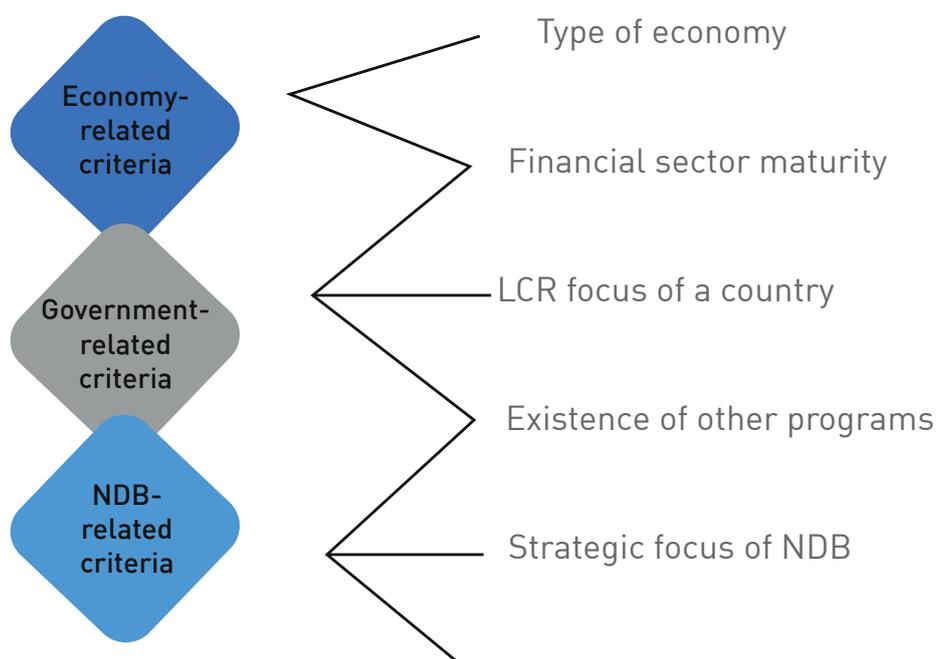
¹³ NADB Press Release (2018)

4. DECISION-MAKING PROCESS

Where the option exists to consider greening an NDB, key criteria for policy-makers to evaluate in the decision to green an existing NDB as compared to establishing a new Green Bank, can be organized under three categories: (i) economy-related criteria, (ii) Government-related criteria, and (iii) NDB-related criteria as summarized in Figure 4.

These categories reflect the logical process of first, reviewing the nature and type of economy within the country, which has informed its national development plan and priorities including NDCs, as well as the structure and maturity of the financial sector. This will inform the extent to which an existing or new instrument/institution can be expected to address market gaps and catalyze local sources of capital. Other criteria consider the broader government approach to implementing its development agenda, including whether the government has given its NDB a mandate conducive to the green agenda with an LCR Focus, and the existence of other programs or vehicles that could be leveraged or brought into a new or existing institution. Criteria related to the NDB itself include looking at its strategic focus to determine whether it is an appropriate platform upon which to build a green finance program, and to consider the NDB's track record and reputation, including its existing portfolio and the nature of its human capital, as part of an evaluation of the overall health and capacity of the NDB.

Figure 4: Key Criteria for Deciding to Build a new Green Bank or Renovate an Existing Bank



All of these factors should come into consideration when deciding in a country that has an NDB, whether it is preferable to set up a de novo institution or seek to green an existing institution, keeping in mind the dynamic nature of these factors and their interplay. While political decisions can override the preferred technical solution, policymakers are obliged to present the best options. To do this, they need an effective set of technical / analytical tools and guiding criteria.

The key criteria summarized in Figure 4 are further elaborated upon as follows¹⁴ :

¹⁴ From these criteria, a mapping of decision points could be constructed as a graphic tool to support policy decision-making. This is beyond the scope of this paper and could be covered in a future iteration of this research.

Type of economy

The selection of the best institutional solution to catalyze green investment must first consider the nature and structure of the economy in which a given institution (de novo, or existing) would be working. Whether the economy is highly industrialized, commodity based, resource rich, a small island state (SID), or perhaps a net importer or exporter of fossil fuels, are all important considerations in determining the optimal institutional mechanisms for green investment. For example, the choice to develop a new institution might be pertinent if the economy is a major fossil fuel exporter with existing institutions or a NDB providing support for businesses in that sector. In this case, the addition of a green mandate to the existing NDB could represent too much of a conflict with their current portfolio and lack credibility.

Financial sector maturity

Understanding the landscape and maturity of the existing financial sector is the next natural level of analysis in the progression from considering the type of economy that policy makers are operating within.

Questions must be asked, by policy-makers, as to who the 'supply-side' players are, what their focus is, and how they are playing. For example:

- Are there actors at all levels of the financial ecosystem, such as consumer, micro/SME, community, commercial banks, and insurance?
- Are there existing vehicles and channels for funding key sectors, such as: big infrastructure (municipal/PPPs), MSMEs, manufacturing, agriculture, services, trade finance, or corporate?
- Have any existing institutions established a successful track record in mobilizing private sector funding? What are their challenges?

In most economies, there is likely to be a range of sources for financing business ideas and projects, including locally-owned or national commercial banks, international banks, Credit Unions, MFIs, and NDBs. The relative availability, reliability, and effectiveness of these sources of finance varies with the maturity of the financial market. In less mature markets, the availability of credit is limited. The standard indicators of banking sector depth of most African countries, for example, are low compared to the rest of the world: credit to the private sector is limited, assets are highly concentrated in a small number of banks, and the total volume of assets is low. Of institutions that are active (both commercial and government-backed), it is likely they will have a fairly basic risk appetite/framework, be susceptible to economic volatility, face their own funding constraints, provide mostly plain-vanilla products, and utilize rudimentary risk-pricing methods.

Using a Tier 2 lending structure via an NDB with a capacity-building arm could alleviate some of the barriers created by financial sector immaturity.

Beyond the maturity of the financial sector, decision-makers must understand the specific supply-side factors impeding LCR investment. Generally, a lack of financing on appropriate terms and conditions from LFI towards LCR projects is an important factor. For example, LFIs typically apply a traditional 'asset-based' corporate lending approach that is limited to their lending a maximum of 70 to 80 percent of the value of assets financed or collateral provided. Yet, in energy efficiency (EE) projects, there is often little or no collateral value in the EE equipment once installed in a facility; rather, the value is the cash flow generated from the equipment after installation. Similarly, LCR investment opportunities by nature are often innovative technologies and (regardless of whether they are greenfield or existing facilities) tend to be unfamiliar to LFIs. As such, there is a reluctance

among LFI to take risks. In other cases, the risks might be understood but the transaction is too small relative to the transaction costs.

Hence, prior to designing a new solution or making changes to existing institutions, it is crucial to understand in detail what specific issues are at hand in the market. This analysis must be aimed at assessing not only where the market gaps are, but why they exist and whether and how they can be addressed via financial and non-financial instruments, including technical assistance.

What is the LCR Focus of a Country?

Within the universe of LCR sectors there could be multiple areas of focus for a country—renewables, energy efficiency, water, sanitation, and other environmental activities, etc. The suitability of an existing NDB to effectively accommodate a country's stated LCR focus as reflected by NDCs, is an important consideration. If there is a significant renewable energy focus in the NDC, for example, and no dedicated financing institution with expertise in financing IPPs, there may be a stronger case to set up a new institution. On the other hand, NAFIN is an example of an NDB with a revised mandate that successfully re-oriented its operations as a Tier 2 bank to create new institutional capacity to develop project finance expertise for wind projects.

As well, it is understood that LCR sectors are more than just infrastructure. Within NDCs, there is significant scope, for example, in the agriculture and corporate sectors to reduce emissions. These sectors require different forms of financing and typically require smaller investments. Thus, they may be better served through Tier 2 facilities, working through local financial institutions that are closer to the beneficiaries and have lower operating costs.

A further consideration is the suitability and capacity of an existing NDB or de novo institution to specifically address climate adaptation and resilience goals, also outlined in a country's NDC, and as distinct from infrastructure based LCR investments. This involves not only financing, but tools such as technical assistance, knowledge management and other innovative forms of influence to achieve increased demand for climate adaptation products and services; increased supply of these products in local markets; and de-risking adaptation investments using various policy and financial tools¹⁵. Examples of support might include the NDB asserting mandatory investment disclosure requirements in a project financing structure, the NDB designing and/or participating in regional catastrophe risk insurance pool, and the NDB supporting local utilities to issue resilient infrastructure bonds.

The capacity and alignment necessary to effectively serve all the needs of a country's LCR sectors would then influence the choice to 'build or renovate', if one is more conducive to a Tier 2 LCR lending structure. Relatedly, a 'full-service' NDB offering both Tier 1 and 2 lending, with the further capacity or potential to deliver effective TA and other non-financial innovations, may potentially be a much more effective mobilizer/ catalyst, given its ability to design and deliver whatever intervention is most appropriate.

¹⁵ Micale, Tonkonogy, Massa (2018)

Existence of other programs/incentives provided by government

Critical in the decision-making process is whether there are other relevant institutions, programs or incentives already provided by the government. The existence of other such vehicles could lean the decision towards either greening an existing bank or creating a de novo institution, or indeed, the prospect of a more integrated approach involving multiple tools of delivery, such as in Mexico^{16 17} (the exploration of which is beyond the scope of this paper).

For example, the government might have an existing program/institution that can provide shared-services in the early stages of starting a new green bank; or a special funding window for green investments through a department might already exist that could be merged into a new or existing bank. Policymakers should also ask where they can create incentives for private sector institutions to compete with each other through innovation and be encouraged to create or enter new 'green markets.

Strategic Focus, Operations and Mandate of the Existing National Development Bank

While the NDB has a mandate from government, it may be a narrower or more specific mandate than what might be required to be a full-fledged Green Bank, fully mainstreamed and operating across all relevant sectors. For example, in Malaysia, with multiple national DFIs with different policy thrusts, policymakers felt it made more sense to establish a new facility/corporation with a specific focus on catalyzing clean energy investments. On the other hand, in Germany, KfW's central role in the domestic economy made it perfectly suited to carry out the green agenda of the government across all its operations.

Box 7: Support for NDBs to develop green finance strategies

The IDB supported Sociedad Hipotecaria Federal (SHF) in a successful triangular collaboration between IDB, SHF, and Kreditanstalt für Wiederaufbau (KfW) to develop a financial strategy for energy efficient low-income housing. By June 2018, the program had financed 55,312 energy-efficient EcoCasas and benefited 216,000 persons in 22 Mexican states, and mitigated 1.76 million tons of CO₂ (Barbosa, 2018).

NDBs that focus exclusively on one market segment (housing, trade, MSMEs, industry, infrastructure etc.) may find themselves somewhat more limited in their ability to ensure their investments appropriately align with national development plans and the LCR sector(s) as defined by the NDC. This is because there may also be the expectation that the bank continues to support the more traditional demand for finance in that sector, which could precipitate conflicts of interest.

On the other hand, it is possible that a NDB's singular sector expertise may be uniquely suited to effectively mobilize LCR investments for that sector, as illustrated by the example of SHF in Box 7.

¹⁶ Mexico has seven government-owned development banks providing services to specific areas of the economy. The dominant banks are Nafinsa and Bancomext, which are primarily 2nd-tier lenders and expected to merge Gudmundsson (2018).

¹⁷ Government of Mexico – Mexico – Banking Systems

Track Record and Reputation of the Existing National Development Bank

An existing NDB will already have a public-policy mandate from the government, a customer base, and an operating and governance framework. It should also have an adequate level of capitalization. Still, policymakers must evaluate the overall health of existing institutions to inform the feasibility of greening it.

A well-functioning NDB will find a financially sustainable way to balance the needs of its stakeholders—shareholders (governments), clients, private sector intermediaries and taxpayers—while accomplishing its ultimate goal, which is meeting its public policy objective. It will carry certain attributes across several dimensions of institutional ‘health’ — governance, financial and operational health, and development impact (Smallridge and Olloqui, 2011). Where there are significant shortcomings across one or several dimensions of a NDB’s health, it stands to reason that the cost, time and cultural change required to bring an institution to sufficient health and pivot towards green investment might be prohibitive.

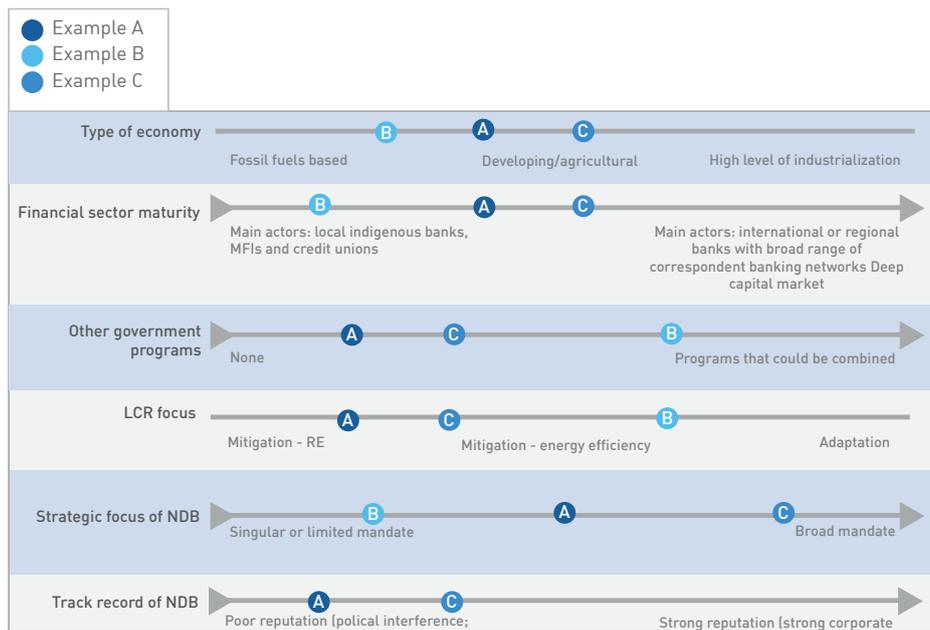
Dysfunctional NDBs will exhibit certain characteristics across these dimensions which would hinder them from effectively executing their public policy mandate. Broadly, institutional deficiencies that policymakers need to take into account, include: issues around the NDB’s corporate governance such as political interference or inadequate oversight; limited or weak managerial, financial and operational skills and lack of proper incentives; poor development outcomes and impact measurement; high losses/non-performing loans (NPLs); persistent needs for recapitalization or subsidies; weak debt recovery; credit misallocation and politically motivated lending; among others. On the topic of capitalization as a key health indicator, there has been a case in a LAC country, for example, where a political decision was taken to create a green bank/ facility, but the facility was then funded with very low resources, which critically undermined the sustainability of the new institution; an open question is whether this could have been avoided under the alternative of greening an existing public bank.

Also noteworthy is when an existing institution has an established strong credit rating, enabling it to leverage this strength both downstream (for projects) and upstream (capital markets’ access) faster and more easily than a new institution may be able to accomplish – possibly due to political circumstance (lack of public capital) and lack of track record.

Depending on the health prospects for the existing NDB, and whether sources of dysfunction are systemic and avoidable, policymakers ultimately need to decide if it is practical and feasible to strengthen the bank’s institutional capacity and then seek to “green” the bank, or whether it is better to start fresh.

Against this backdrop, what is the better solution? Figure 5 illustrates a spectrum of situations or criteria that can be considered from a high-level perspective in the decision to build a de novo green bank or renovate an existing NDB.

Figure 5: Hypothetical Scenarios



Source: Developed for this Report

In Example A:

- the NDB has a fairly weak track record of performance and ineffective M&E systems
- the NDB has different sectors of focus, but not a broad mandate
- the NDB cannot operate in a part of the financial ecosystem where there is currently a gap (due to by-laws/ regulatory restrictions...?)
- the country itself has progressed little in addressing climate objectives, including the design and implementation of LCR projects, and
- the real focus of the NDC is a move towards adding incremental energy sources into the system, through renewable energy installation
- the economy is highly rural and agriculture-based, with some financial sector depth
- there might be scope to catalyze existing financial sector players into LCR investments.

In this case, the best decision is not readily apparent. There is a weak foundation to build from with the existing NDB, and multiple capacity gaps. Assessing the prospect of addressing existing weaknesses is appropriate as a first step and the basis for the NDB's poor performance would need to be understood. If poor performance of the existing NDB is due to government interference, then instead of attempting to amend those circumstances, it could be more practical to start anew, particularly in establishing an effective governance structure. It could be that 'starting with a fresh canvas', would allow the various issues and capacity gaps to be addressed up-front in the design and implementation of a new Green Bank, with concerted political will.

In Example B:

- the NDB is well managed and credible
- the NDB has a broad mandate to address a variety of sectors and market gaps
- the government has established some other programs (such as energy retrofit subsidies for industrial buildings).
- the country's NDC is placing a lot of emphasis on adaptation as well as energy efficiency, as the energy mix is already highly concentrated on hydro power.

- there are also significant recently discovered oil reserves that are being readied for export, the NDB is the main financier of the oil sector, and is seen as such. The government also does not have a credible mandate to diversify significantly away from fossil fuels
- The banking system is still fairly incipient.

→ Likely decision: Build a New Green Bank.

In this case, it would appear challenging to effectively reorient the NDB's mandate, yet at the same time maintain its deep involvement in sectors inconsistent with a green mandate. A new Green Bank could focus on complementary initiatives including gaps in the financial ecosystem and other sectors.

In Example C:

- the NDB has some limitations yet has the potential to be strengthened through an institutional development program.
- Given a broad mandate by government, the NDB can operate in all relevant LCR sectors by adding LCR components to existing products, developing new programs, and ensuring proper credit skills and analysis.
- The NDB can operate in parts of the financial ecosystem where there is currently a gap
- The government may wish to implement or synchronize existing green incentive programs.
- Within the country, there is a significant emphasis on improving energy efficiency within existing installations, due to the fairly important (but dated) level of industrialization.
- Relatively speaking, the country's financial sector is developed so the private sector could be found to embrace investing in LCR sector with the right catalytic financial instruments, such as guarantees.

→ Likely decision: Green the existing NDB.

In this case, it would appear there are sufficient amenable components in place, and no insurmountable barriers, to justify strategic intervention and rejuvenation efforts aimed at the effective 'greening' of this NDB within the shortest timeframe (as compared to building anew).

These hypothetical examples illustrate that the decision to 'build or renovate' is not straightforward and careful consideration is needed. The existence of an NDB does not automatically suggest that "greening" the NDB is the optimal path; nor is the creation of a new green bank the solution for every country.

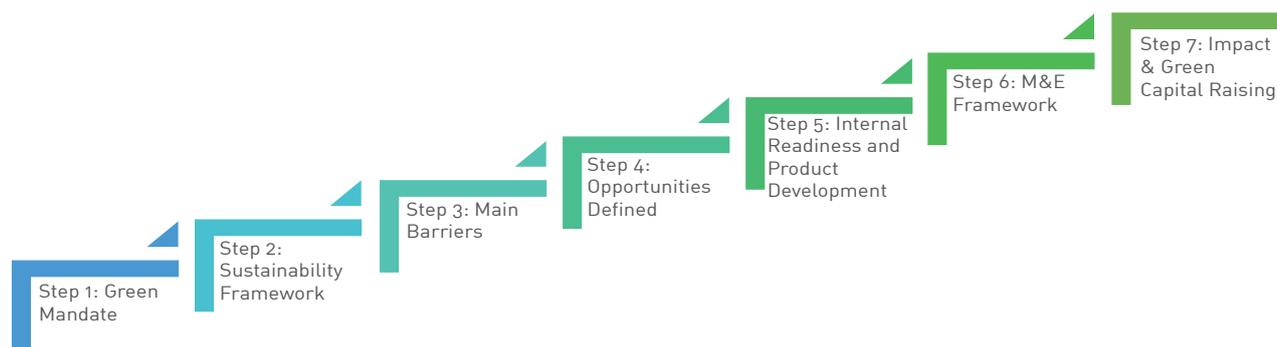
5. THE GREENING JOURNEY OF NATIONAL DEVELOPMENT BANKS

This section of the paper assumes the decision has been made in favor of greening an existing NDB, as a result of the decision-making process outlined in Section 4. This decision may have been mandated by government policymakers through a specific policy directive or taken strategically by the NDB itself.

NDBs from different continents have begun such a green journey. SIDBI (India), HBOR (Croatia), COFIDE (Peru) are just a few examples of NDBs with mandates to develop green products and mainstream green processes into their institutions.

The steps to greening an existing NDB can be standardized, although application of the journey needs to be tailored to each country's unique local context. It should also incorporate an 'iterative' element of review and feedback to capture ongoing learnings. Note that these steps are relevant also to the process of building a de novo bank, once the bank is legally formed and capitalized.

Figure 7: The Green Maturity Ladder for NDBs



Source: Developed for this Report

Figure 6 provides a summary of the green maturity ladder for NDBs.

Step 1: The NDB gets a Green Mandate from Government

Whether the decision to green the NDB comes as a directive from government, or the NDB chooses this strategic direction within the scope of its existing mandate, it should be clear that the NDB has a written mandate from government. Moreover, policymakers should be in agreement on the nature of the ‘green’ mandate for implementation purposes, and also, that the mandate decision is stable over time.

Step 2: The NDB develops a greening strategy and establishes a sustainability framework

A critical next step is for the NDB to strengthen its capacity to evaluate the environmental and social impacts of its investments, as well as the resiliency of projects/infrastructure against the impact of environmental/climate change effects. Moreover, the green mainstreaming process of an NDB should integrate sustainability perspectives across all institutional operations. This requires a shift in institutional culture and its approach to clients. The NDB must therefore establish and articulate these imperatives through the creation of an institutional sustainability framework. This will include the development of policy and an approach to identify, avoid and minimize harm to people and the environment.

Directives under this framework then inform the NDB’s assessment criteria of a project or initiative at the appraisal stage. The sustainability policy framework would normally include Economic, Environmental and Social impacts of projects, adaptation and resilience evaluations, and require the NDB to undertake an ex ante and ex post evaluation of projects as well as monitoring during projects’ implementation and operating phases.

Step 3: The NDB has an understanding of the Main Barriers to LCR projects

It is important that the NDB has identified the main demand-side conditions that would otherwise constrain the optimal distribution of public goods (such as clean energy, lower carbon etc.) or the full functioning of market forces. It is not just about unlocking sources of private sector finance towards LCR investments; often there are legal and regulatory challenges and barriers on the demand-side that need to be understood before market gaps can be addressed. Deficits in knowledge and awareness around opportunities and barriers for investments in climate-related interventions tend to constrain demand. RE/EE and low carbon project proponents are often unaware of opportunities, do not fully understand the technology or economic benefits, or have trouble identifying project partners. As a result, they may not be able to structure a bankable project to present to local financial institutions.

Demand-side barriers can be from the perspective of all stakeholders from all levels of government, the project sponsors, and the beneficiaries such as energy off-takers, households, consumers, and companies.

In particular, the NDB needs to understand where in the project development cycle (from conceptualization through feasibility studies to preparation for financing), project proponents are limited in accessing finance. For example, for energy efficiency projects, the project proponent or end-user must usually bear the cost of completing an energy audit to establish a baseline against which to measure energy savings. The end-user may not understand or have confidence that sufficient energy savings can be realized to cover the cost of the audit and the cost of any energy savings measures that might need to be implemented. Hence, there can information gaps around investment risk and return.

Meanwhile, as a state-led institution, NDBs should leverage their unique position at the policy table to help remove any cumbersome legal-regulatory barriers for demand and supply-side actors in the LCR market.

Supply-side barriers are best identified by the LFIs themselves so that the NDB can understand the conditions under which an LFI would lend into LCR projects. Figure 3 summarizes the financial and non-financial barriers from both the supply and demand sides relating to LCR infrastructure projects.

Step 4: The NDB identifies opportunities

Prior to designing solutions in step 5, it is critical to assess where the market gaps are, why they exist and whether and how they can be addressed by the NDB. This step involves a deep dive into analyzing market developments and identifying specific

opportunities for the NDB in the LCR sector. It requires defining the financing possibilities that could exist, as well as potential demand, leading to the NDB scoping out potential gaps that it could most usefully fill.

Understanding the green market opportunities, the NDB needs to consult first with potential project proponents and other stakeholders to help them imagine what could be done to develop LCR projects if they had capital, technical assistance, access to information of technology solutions, etc. It also means working with the local FIs and institutional investors to identify what would induce them to get involved in LCR projects.

Box 8: NDBs' support for public policy through facilitated discourse

The Laboratory of Financial Innovation (LAB) is a project of the Brazilian Development Association (ABDE), the IDB, and the Securities and Exchange Commission (CVM), launched in August 2017, which works as a multi-sectoral discussion forum. Its purpose is to promote dialogue between the public sector and to share experience among various agents of the economy to advance innovations in sustainable development in Brazil GreenFinanceLac (2018).

Box 9: Leveraging local commercial investment

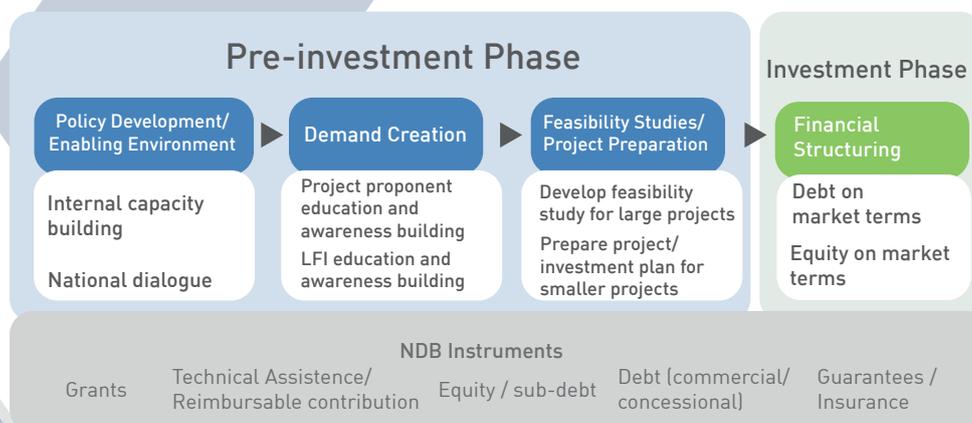
NAFIN (Nacional Financiera) created a sustainable energy financing facility technical team to co-develop and implement the REEF program for the direct financing of local wind energy projects. Total financing resources amounted to US\$ 1.2 billion. IDB provided US\$ 1.3 million for technical assistance, US\$ 370 million in IDB sovereign lending, NAFIN provided US\$ 798 million, and the Clean Technology Fund (CTF) provided another US\$ 70 million¹⁸. The combination of technical assistance for capacity building, concessional resources by CTF and sovereign lending by the IDB together leveraged considerable commercial sector investment totaling over US\$ 6 billion in wind technology investments. The installed renewable energy capacity increased from 250 Megawatt in 2009 eight-fold to 2 Gigawatt in 2014. This example indicates the possibility of using public funding to address demand in renewable energy technology transfer and financing.

Step 5: The NDB assesses its own internal readiness and its product development approach

To green itself, the NDB needs to then assess its own operations, preparing a risk management strategy and examining its existing portfolio for products that could be classified as green; to then develop a product strategy with the aim of deployment of financial instruments and non-financial products and services that can catalyze green investments and initiatives to accomplish the NDB's green impact performance objectives, for both mitigation and adaptation.

Figure 7 looks at the various roles that an NDB could play and instruments to be deployed both in the pre-investment stage of projects as well as during the investment phase. It includes grants to build awareness and create capacity both within the organization and nationally. Additionally, technical assistance and/or reimbursable contributions can be used for project preparation. And finally, financial solutions, such as debt (on commercial or concessional terms) and equity, as well as guarantees/insurance for investments play an important role.

Figure 7: Possible Roles for NDBs



Source: Adapted from Smallridge et al., 2012.

¹⁸ The conditions of the CTF loan channeled to NAFIN were as follows: Annual service fee 0.75 percent, MDB upfront fee 0.25 percent, 20-year maturity; 10-year grace period, 48-month disbursement period; principal repayment at 10 percent for years 11–20 (Smallridge et al., 2013).

Step 6: The NDB develops an M&E Framework to measure outcomes and impacts

Establishing a Monitoring and Evaluation Framework for the NDB to track results is a fundamental step. It is more than tracking emission reduction from projects and ensuring compliance with the local environmental and social requirements; it includes impact measurement for jobs created/maintained, energy savings, and increases in productivity etc., as well as demonstration effects, catalyzing and crowding in capital, and impact achieved in adaptation/resilience through financial and non-financial services and interventions. Moreover, an effective institutional level M&E framework will address not only green development impact goals, but also 'corporate' performance goals as often reflected in a corporate scorecard (addressing financial, staff, and client perspectives) and filtered through a green/mainstreaming lens.

Tools need to be designed and developed to identify and record data, as well as analyze the evolution of the key technical and financial parameters of the projects.

Box 10: IDB supports improved performance management systems

In 2018, the IDB hosted, in cooperation with Alide and FIRA a capacity building workshop to improve performance measurement and evaluation systems in public banks in Latin America (IDB, 2018).

Box 11: IDB support for Green Bonds for LAC NDBs

In 2017, Bancoldex issued its first green bond which was the first to be listed on the Colombian Stock Exchange for US\$ 67 million with an oversubscription factor of 2.5. FIRA, a Mexican agricultural national development bank, issued a green bond for US\$ 125 million in 2018. Global annual issuance of green bonds soared from US\$ 11 billion in 2013 to more than US\$ 150 billion in 2017. IDB currently works on additional green bond issuances for green infrastructure and SME financing with NDBs in Argentina, Brazil, Colombia and Ecuador (GreenFinanceLac, 2019).

Box 12: IDB support for NDBs to access international funding:

In 2015 IDB hosted a capacity building workshop for NDBs on modalities, opportunities and lessons learned in accessing GCF and IGF funding (GreenFinanceLac, 2015).

6. CONCLUSIONS

The decision by governments to actively contribute to financing LCR projects and to catalyze private investment is obvious, based on the social, economic and environmental benefits, and given the temporal urgency driven by the accelerating impacts of climate change. Less obvious is how best to pursue this.

The advantages of greening an existing bank have been illustrated in this note – it is highly efficient if the bank already has reliable systems in place, interacts with the relevant stakeholders, and is well-established. If the NDB faces issues, particularly governance challenges, and has a mandate that is limited in scope, there may be a preference to build a new bank over renovating an existing NDB. For countries without national development banks, establishing a new green bank may be a viable option. The creation of funds or involvement of other existing public institution has not been analysed in this note and might provide alternatives or complementary options.

Regardless of which model to follow, each public bank needs to address similar challenges, such as a clear mandate, governance structure, strategy, risk management framework, and clearly defined success metrics and targets. Each of these might be easier or more difficult with either option. Risk management, for instance, might be difficult for a de novo Green Bank if the loan portfolio is not diversified, meaning the risk appetite of the Green Bank would need to be higher, as well as its capitalization to mitigate such risk. In this respect, a new Green bank is likely to require more capital than the amount required to augment an existing NDB, and, depending on the sources of capital, public or private, it might be more challenging to secure the necessary capital. It might also take time to (re-)build trust in the market that the risk management and environmental and social safeguards system works. This may be true for both options.

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