

Green Bonds Development in Bangladesh **A Market Landscape**

December 2019



In partnership with



Developed by



Climate Bonds INITIATIVE

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Executive Summary

Context and background

The International Finance Corporation (IFC), in partnership with the Swedish International Development Cooperation Agency, commissioned Vivid Economics and Climate Bonds Initiative to undertake this study, to assess the potential for a domestic green bond market in Bangladesh, and to support Bangladesh Bank in helping this market achieve its potential. This report identifies the potential pipeline for green bonds in Bangladesh, relevant stakeholders and the barriers they face, and then recommends next steps to be taken by Bangladesh Bank and other public sector actors to foster the green bond market.

It draws from desk-based research in combination with a series of structured interviews covering the key stakeholders for market development, both in Bangladesh and globally. These included potential domestic investors, international investors, issuers, verifiers as well as the relevant regulatory and policy actors.

Green bonds offer investors and issuers a product dedicated to raising finance for 'green' (or sustainable) projects. The term 'green bonds' refers to bonds that exclusively finance low carbon and climate-resilient projects. The financed projects must clearly deliver defined environmental benefits. Full standards of what constitutes the label 'green bond' are still emerging,¹ though in general they provide financing to a wide range of climate-smart sectors including transport, energy, buildings, industry, water, waste, agriculture and forestry.

Although still a small portion of the bond market, green bond issuances have grown rapidly. Since the first issuance of a 'Climate Awareness Bond' in 2007 by the European Investment Bank, and the first explicitly labelled Green Bond issued in 2008 by the World Bank, the green bond market has grown significantly. In 2014, labelled green bonds accounted for USD 37 billion. In just 4 years, this has grown to USD 168 billion and by the beginning of July 2019, USD 123 billion have already been issued, in line with the Climate Bonds Initiative annual issuance target of USD 250 billion.²

The growing popularity of green bonds reflects a number of perceived advantages relative to plain vanilla bonds. These include:

- **Access to a new and growing pool of environmentally aware investors.** Asset management companies are increasingly improving reporting on the ESG impacts of their investments alongside launching specific ESG-focused funds to appeal to this market.
- **Enhanced transparency to ensure that money is spent on projects and not misappropriated or diverted for non-sanctioned uses.** The post-issuance reporting requirements associated with a green bond provide assurance that the money is invested in the intended projects or assets.
- **Leadership in social and environmental responsibility.** Both financial and non-financial corporates across the world are increasingly looking to improve their public image. Participation in the green bond market offers a well-recognized and safe way to do so.

Bangladesh's Nationally Determined Contribution (NDC) prioritizes the energy, transport, and industrial sectors. Bangladesh has ratified an ambitious and progressive NDC, which sets out targets to reduce

¹ OECD (2015), *Infrastructure Financing Instruments and Incentives*

² [Climate Bonds Initiative \(2019\), Market Blog #29 - 11/7/19](#)

greenhouse gas emissions by 5% by 2030 compared to a business as usual scenario, or 15% conditional on mobilizing international finance and support from international sources.³ While the priority sectors are energy, transport and industry, the NDC action plan also lists conditional measures in other sectors such as buildings, agriculture, waste, land use and forestry sectors. As Bangladesh is highly vulnerable to heavy rains and flood damage from tropical cyclones, adaptation is also a major priority for the country.⁴

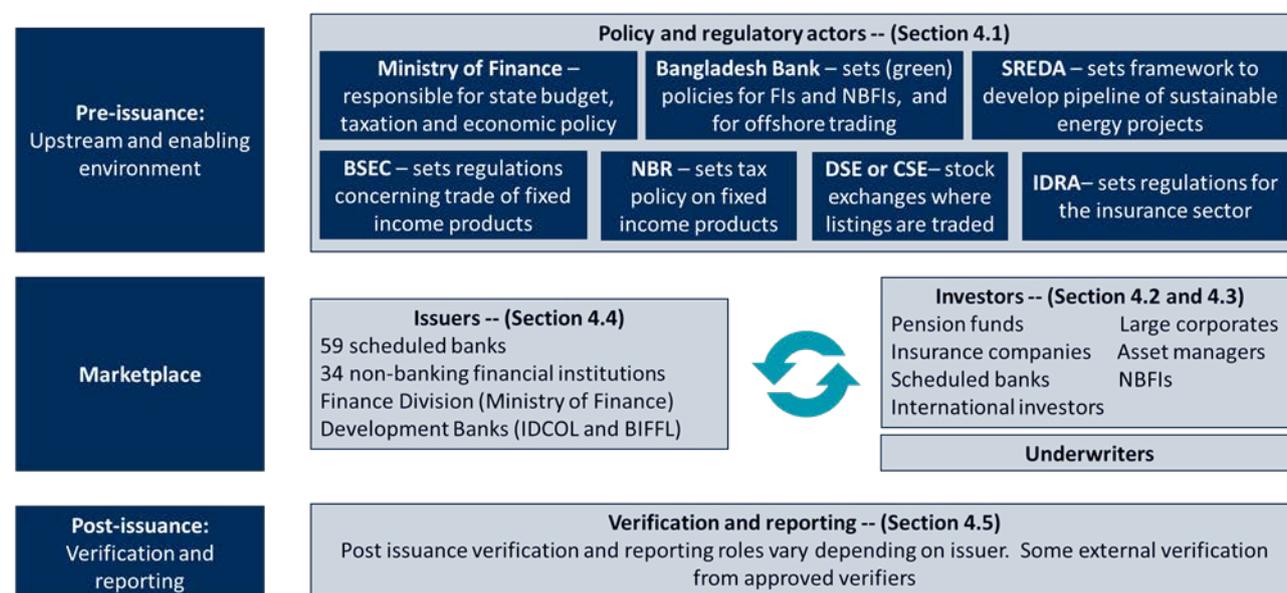
Based on the NDC targets as well as sectoral targets in recent policy documents, the IFC estimates total climate-smart investment potential in Bangladesh to be USD 172 billion between 2018 and 2030. The analysis assumes that Bangladesh meets its conditional NDC as well as all announced sectoral targets, covering both mitigation and adaptation measures.

Despite the economy reaching nearly USD 300bn,⁵ Bangladesh’s fixed income market remains small and under-developed. In 2018, the bond market totalled USD 16bn, or about 6% of GDP, compared to 16% in India. Government bonds make up the bulk of outstanding bonds. The corporate debt market is very limited with only one issue listed on public stock exchanges.⁶ The private bond market is largely limited to commercial banks issuing subordinated debt to meet capital adequacy requirements.

Key stakeholders in Bangladesh

Successfully issuing and placing a green bond requires a number of key stakeholders before issuance, to make the transaction, and after the issuance. Figure A summarizes the key players in each stage of issuance.

Figure A. Market development requires a range of stakeholders work together



Source: Vivid Economics

Investors

³ Mainly: [Government of Bangladesh \(2015\), Intended Nationally Determined Contributions – Bangladesh](#), IFC (2017), *Climate Investment Opportunities in South Asia*, and [Global Infrastructure Hub \(2017\), Bangladesh Global Infrastructure Outlook – Country Profile: Bangladesh](#).

⁴ [Government of Bangladesh \(2015\), Intended Nationally Determined Contributions – Bangladesh](#)

⁵ USD 274bn in 2018 ([World Bank data](#)).

⁶ This is issued by an Islamic Bank and is only technically a bond instrument (World Bank JCAP (2018), *Bangladesh Diagnostic Report*)

Local commercial banks and asset management companies are the domestic institutions with the highest potential to invest in green bonds. In general, we would anticipate that investors with higher assets under management and a higher share in fixed income, would be more likely to invest in a green bond. Two major banks have high assets under management that are an order of magnitude greater than other domestic investors. Similarly three asset management companies have relatively high potential to invest in a green bond. Considering there are relatively few opportunities to invest in fixed income assets in Bangladesh as the bond market is still nascent, this could suggest there is suppressed demand from these asset managers.

The most promising international investors will have both a clear ESG interest and sizeable emerging market portfolio to be able to comfortably assess and manage risk with emerging market debt. Three large institutional investors with long-standing track records in emerging market debt are PIMCO, BNP Paribas and HSBC. HSBC and IFC have recently launched the Real Economy Green Investment Opportunity Fund (REGIO), which focusses exclusively on green bond issuances from non-financial corporates in emerging markets. In addition, we identify two specialist asset managers: NN Investment Partners and Ostrum Asset Management. Both have a distinct focus on long term sustainability and are signatories to the UN Principles of Responsible Investment (PRI). Finally, we identify four international investors with dedicated green bond funds who also have high investment potential: Amundi, Robeco, Nikko Asset Management and Lombard Odier are all specialist asset managers, that manage a number of funds with a clear ESG focus. In 2018, IFC and Amundi successfully closed the first round of fundraising for the Amundi Planet Emerging Green One (EGO) Fund, the world's largest green bond fund focused on emerging markets.⁷

Issuers

In Bangladesh, where the fixed income market is still at an early stage of development, the number of potential issuers is relatively limited. These are summarized in the bullets below:

- 59 scheduled banks;
- 34 non-banking financial institutions;
- 2 state-owned financial institutions (included in the 34 NBFIs), which have a mandate to invest in sustainable infrastructure;
- Sovereign – the GoB regularly issues T-bonds and T-bills, through the Finance Division;
- Corporates – there are a number of large non-financial corporates who could issue a green bond. However, most of these corporates have good liquidity and are more likely to be looking for investment opportunities than another way to raise capital. There have also been instances of default on corporate issued bonds in the past, which has made it harder for non-financial corporates to place bonds in the domestic market.

Verifiers

Currently, domestic issuers must look to international firms for verification services. Bangladeshi business advisory firms do not presently supply this service. An issuer could either approach the local (domestic) branch of an international company that provides such services elsewhere, or it could direct contract with an overseas verifier. The choice between the two would depend on the subject matter expertise needed for the bond issuance and the existing relationship between the issuer and the business advisory firm.

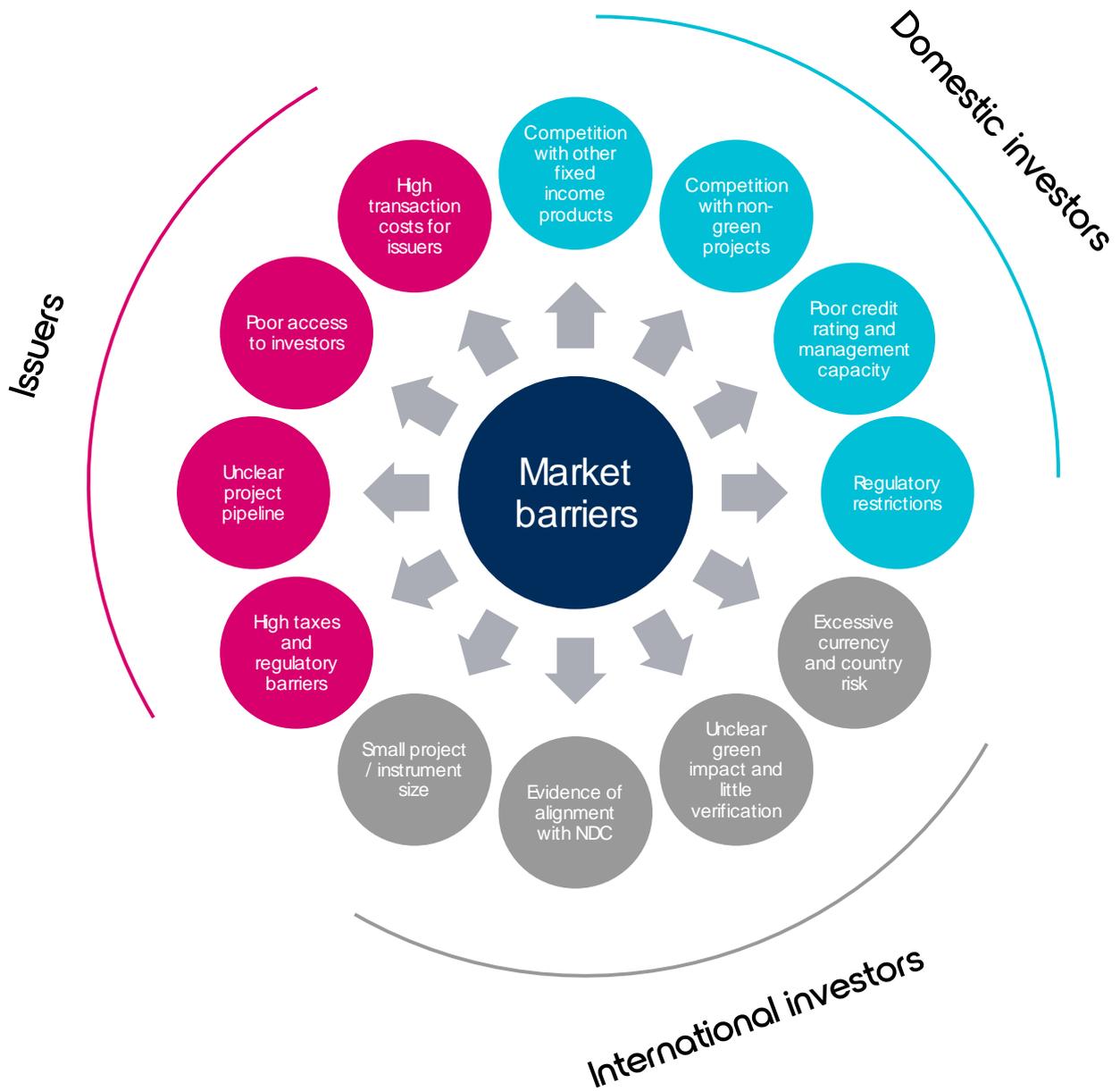
⁷ [Amundi \(2018\), IFC and Amundi successfully close world's largest green bond fund](#)

Two India-based advisory firms, who have both certified bonds in India to Climate Bond Initiative's (CBI) international standard, could offer this service in Bangladesh. India has the most developed neighbouring verification market. Indian entities have issued 30 green bonds and over 70% have third party verification. Arrangements can be made to deliver verification services through the KPMG Bangladesh office drawing on expertise from New Delhi as necessary. EVI does not have a physical presence in Bangladesh but can provide verification services from overseas. Both firms have expertise in renewables and agriculture and follow international professional standards.

Market barriers

Investors and issuers alike face a number of key barriers to investing in and issuing a green bond respectively, summarised in Figure B below. These barriers cover a wide range of concerns including the attractiveness of a green bond instrument relative to other financial products, the availability and quality of the underlying project portfolio and the capacity of service providers in the domestic market to deliver a successful issuance. In the main body of the report we explain these barriers in more detail.

Figure B Through structured interviews, we identified 12 barriers to green bond market development

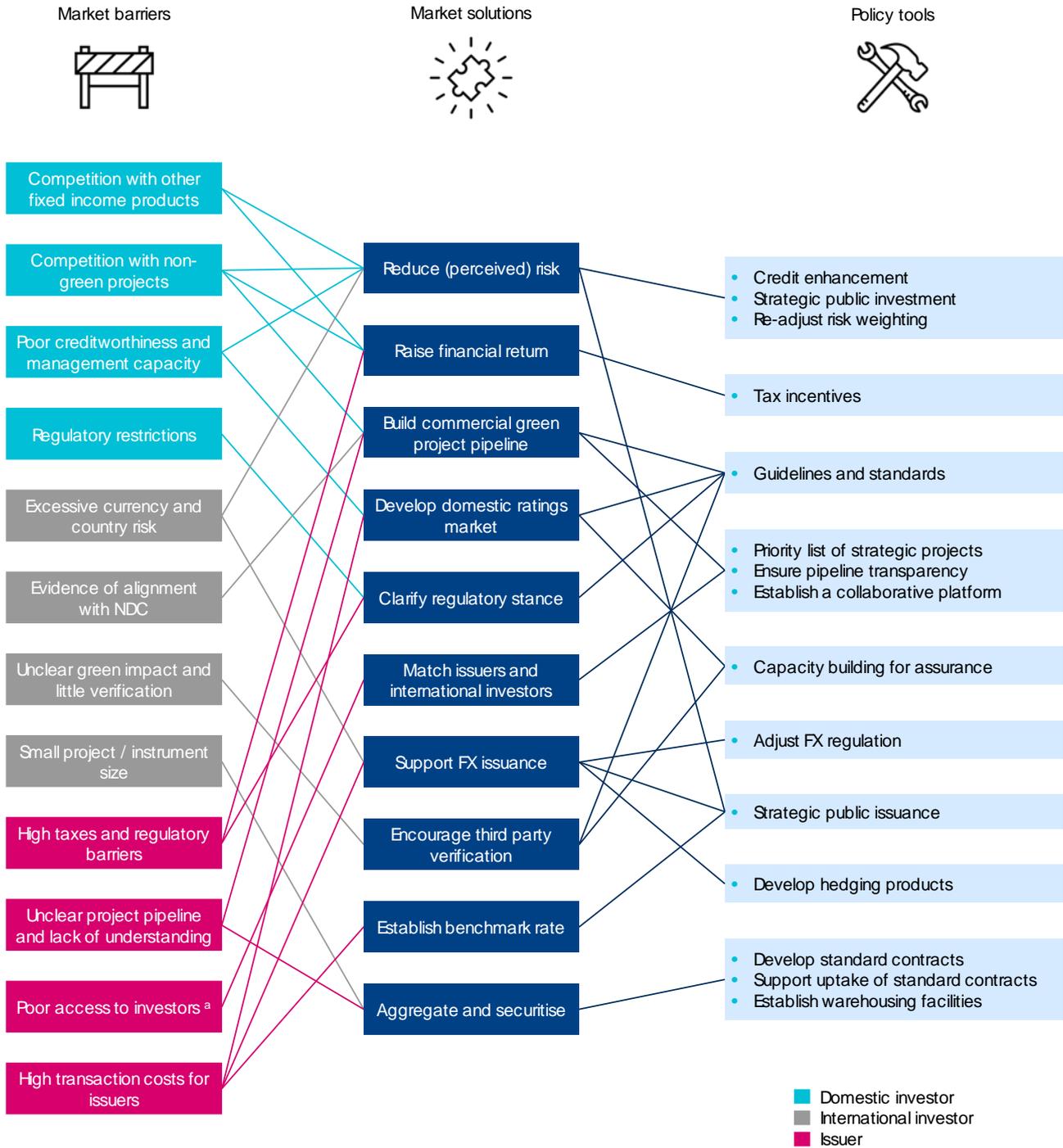


Source: Vivid Economics

Regulatory and policy solutions

Figure C maps the market barriers identified above, first to market solutions and then to the policy tools that underpin them. Green bond market development is complex, involving several different stakeholder groups each with interdependent relationships. Mirroring this, the set of possible policy tools is large and interconnected. Some groups face the same market barriers, some solutions address multiple barriers at once and some policy tools help support multiple solutions. In the main body of the report, we explore each of the market solutions in turn, focusing our attention on the policy tools required to support them.

Figure C We map each market barrier, first to market solutions and then to policy tools



Source: Vivid Economics

Matching solutions to policy tools and implementing stakeholders

Table A summarizes the market solutions discussed above, matches them to policy tools and identifies the best placed public sector actors for their implementation. Stakeholders listed are either elected to lead the implementation of the policy tool, or to support its implementation. For each tool, we propose an indicative time frame based on: (i) the necessity of the tool to advance market development and (ii) the ease with which it can be implemented.

Table A Summary of prioritised policy tools

Policy tool	Market solution(s)	Implementing stakeholders	Time frame
Guidelines and standards	Build commercial green project pipeline; develop domestic ratings market; clarify regulatory stance; encourage third party verification	<u>Lead:</u> Bangladesh Bank, BSEC <u>Support:</u> IDRA; Ministry of Finance	0 - 0.5 years
Priority list of strategic projects	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> NDC-NAP Advisory Committee; Ministry of Environment and Forests; Power Division; Ministry of Industry; Road Transport and Highways Division <u>Support:</u> SREDA; Bangladesh Bank; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Ensure pipeline transparency	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> SREDA; Bangladesh Bank <u>Support:</u> Ministry of Finance; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Establish a collaborative platform	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> SREDA; Bangladesh Bank <u>Support:</u> Ministry of Finance; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Credit enhancement	Reduce (perceived) risk	<u>Lead:</u> Multilateral development banks (IFC, ADB, CDC); state-owned financial institutions (IDCOL, BIFFL)	0 - 0.5 years
Strategic public issuance	Reduce (perceived) risk; support FX issuance; establish benchmark rate	<u>Lead:</u> Ministry of Finance; state-owned financial institution (IDCOL, BIFFL)	0.5 - 1.5 years
Strategic public investment	Reduce (perceived) risk	<u>Lead:</u> Multilateral development banks (IFC, ADB, CDC); state-owned financial institution (IDCOL, BIFFL)	0.5 - 1.5 years
Adjust FX regulation	Support FX issuance	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	0.5 - 1.5 years
Tax incentives	Raise financial return	<u>Lead:</u> Ministry of Finance; <u>Support:</u> Bangladesh Bank	0.5 - 1.5 years
Develop hedging products	Support FX issuance	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	1.5 - 3 years
Capacity building for assurance services	Develop domestic ratings market; encourage third party verification	Bangladesh Bank;	1.5 - 3 years

Policy tool	Market solution(s)	Implementing stakeholders	Time frame
		BSEC; IDRA	
Develop standard contracts	Aggregate and securitise	<u>Lead</u> : Bangladesh Bank <u>Support</u> : BSEC; IDRA	1.5 - 3 years
Support uptake of standard contracts	Aggregate and securitise	<u>Lead</u> : Bangladesh Bank <u>Support</u> : BSEC; IDRA	1.5 - 3 years
Establish warehousing facilities	Aggregate and securitise	<u>Lead</u> : Bangladesh Bank; state-owned financial institution (IDCOL)	1.5 - 3 years
Readjust risk-weighting	Reduce (perceived) risk	<u>Lead</u> : BSEC <u>Support</u> : Bangladesh Bank; IDRA	1.5 - 3 years

Source: Vivid Economics

Conclusion and the role of Bangladesh Bank

The first set of high priority actions, suggested to be implemented in the first 6 months, aim to build a strong commercial green project pipeline in Bangladesh and should be largely led by Bangladesh Bank. An immediate priority for Bangladesh Bank is to lead the development and publication of a set of national guidelines and standards on green bonds covering both the technical specification of the instrument as well as eligible project activities. This must be developed in collaboration with BSEC and IDRA with buy-in from the Ministry of Finance. The next foundation for green bond pipeline development is the identification of a list of priority projects, for which Bangladesh Bank can only take a supportive role as it will need to be aligned with both Bangladesh’s NDC and broader development strategies.⁸ However, Bangladesh Bank can play a key role in communicating this list to investors (especially international) in partnership with SREDA and the Ministry of Finance. It may be that domestic institutions can rely on the support of multilateral development banks for investor-matching services.

Another set of high priority actions focus on reducing the risk associated with green bonds, though Bangladesh Bank is best positioned to play a supportive rather than leading role. The policy tools here center around a flagship demonstration issuance to kick-start the market and familiarize the investor and issuer community with green bonds. This could be achieved in one of three ways (or a combination thereof): (i) a strategic public issuance from a sovereign entity or state-owned financial institution, (ii) the integration of credit enhancement or (iii) cornerstone investment from either a multilateral development bank or state-owned financial institution. Bangladesh Bank should encourage such issuances but does not need to play a central

⁸ It is likely some combination of the NDC-NAP Advisory Committee or its represented Ministries who is best placed to devise this list, most notably the Ministry of Environment and Forests and the Power Division, but the Local Government Engineering Department (LGED), Water Development Board, Bangladesh Inland Water Transport Authority (BIWTA), Ministry of Disaster Management, Road and Transport Highways Division, Ministry of Road Transport and Bridges are also implementing climate projects.

role in structuring or managing the transaction. Rather, these efforts should be led by the Government of Bangladesh or development banks.

Medium priority actions, to be implemented in roughly 0.5-1.5 years' time, should be led by Bangladesh Bank as they involve fundamental changes to financial regulation and building long term market capacity. First, current regulation surrounding investment holdings and lending in foreign currencies should be reviewed and, if possible, changed so that domestic financial institutions can more easily fold FX-denominated instruments and hedge FX risk. This must be led by Bangladesh Bank in close cooperation with BSEC and IDRA. Alongside this, effort should be made to develop the domestic market for assurance services, green bond verification and FX hedging. Bangladesh Bank should take a lead role in designing and facilitating capacity building activities, in coordination with BSEC and IDRA.

Low priority actions, to be implemented in 1.5-3 years' time, focus on building the securitization market, and more ambitious changes in financial regulation and fiscal policy to improve the relative attractiveness of green bonds. Bangladesh Bank can spearhead efforts to stimulate domestic securitization though this first requires the development of a sufficiently 'deep' green loan market. Once the sector reaches this stage of maturity, Bangladesh Bank itself would be well placed to manage a warehousing facility given its current experience with the green refinancing program. If Bangladesh Bank and the Government of Bangladesh were keen to provide additional stimulus to the green bond market, they could also explore adjusting risk-weightings and tax incentives in favor of green bonds respectively.

Bangladesh Bank has an important and unique role to play to facilitate rapid and meaningful market development, though wider cooperation across the public sector is essential. As laid out above, there are clear steps for immediate action from Bangladesh Bank as well as longer term strategies to deepen Bangladesh's green financial sector. Nonetheless, at-scale green bond market development is unlikely to be achieved with isolated effort from a single institution. It will require a coordinated long-term approach across Bangladesh Bank, BSEC, IDRA, the Ministry of Finance and SREDA (among others), which may benefit from first establishing an agreed national process and responsible authority for co-ordinating and leading the development of Green Bonds in Bangladesh. Moreover, the approach to supporting green bond development will need to adapt over time as the green bond market (both domestic and international) develops.

1 Introduction

The International Finance Corporation (IFC) in partnership with the Swedish International Development Cooperation Agency, commissioned Vivid Economics and Climate Bonds Initiative to undertake this study, to assess the potential for a domestic green bond market in Bangladesh, and to support Bangladesh Bank in helping this market achieve its potential. This report identifies the potential pipeline for green bonds in Bangladesh, relevant stakeholder and the barriers they face, and then recommends next steps to be taken by Bangladesh Bank and other public sector actors to foster the green bond market.

It draws from desk-based research in combination with a series of structured interviews covering the key stakeholders for market development, both in Bangladesh and globally. These included potential domestic investors, international investors, issuers, verifiers as well as the relevant regulatory and policy actors.

The remainder of this report is structured as follows:

- **Section 2** provides context through an introduction to the global green bond market internationally, the profile of green project opportunities in Bangladesh and the current state of the domestic fixed income market.
- **Section 3** sets out the market architecture required for issuing a green bond.
- **Section 4** summarizes the key stakeholders for a green bond issuance in Bangladesh as well as their respective roles and responsibilities. It provides an overview of the key policy and regulatory actors, the potential domestic and international investor base who could subscribe to a green bond issued in Bangladesh, and the potential issuers of a green bond and their readiness to issue a green bond. Finally, it sets out Bangladesh's capacity for verification of green projects to meet international standards.
- **Section 5** discusses the market barriers to participating in the green bond market, split out for domestic investors, international investors and issuers.
- **Section 6** identifies and discusses solutions to address the barriers identified in the previous sections and stimulate the green bond market, and concludes by matching these solutions to policy tools and the best placed implementing stakeholders to execute them.
- **Section 7** concludes and sets out the prioritized actions for Bangladesh Bank in supporting future market development.

2 Context and background

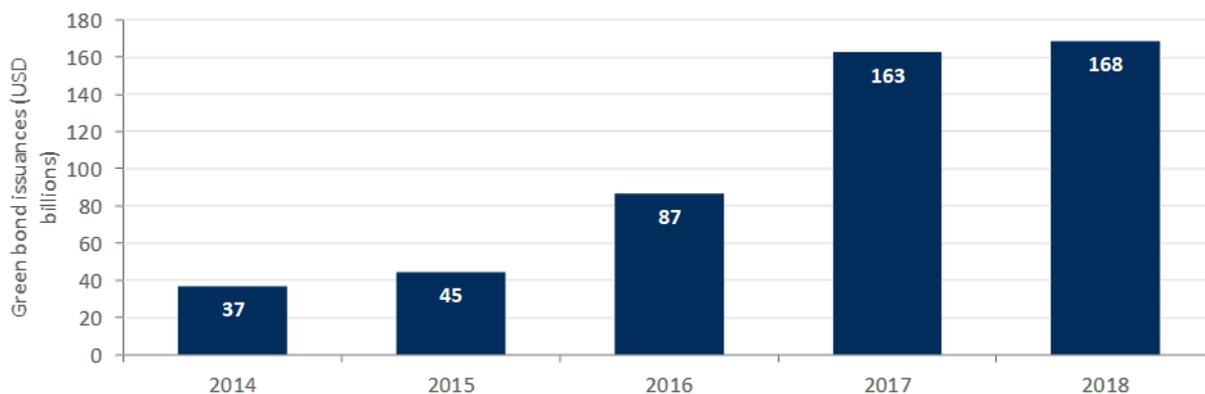
In this section, we provide both global and domestic context for green bond market development in Bangladesh. Section 2.1 provides an overview of green bond market development globally, Section 2.2 discusses the potential green project pipeline in Bangladesh and Section 2.3 describes the maturity of Bangladesh’s fixed income market.

2.1 Global green bond market

Green bonds offer investors and issuers a product dedicated to raising finance for ‘green’ (or sustainable) projects. The term ‘green bonds’ refers to bonds that exclusively finance low carbon and climate-resilient projects. The financed projects must clearly deliver defined environmental benefits. Full standards of what constitutes the label ‘green bond’ are still emerging,⁹ though in general they provide financing to a wide range of sectors including transport, energy, buildings, industry, water, waste, agriculture and forestry. Green bond indices have also emerged to provide investors with a means to evaluate performance and assess risk.¹⁰

Although still a small portion of the bond market, green bond issuances have grown rapidly. Since the first issuance of a ‘Climate Awareness Bond’ in 2007 by the European Investment Bank, and the first explicitly labelled Green Bond issued in 2008 by the World Bank, the green bond market has grown significantly. In 2014, labelled green bonds accounted for USD 37 billion. In just 4 years, this has grown to USD 168 billion (see Figure 1). By the beginning of July 2019, USD 123 billion have already been issued, in line with the Climate Bonds Initiative annual issuance target of USD 250 billion.¹¹

Figure 1. The green bond market has grown rapidly since 2014, with USD 167 billion issued in 2018



Source: CBI (2019), *Green Bond Market Highlights 2018*

⁹ OECD (2015) Infrastructure Financing Instruments and Incentives

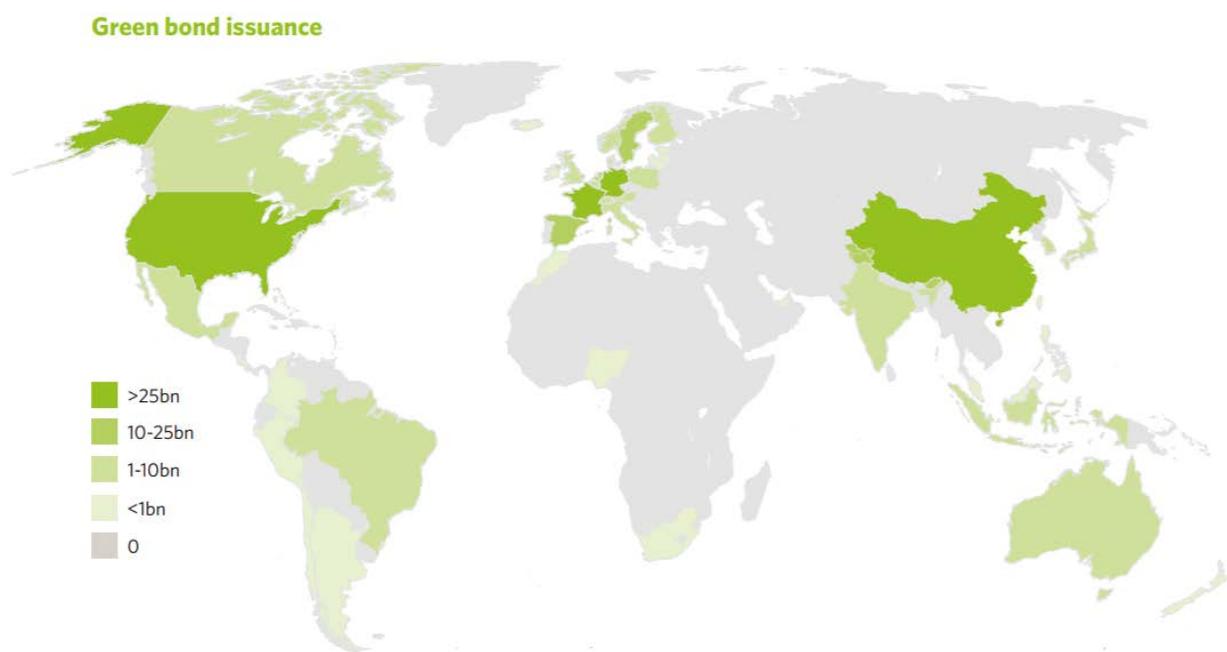
¹⁰ Labelled green bond indices include S&P Dow Jones, Solactive, Barclays MSCI and Bank of America Merrill Lynch.

¹¹ [Climate Bonds Initiative \(2019\), Market Blog #29 - 11/7/19](#)

A variety of issuers now support green bonds, as well as several dedicated investment funds. Prior to 2011, all labelled green bonds were issued by development banks. Now a range of corporate entities, commercial banks, municipal Governments and Government agencies issue green bonds. By 2018, the green bond universe totaled USD 389 billion of outstanding debt, spread across 498 issuers.¹² This includes only specially labelled green bonds, vetted through a dedicated verification process. Specialized green bond funds support the market with asset managers such as Nikko Asset Management and Amundi developing their own funds.

The Asia-Pacific region has now issued over 250 green bonds by 162 different institutions. Currently, there is roughly USD 85 billion worth of outstanding green bond debt in the region, accounting for 22% of the global market.

Figure 2 Several countries in Asia-Pacific have issued green bonds



Source: Climate Bonds Initiative (2019), *Bonds and Climate Change: The State of the Market in 2018*

The growing popularity of green bonds reflects a number of perceived advantages relative to plain vanilla bonds. These include:

- **Access to a new and growing pool of environmentally aware investors.** Asset management companies are increasingly improving reporting on the ESG impacts of their investments alongside launching specific ESG-focused funds to appeal to this market.
- **Enhanced transparency to ensure that money is spent on projects and not misappropriated or diverted for non-sanctioned uses.** The post-issuance reporting requirements associated with a green bond provide assurance that the money is invested in the intended projects or assets.

¹² The total value of outstanding green bonds is equal to the cumulative value of all issued green bonds minus the cumulative value of all green bonds that have reached maturity. Thus, it represents the total principal that investors have currently lent to issuers through green bonds. Figure from Climate Bonds Initiative (2019), *Bonds and Climate Change: The State of the Market in 2018*

- **Leadership in social and environmental responsibility.** Both financial and non-financial corporates across the world are increasingly looking to improve their public image. Participation in the green bond market offers a well-recognized and safe way to do so.

However, issuing a green bond requires a higher level of capacity among financial institutions. Green bonds require additional processes and verification standards to be in place compared to a vanilla bond. In particular this means that (i) local financial institutions must have the technical and financial capacity to issue vanilla bonds, (ii) that local financial institutions and verifiers have the capability to meet the use of proceeds and verification requirements, and (iii) that the benefits of issuing a green bond outweigh any additional transaction costs relative to a vanilla bond, such as the cost of certification.

2.2 Demand for green finance in Bangladesh

In order to meet the SDGs, Bangladesh requires an additional USD 233 billion in infrastructure investment between 2016-2040.¹³ The Global Infrastructure Hub estimates that Bangladesh needs a cumulative total of USD 608 billion of investment in infrastructure sectors (water, electricity, telecom, ports, airports, rail and road) between 2016-2040,¹⁴ in order for the country to match the performance of their best performing peers in 2040 (Table 1).^{15,16} Investment needs to meet the SDG targets would require an additional USD 41 billion.¹⁷ Current trends of actual investment suggest there will be roughly USD 417 billion over this period, which leaves a gap of USD 233 billion to meet the SDG targets. The largest investment needs lie in the power sector, with a sectoral investment gap of USD 130 billion.

Table 1 Cumulative infrastructure investment needs, current trends and resultant investment gaps

2016-2040, Billion USD, 2015 prices and exchange rates	Road	Rail	Airports	Ports	Telecoms	Electricity	Water	TOTAL
Business as usual investment (current trends)	139	16	7	3	60	150	42	417
Investment need to meet best performing peer	139	26	8	3	101	250	82	609
Gap to meet best performing peer	0	10	1	0	41	100	40	192
Investment need to meet the SDGs	139	26	8	3	101	280	93	650
Gap to meet the SDGs	0	10	1	0	41	130	51	233

Note: Investment needs in order for Bangladesh to match the performance of its best performing peers

Source: Vivid Economics, based on [Global Infrastructure Hub \(2017\)](#)

¹³ [IISD \(2018\), Bangladesh, UN Consider Expected LDC Graduation in 2024](#)

¹⁴ [Global Infrastructure Hub \(2017\), Bangladesh Global Infrastructure Outlook – Country Profile: Bangladesh](#). Analysis and modelling was done by Oxford Economics, who the Global Infrastructure Hub engaged to produce Global Infrastructure Outlook.

¹⁵ After controlling for differences in the economic and demographic characteristics of each country, and taking into account the current quality of infrastructure. Peers are identified as other countries within the same income group. Performance is benchmarked against the 75th percentile of each peer group to avoid linking the forecasts to countries with unusually high rates of investment. [Global Infrastructure Hub \(2017\), Global Infrastructure Outlook: Infrastructure investment needs – 50 countries, 7 sectors to 2040](#).

¹⁶ The Global Infrastructure Outlook is a top-down assessment based on the national population and relatively generic infrastructure needs per population, and maps the investment gap with Bangladesh to match the performance of their best performing peers.

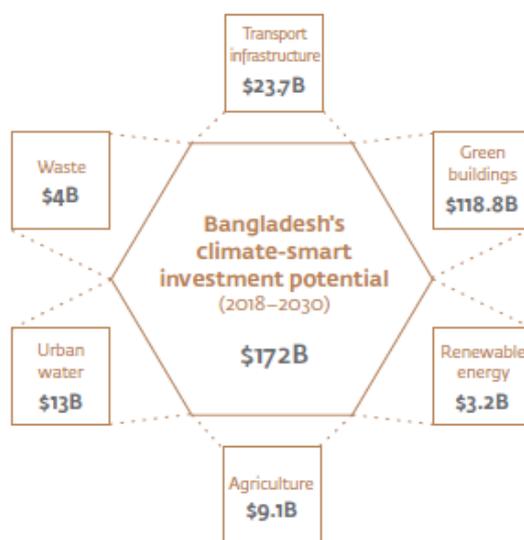
¹⁷ The UN Sustainable Development Goals (SDGs) for universal access to electricity, water and sanitation. These are included as access is currently less than 100 percent in Bangladesh

Bangladesh’s Nationally Determined Contribution (NDC), prioritizes the energy, transport, and industrial sectors. Bangladesh has ratified an ambitious and progressive NDC, which sets out a number of quantified targets to reduce greenhouse gas emissions by 5% by 2030 compared to a business as usual scenario, or 15% conditional on mobilizing international finance and support from international sources.¹⁸ While the priority action sectors are energy, transport and industry, the NDC action plan also lists conditional measures in other sectors such as buildings, agriculture, waste, land use and forestry sectors. Furthermore, as Bangladesh is highly vulnerable to heavy rains and flood damage from tropical cyclones, adaptation is also a major priority for the country.¹⁹

An estimated USD 26.5 billion will be needed between 2011 and 2030 for Bangladesh to meet its conditional targets, as outlined in the NDC. Almost 65% of that will be needed for the switch to coal power generation (all new generating capacity). The NDC does not list the cost of measures needed to achieve unconditional targets.

Based on the NDC targets as well as sectoral targets in recent policy documents, the IFC estimates total climate-smart investment potential in Bangladesh to be USD 172 billion between 2018 and 2030 (Figure 3). The analysis assumes that Bangladesh meets its conditional NDC as well as all announced sectoral targets, covering both mitigation and adaptation measures.

Figure 3 Bangladesh climate-smart investment potential



Source: IFC (2017), *Climate Investment Opportunities in South Asia*

Priority sectors in all analyses include renewable energy (Section 2.2.1), energy efficiency in industry and buildings (Section 2.2.2), and transport (Section 2.2.3). Table 2 sets out the estimated investment potential in Bangladesh’s priority sectors, as estimated in the NDC and in the IFC and Global Infrastructure Outlook analyses. The three reports are not intended to be comparable – they examine different sectors and go into different levels of detail within those sectors and investment timeframes. For example, the IFC estimate

¹⁸ Mainly: [Government of Bangladesh \(2015\), *Intended Nationally Determined Contributions – Bangladesh*](#), IFC (2017), *Climate Investment Opportunities in South Asia*, and [Global Infrastructure Hub \(2017\), *Bangladesh Global Infrastructure Outlook – Country Profile: Bangladesh*](#).

¹⁹ [Government of Bangladesh \(2015\), *Intended Nationally Determined Contributions – Bangladesh*](#)

includes more sectors than the other two but a shorter time horizon. Moreover, the Global Infrastructure Outlook is a top-down assessment based on the national population, average infrastructure ‘needs’ per person, and the investment needed to match the performance of Bangladesh’s best performing peer. The IFC and NDC undertake bottom-up assessments, based on a needs assessment to reach specified goals, taking into account actual public investment projects over the next 10-15 years.

Table 2 Estimated investment potential in Bangladesh’ priority sectors

Mitigation measure	NDC estimated required investment (billion USD, 2011-2030)	IFC (2017) climate-smart investment potential (billion USD, 2018-2030)	Global Infrastructure Outlook (2017) investment gap incl SDGs (billion USD, 2016-2040)
RENEWABLE ENERGY	4.52	3.2	130
Developing utility scale solar energy	1.3	1.1	Does not specify sub-sectors and includes non-renewable energy investment needs
Wind energy	0.6 (scaling up onshore wind)	0.45	
Expanding the solar homes programme	1.2	0.85 (small scale solar)	
Solar irrigation pumps	0.6		
Solar mini-grids	0.25		
Solar nano-grids	0.27		
Pico-solar	0.1		
Biomass	0.2 (scaling up biomass production from sugar)	0.66 (biomass and waste-to-energy)	
Small hydropower		0.13	
INDUSTRY – ENERGY EFFICIENCY	17.13		
Switching to 100% super critical coal power generation (all new generating capacity)	16.5		

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Mitigation measure	NDC estimated required investment (billion USD, 2011-2030)	IFC (2017) climate-smart investment potential (billion USD, 2018-2030)	Global Infrastructure Outlook (2017) investment gap incl SDGs (billion USD, 2016-2040)
Repowering steam turbine with CCGT	0.63		
BUILDINGS – ENERGY EFFICIENCY		118.8	
Energy efficiency in buildings in residential sector		100	
Energy efficiency in buildings in commercial sector		18	
TRANSPORT	5.35	23.7	11
Building an elevated express highway in Dhaka for decongestion of main urban arteries	2.65	Based on NDC and other transport policy priorities, & approved projects for the development of transport-related infrastructure	USD 10 (rail) + USD 1 (airport). Road and port investment needs are met by current trends
Dhaka mass rapid transit system	2.7		
CLIMATE-SMART URBAN WATER		13	51 (includes non-climate water needs)
CLIMATE-SMART AGRICULTURE		9.1	
MUNICIPAL SOLID WASTE		4	
TOTAL	26.5	172	192

Source: Vivid Economics, based on Government of Bangladesh (2015), *Intended Nationally Determined Contributions* and IFC (2017), *Climate Investment Opportunities in South Asia*, Global Infrastructure Outlook (2017), *Country Profile – Bangladesh*

2.2.1 Renewable energy

The GoB aims to increase the national electricity capacity to 24 GW with a 10% share for renewables by 2021, and capacity is expected to grow to 40 GW by 2040.²⁰ Of the current 19 GW installed capacity, only 3% is from renewable energy sources.²¹ Investment is largely publicly funded, with some limited private participation.

The NDC estimates an investment requirement of USD 4.5 billion for selected renewable energy measures.²² The IFC estimate is slightly lower at USD 3.2 billion,²³ albeit over a different time period, but both analyses estimate the greatest potential for solar energy.

Reaching a share of 10% renewables by 2021 will require a range of technologies, both for grid connected and distributed energy solutions. The Power System Master Plan and the NDC roadmap focus on a combination of additional wind and solar generation capacity and imported hydropower.

- The Power System Master Plan commits to a target of more than 3.8 GW of domestic renewable energy generation capacity by 2041, combined with an increase of imported hydropower.²⁴ To put this into perspective, India, with a population approximately 10 times bigger than Bangladesh, is set to install 275 GW renewable energy by 2027.²⁵
- The NDC Roadmap and Action Plan repeats the target of 10% renewables share by 2020, with a pledge to add 1,300 MW of onshore wind generating capacity and 1,700 MW of solar capacity to the grid by 2021.²⁶ Despite the large technical potential for utility scale solar, the market is still at a very nascent stage. While over 4,000 MW of unsolicited proposals have been submitted to the GoB, only one project is now operational, the 28MWp Teknaf site.²⁷ The inability to use agricultural lands for solar projects as well as the complications in acquiring land is hindering growth.
- The GoB published its rooftop solar PV net metering policy in July 2018, expecting to foster substantial rooftop solar potential across industrial and commercial properties. Already over 9 MW have been installed under this program.²⁸
- Off-grid renewables have expanded rapidly in the last decade in Bangladesh, with further investment targeted:
 - ◇ The IDCOL-led Solar Homes System (SHS) program is one of the largest in the world, with over 5.5 million SHS already deployed, with a cumulative capacity of over 230 MW capacity.²⁹ However, further investment will be limited, as only TR KABITA (a safety net program for low-income communities) is deploying free SHS at the moment.

²⁰ Power Division (2008), *Renewable Energy Policy of Bangladesh*

²¹ SREDA website, May 2019, Total Power Generation Capacity

²² Government of Bangladesh (2015), *Intended Nationally Determined Contributions - Bangladesh*

²³ IFC (2017), *Climate Investment Opportunities in South Asia*

²⁴ Power Division (2016), *Power System Master Plan 2016*

²⁵ IEEFA (2019), *India's Electricity Sector Transition Still on Track Despite a Weak FY2018/19*

²⁶ Ministry of Environment, Forest and Climate Change (2018), *Roadmap and Action Plan for Implementing Bangladesh NDC*

²⁷ PES (2018), *The First Utility Scale Solar Project in Bangladesh*

²⁸ SREDA, *Statistics of Installed Net Metering System*

²⁹ IDCOL (2019), *Renewable Energy / Solar Home System Program*

- ◇ Over 20 solar mini-grids are in operation with a total capacity of around 20 MW, and the potential to install up to 200 over the next five years is being explored, representing a potential capacity of around 40 MW.
- ◇ Over 1,000 solar irrigation pumps are now operational with a total capacity of 30 MW, with ambitions to scale up this market to 50,000, representing a potential capacity of around 600 MW in the next five years.³⁰
- Other renewables targeted include biomass and biogas projects.

2.2.2 Energy efficiency in industry, buildings and agriculture

Energy efficiency will be critical in achieving Bangladesh's NDC commitments. The NDC sets an unconditional target for emission reductions of 5% in the power sector (and 18% conditional), focusing on energy efficiency in the commercial sector (green buildings), incentivising uptake of improved gas cookstoves and promoting sales of high efficiency products. For industry, the NDC has an unconditional emissions reduction target of 4% (and 10% conditional) from industrial energy consumption, largely focussed on energy efficiency.³¹

The GoB has set sectoral targets to achieve 15% reduction in primary energy consumption per unit of GDP in 2021 and 20% by 2030. Primary energy consumption is expected to increase threefold by 2030. Industry represents the largest energy user, accounting for 50% of primary energy consumption, followed by the residential sector at 30%.³² The GoB has set sectoral energy efficiency targets and announced plans to implement energy labelling and energy management standards (Figure 4). With these goals, Bangladesh is aiming to catch up with the global leader in energy intensity in industry and buildings by 2025.³³ Energy savings from efficiency improvements will also help to reduce the fiscal burden of energy subsidies and help narrow the fiscal deficit.³⁴

³⁰ IDCOL (2019), *Renewable Energy / Solar Irrigation Program*

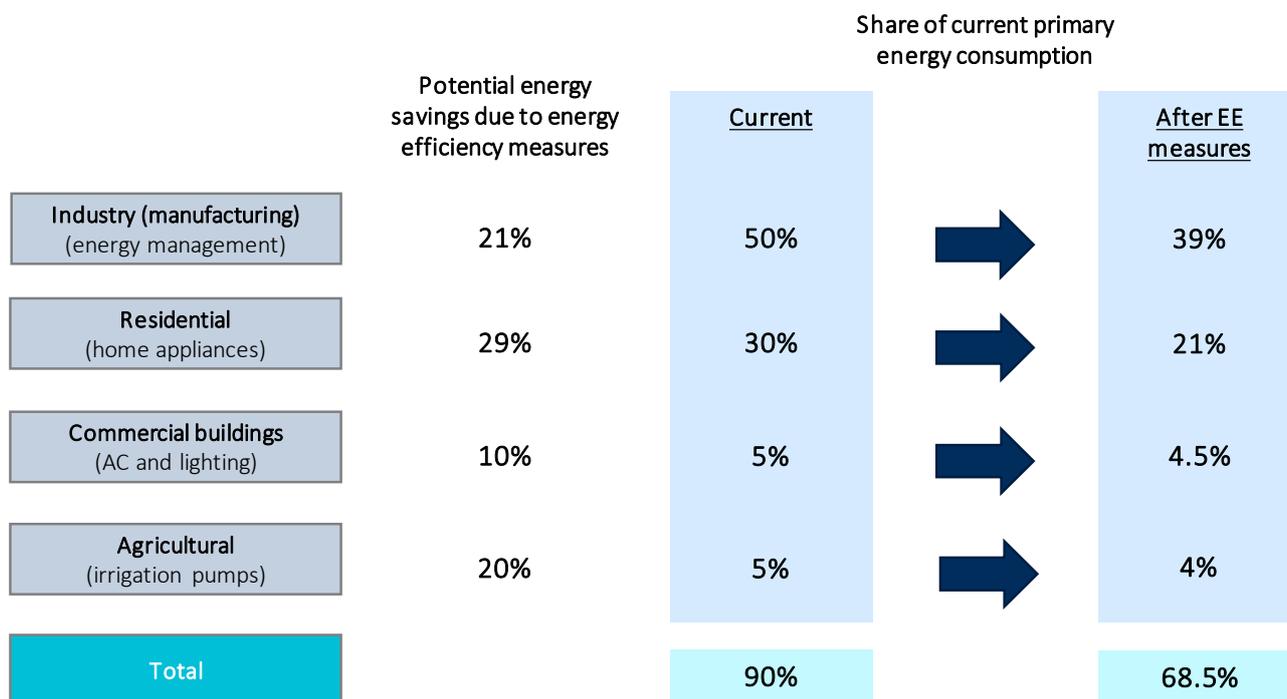
³¹ Mainly: *Government of Bangladesh (2015), Intended Nationally Determined Contributions – Bangladesh*, IFC (2017), *Climate Investment Opportunities in South Asia*, and *Global Infrastructure Hub (2017), Bangladesh Global Infrastructure Outlook – Country Profile: Bangladesh*.

³² SREDA and Power Division (2015), *Energy Efficiency and Conservation Master Plan up to 2030*

³³ SREDA and Power Division (2015), *Energy Efficiency and Conservation Master Plan up to 2030*

³⁴ IDCOL (2019), *Energy Efficiency Market Outlook for Bangladesh*

Figure 4 Energy efficiency measures could save 21.5% of current primary energy consumption



Note: Current primary energy consumption based on 2013-2014 data. Energy efficiency potential taken from the Energy Efficiency and Conservation Master Plan. Realization of potential is dependent on implementation of accompanying Action Plan.

Source: Vivid Economics, based on SREDA and Power Division (2015), *Energy Efficiency and Conservation Master Plan up to 2030*

Within the industry sector, the largest potential for energy efficiency is in manufacturing, translating into a USD 2 billion investment opportunity.³⁵ The majority of the manufacturing investment potential (USD 1.6 billion) sits in the Ready-Made Garments (RMG) and textile sector.³⁶ Energy efficiency in industry generates multiple benefits ranging from enhanced productivity and lower production costs to improved working conditions.

For green buildings, the energy efficiency targets combined with Bangladesh’s increasing housing deficit present significant investment opportunities. The housing deficit is expected to reach 8.5 million units by 2021.³⁷ To remedy this, the GoB is adding an estimated 500,000 homes in urban areas and 3.5 million in rural areas every year.³⁸ SREDA’s energy efficiency targets and Bangladesh’s commitments under the Paris Agreement, which include a of 25% reduction in energy consumed by commercial buildings by 2030,³⁹ create

³⁵ IDCOL (2019), *Energy Efficiency Market Outlook for Bangladesh*

³⁶ IDCOL (2019), *Energy Efficiency Market Outlook for Bangladesh*

³⁷ GuarantCo (2019), *Study of Bangladesh Bond Market*

³⁸ IFC (2017), *Climate Investment Opportunities in South Asia*

³⁹ IFC (2017), *Climate Investment Opportunities in South Asia*

a significant opportunity to ensure the new housing stock is energy efficient. To reduce energy use of existing residential buildings, SREDA has set minimum energy performance standards for home appliances.⁴⁰

The NDC focuses on energy efficiency in the power sector with investments over USD 17 billion, while the IFC estimate considers energy efficiency only in buildings and is much higher at USD 118 billion. The majority of the NDC investment (USD 16.5 billion) is allocated for super-critical coal power generation. For other industry sectors like the manufacturing sector, the investment potential is estimated to reach USD 15 billion in the next two years, with a significant opportunity for energy efficiency projects.⁴¹ The IFC analysis estimates USD 100 billion of investment potential for residential and USD 18 billion for the commercial building sector. This is based on projected green penetration of each sector, multiplied by the total cost of new construction of green buildings.

2.2.3 Transport

The NDC sets an unconditional emissions reduction target of 9% (and 24% conditional) for the transport sector. This is achieved through measures to modernise the network (moving demand for transport from roads to rails and waterways) and encourage greater efficiency of travel (reducing congestion).

The NDC Action Plan focuses on improving intercity road connections, expanding the railway system and establishing a Mass Rapid Transit System (MRTS) in Dhaka. The NDC Action Plan estimates that 70% of emissions from the transport sector can be attributed to trucks and buses, 20% to car transport, 7% to shipping and 3% to rail and domestic aviation.⁴² The Sectoral Action Plan for Transport proposes a substantial modal shift from road to rail, improved vehicle efficiency and a larger role for inland water ways to reach the NDC targets.⁴³ Specifically, a regional waterway transport project hopes to increase the use of inland waterways. In addition, the 7th Five Year Plan 2016-2030 includes a railway expansion and modernization program, and highlights the strong need for improved, sustainable, climate-resilient transport.⁴⁴

Investment in the transport sector is mostly public, with some key programs financed by international development partners. The World Bank finances the Second Rural Transport Improvement Project (approx. project value USD 417 million), the Bangladesh Regional Waterway Transport Project (USD 400 million) and the Clean Air and Sustainable Environment project (USD 71 million). JICA supports the development of the Dhaka-Chittagong Railway Development Project (USD 116 million), the Dhaka MRTS and Dhaka Integrated Traffic Management Project. ADB is involved in the Greater Dhaka Sustainable Urban Transport Projects (approx. project value USD 255 million), co-financed by GEF and AFD.

2.3 Domestic fixed income market

Despite the economy reaching nearly USD 300bn,⁴⁵ Bangladesh's fixed income market remains small and under-developed. In 2018, the bond market totalled USD 16bn, or about 6% of GDP, compared to 16% in

⁴⁰ SREDA and Power Division (2015), *Energy Efficiency and Conservation Master Plan up to 2030*

⁴¹ GuarantCo (2019), *Study of Bangladesh Bond Market*

⁴² Ministry of Environment, Forest and Climate Change (2018), *Roadmap and Action Plan for Implementing Bangladesh NDC*

⁴³ [Government of Bangladesh \(undated\), NDC Sectoral Action Plan for Transport](#)

⁴⁴ [Government of Bangladesh \(2016\), 7th Five Year Plan 2016-2030](#)

⁴⁵ USD 274bn in 2018 ([World Bank, 2019](#))

India. Estimates suggest that climate related financing needs in Bangladesh are particularly high relative to the size of the domestic banking sector. Financing needs as a share total 52% of bank lending, compared to an average of 30% across emerging markets.⁴⁶ This demonstrates the need to develop the domestic finance sector and green bond markets in particular, to offer new capacity to both refinance bank loans with longer term (and larger-scale) financing, as well as for direct financing through capital markets.

Government bonds make up the bulk of outstanding bonds. The corporate debt market is very limited with only one issue listed on public stock exchanges (see Table 3).⁴⁷

Table 3 Issue of publicly listed corporate debt securities in Bangladesh

Serial no.	Securities	Year of Issue	Features	Size (BDT mn)
1	17% Beximco Pharma Debenture*	1988	20% Convertible	40
2	17% Beximco Limited Debenture*	1989		60
3	17% Beximco Infusion Debenture*	1992		45
4	17% Bangladesh Chemical Debenture*	1993	20% Convertible	20
5	17% Beximco Synthetic Debenture*	1993		375
6	17% Beximco Knitting Debenture	1994	20% Convertible	240
7	17% Beximco Fisheries Debenture	1994		120
8	15% Eastern Housing Debenture*	1994	10% Convertible	800
9	14% Beximco Textile Debenture	1995		250
10	14% BD Zipper Debenture	1995	20% Convertible	40
11	14% Beximco Denims Debenture	1995		300
12	14% BD Luggage Debenture	1996	20% Convertible	150
13	14% Aramit Cement Debenture	1998	20% Convertible	110
14	15% BD Welding Electrodes Debenture	1999		20
15	IBBL Mudara Perpetual Bond	2007	Profit Sharing	3,000
16	ACI Zero Coupon Bond	2010	20% Convertible	1,070
17	Subordinated Bonds of BRAC Bank Ltd.	2011	25% Convertible	3,000

Note: * marked debentures are no longer available

Source: SEC, DSE and CSE reports

After 1999, there was a long period during which no corporate bonds were issued. This can be attributed to a number of defaults in interest and principal payments before 1999, which has hurt investor confidence and raised questions over the enforcement of rules and regulations.⁴⁸

⁴⁶ IFC (2018), *Raising US\$23 Trillion: Greening Banks and Capital Markets for Growth*

⁴⁷ This is issued by an Islamic Bank and is only technically a bond instrument (World Bank JCAP (2018), *Bangladesh Diagnostic Report*)

⁴⁸ GuarantCo (2019), *Study of Bangladesh Bond Market*

Between 2014 and 2016, a few corporates issued short term commercial paper but this market failed to reach scale. Starting from 2014, some corporates issued commercial paper. At the time, commercial paper was attractive to issuers as there were no restrictions on how the capital raised was used. The market slowed by 2016, as banks managing the issue of commercial paper realized that they were competing with their own corporate lending divisions (since banks ended up purchasing the papers instead of lending to the issuers).

The private bond market is largely limited to commercial banks issuing subordinated debt to meet capital adequacy requirements (see Table 4). Banks choose to raise capital through subordinated debt as it is considered part of Tier II Capital. Usually other banks or insurance companies buy this subordinated debt. Most subordinated debt is privately placed (BRAC Bank's bond was the only exception). Standard Chartered Bank is the largest issue manager. Almost all private issuances, listed in Table 4, have been subordinated bonds, with 7 years of tenure. In addition to commercial banks, a few Islamic banks have also placed private issuances.

Table 4 In 2018, several financial institutions placed bonds privately

Bank	Amount Raised (BDT)	Type	Tenure (Years)	Coupon Rate	Face value/unit (BDT)	Additional info
Eastern Bank	5 billion	subordinated	7		10 million	Non-convertible, non-listed and redeemable
United Commercial Bank	8 billion	subordinated	7		10 million	Unsecured, non-convertible, non-listed and redeemable
Shahjalal Islami Bank	6 billion	mudaraba subordinated	7		0.1 million	
Trust Bank	5 billion	subordinated	7		10 million	Redeemable non-convertible unsecured subordinated
Islami Bank Bangladesh	7 billion	mudaraba subordinated	7		0.1 million	Fully redeemable non-convertible mudaraba subordinated
Social Islami Bank	5 billion	mudaraba subordinated	7	Six monthly Mudaraba Term Deposit Profit rate of SIBL + 2.00%	10 million	
Dutch-Bangla Bank	5 billion	subordinated	7			Private payment, unsecured, non-convertible, subordinated
One Bank	8 billion					
Al-Arafah Islami Bank	5 billion	mudaraba subordinated	7			Convertible, fully redeemable, floating rate, unsecured and unlisted

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Bank	Amount Raised (BDT)	Type	Tenure (Years)	Coupon Rate	Face value/ unit (BDT)	Additional info
City Bank	7 billion	subordinated			10 million	Float unsecured subordinated floating rate
Mercantile Bank	3 billion	subordinated	7		10 million	Float unsecured subordinated rate bonds
Rupali Bank	6 billion	subordinated	7		0.1 million	Float unsecured subordinated rate bonds
Prime Bank	7 billion	subordinated		Benchmark rate i.e. peer banks' most recent average FDR rate and 2% margin with a floor at 7% and capped at 10.5% p.a/semi annual		Non-convertible, non-listed and redeemable
Dhaka Bank	5 billion	subordinated	7		0.1 million	Float non-convertible floating rate
Jamuna Bank	5 billion	subordinated	7		10 million	Non-convertible coupon bearing
Southeast Bank	5 billion	subordinated	7			Non-Convertible
NCC Bank	4 billion	subordinated				
Total	96 billion					

Source: Vivid Economics, based on SEC, SDE and CSE reports

3 Green Bond market architecture

In this section, we describe the market architecture required for green bond market development and best practice international guidelines and standards. Section 3.1 sets out the requirements for developing a green bond market, following international experience of the common steps public and private sector actors take. Section 3.2 describes the guidelines and standards for green bonds, setting out the key features of the most relevant green bond frameworks, and the similarities and differences.

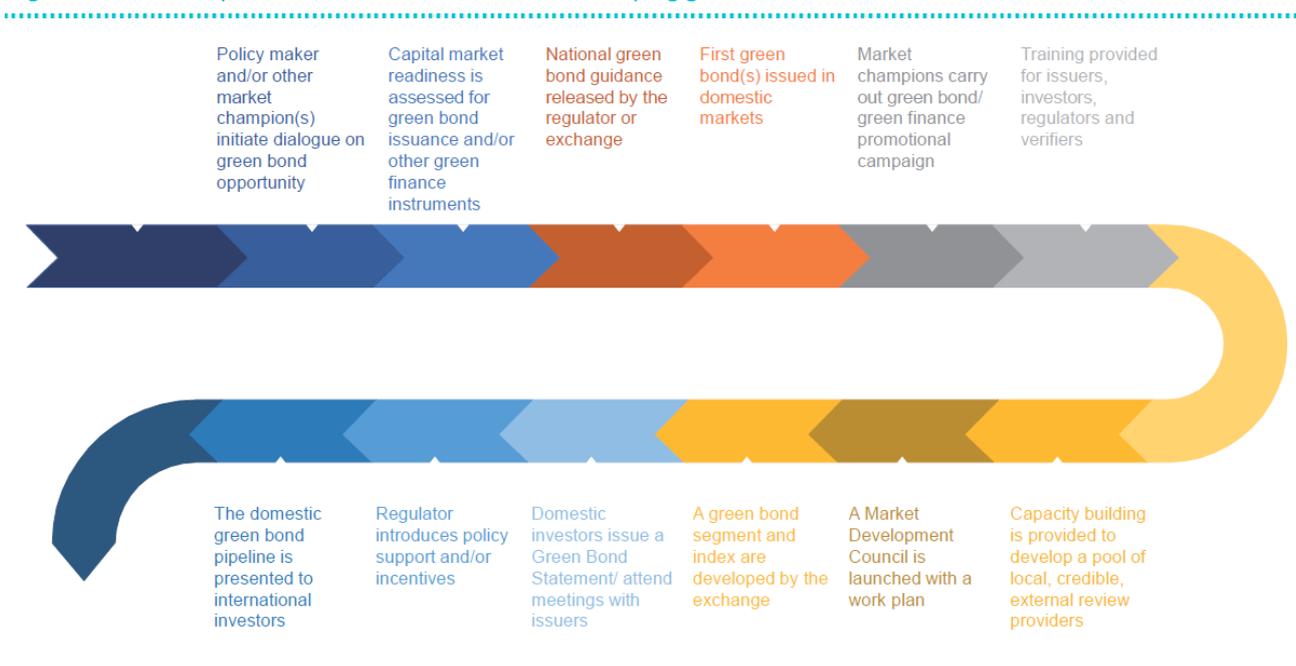
3.1 Developing a green bond market

Green bond market development requires translating national priorities into green finance frameworks, investor and issuer engagement, capacity-building among regulators and financial institutions, and often direct regulatory or financial incentives. Figure 5 sets out a roadmap with common milestones for developing green bond markets. A crucial first step to an effective market architecture is a clear translation of national priorities into a green finance framework, which determines (national) project selection criteria. This should contribute towards the country's NDC objectives, and ideally align with international guidelines.⁴⁹ This framework then informs investor and issuer engagement, raises awareness of green bonds and stimulates action. It may be that while markets are nascent, fiscal incentives or support is required to support the market as it grows. This could take the form of grants for external bond reviews, tax exemptions,⁵⁰ or training programs for investors, verifiers and regulators.

⁴⁹ SBN (2018), *Creating Green Bond Markets – Insights, Innovations, and Tools from Emerging Markets*

⁵⁰ Several countries have successfully included incentives into their green bonds frameworks. The Malaysia Sustainable and Responsible Investment (SRI) sukuk includes tax incentives as well as a grant scheme to support external review costs incurred by sukuk issuers. Singapore and Hong Kon introduced a 'Green Bond Grant Scheme' to cover the costs of external review, and China implemented a 40% discount on the interest rate of green bonds.

Figure 5 Roadmap with common milestones for developing green bond markets



Source: SBN (2018), *Creating Green Bond Markets – Insights, Innovations, and Tools from Emerging Markets*

3.2 Guidelines and standards for green bonds

A wide set of guidelines and standards for green bonds have been developed at international, regional, and national levels. The proceeds of issuance should be kept in a separate subaccount or appropriately tracked until they are spent, and environmental outcomes should be clearly reported. The CBI standard requires that green bond proceeds are allocated to the investments within 24 months of being issued, while the other frameworks give no time limit for spending the proceeds. All the frameworks recommend environmental reporting, ideally quantified, on the outcomes of the projects supported by the proceeds of the bond. **Table 5 presents the frameworks of most relevance to Bangladesh.** At the most fundamental level, guidelines differ in whether they establish a full set of rules and criteria defining exactly what standards green projects must meet, or whether they describe a process for disclosing how the bond proceeds will be spent but leave issuers discretion to define their own project standards.⁵¹ In general, green bond guidelines typically cover:

- **use of proceeds** – the issuer should declare the eligible green product categories upfront, providing clear environmental benefits;
- **process for project evaluation and selection** – the issuer should outline the process of selection and work to establish impact objectives;
- **management of proceeds** – funds should be segregated or otherwise tracked;
- **reporting** – issuers should report regularly on projects and where feasible, on the impact of the specific investment.

The ICMA Green Bond Principles and the Climate Bonds Standard are considered best practice guidelines that clarify the general approach for issuance of a green bond, while ASEAN and India guidelines reflect regional

⁵¹ Large international issuers like the World Bank and IFC have their own criteria or definitions of eligible green projects.

preferences. The ICMA and ASEAN frameworks were both developed by trade associations representing capital market participants from both buy and sell sides, with the ASEAN framework focusing on green bonds across ASEAN member countries only. CBI has also published sector-specific guidelines for seven sectors including water infrastructure, solar energy and low carbon buildings. At a national level, India issued a national standard.

Table 5 Key features of the most relevant green bond frameworks

	ICMA Green Bond Principles (GBP) 2018	Climate Bonds Standard v2.1	ASEAN Green Bond Standards	India Guidance for Green Debt Securities
Issuer of guidelines	ICMA	Climate Bonds Initiative (CBI)	ASEAN Capital Markets Forum	Securities and Exchange Board of India (SEBI)
Publishing date of last version	June 2018	Jan 2017, (3.0 in draft)	Nov 2017	May 2017
Instrument	Bond	Bonds, Loans and other Debt Instruments	Bonds	Debt security
Geographical focus	Global	Global	ASEAN countries	India
Environmental objectives	Mandatory disclosure on the environmental objectives of the Green Bond	Mandatory disclosure on the environmental objectives of the Bond	Mandatory disclosure on the environmental objectives of the Green Bond	Mandatory disclosure on the environmental objectives of the Green Bond
Use of proceeds	The GBP do not define what 'green' is, but suggests nine green project categories including renewable energy, biodiversity and ecosystem conservation and clean transport.	CBI provide green definitions (aligned with Paris Agreement), split into 8 broad categories set out in a Taxonomy . Sector specific standards are used for Certification and are developed with Technical Working Groups comprised of leading experts in the various fields. 95% of proceeds have to be spent on nominated projects.	Uses same list as Green Bond Principles but excludes fossil fuel power generation projects	8 named eligible project categories though SEBI retains discretion to specify others.
External review	The appointment of an external reviewer is voluntary	In order to receive the 'Climate Bonds Certified' stamp of approval, a prospective issuer of a Green or Climate Bond must appoint an 3 rd party Approved Verifier	In line with the GBP, the appointment of an external review is voluntary	In line with the GBP. The external reviewer must have relevant expertise in the area of review
Deadline for allocation of proceeds	No requirement	24 months after issuance	No requirement	No requirement
Change in nominated projects after issuance	No mention	Must be replaced like for like, or require new verification	No mention	No mention

	ICMA Green Bond Principles (GBP) 2018	Climate Bonds Standard v2.1	ASEAN Green Bond Standards	India Guidance for Green Debt Securities
Ongoing disclosure after issuance	Mandatory annual disclosure on allocation of proceeds and details of nominated projects, until full allocation of proceeds.	Within 24 months after issuance, Issuer must confirm Post Issuance Verification. Separate to that, there is mandatory annual disclosure on allocation of proceeds and details of nominated projects, until maturity of bond.	In addition to annual reporting, Issuers are encouraged to provide more frequent periodic reporting. Recommend this report is confirmed by external review.	Twice-yearly disclosure, verified by external auditor on allocation of proceeds, utilisation of the unallocated proceeds, and details of nominated projects, through term of bond.
Annual reporting on environmental impacts / outcomes	Issuer should disclose environmental impacts of projects. Where possible, use quantitative metrics. ICMA has suggested guidelines.	Mandatory reporting of environmental impacts. Where possible, use quantitative metrics. Disclose methodology behind the metrics.	Mandatory reporting of environmental impacts, with quantitative measures where possible	Mandatory reporting of environmental impacts, with quantitative measures where possible

Source: Vivid Economics & Climate Bond Initiative, based on [ICMA](#), [CBI](#), [ACMF](#), [Government of India](#)

Verification of any green bond issuance is important in ensuring that the issuance meets international standards and can build trust in the market. While any bond may be ‘labelled’ or described as ‘green’ by its issuer, the long-term development of a successful market will depend on the development of trust in the quality of the issuance, especially among the investor base. The international standards all include an external review pre-issuance, using independent verifiers to check and report on the planned project selection process, and plans for management of proceeds and annual reporting. The frameworks vary in the items the issuer is expected to disclose and the verifier to check upon, for instance, the proportion of money used for financing or refinancing; regular disclosures (after issuance) of how the proceeds are spent; and the environmental reporting of the impacts of the issuance.

Certification provides investors with immediate and credible assurance that the green bond achieves an internationally recognised standard. Many green bonds are also issued without formal certification, yet the proceeds are spent on high quality renewable projects, for example. However, without certification, the investor will need to undertake a degree of research on the bond to ensure that the proceeds are being spent on acceptable purposes.

If aiming for a certified green bond achieving internationally recognised standards, it is important to engage a verifier before issuing the bond. Figure 6 sets out the CBI Standard’s five step certification process, which includes:

- **Preparation of the bond.** In the first instance, the issuer will need to determine how it will use the proceeds of the bond issuance. In particular, what ‘green’ assets will be the bond be used to finance or refinance. For certification and verification, these will need to conform to defined sector standards (for example for renewable energy, green buildings etc.) The issuer may also prepare a Green bond framework which explains to investors how the proceeds will be spent and how the bond aligns with the issuer’s business strategy.
- **Engaging a verifier:** The issuer will engage an approved verifier that is familiar with the green bond concept and standards, the process of bond issuance, and of implementation of green projects and achievement of the environmental outcomes targeted by the investment.

- **Certification of the bond:** The green bond will be certified prior to being issued, which means the bond can be marketed to investors as meeting the certification standards.
- **Verifying the bond post-issuance:** After the bond has been issued and the bond proceeds are allocated to the underlying assets, the issuer needs to update information on the bond to clearly highlight and agree any variance to the use of proceeds after the bond issuance. The external verifier confirms that the management and allocation of proceeds continue to meet the certification requirements.
- **Ongoing reporting on environmental outcomes.** The issuer should provide annual reports to the Climate Bonds Secretariat throughout the term of the bond, and ideally publish these. The purpose of these short reports is to provide transparent confirmation and communication that the bond continues to meet the standards and should include some environmental impact indicators.

Figure 6 Climate Bonds Certification process

Climate Bonds Certification: Explained in 5 Steps



Source: Climate Bonds Initiative

Green bonds can also be 'verified' without using the CBI certification framework. These have two key differences to using the CBI framework:

- **Pre-issuance:** 'Verification' does not imply the use of an externally defined standard (such as CBI's). This means the pre-issuance second-party opinion simply checks that the issuer's framework complies with a chosen set of green bond principles (such as ICMA's). This is usually a *process* check, ensuring there is (i) an explanation of the sorts of environmental projects to be financed, (ii) a process for project selection, and (iii) a process for how monies will be handled. Because there is no external standard, issuers define their own criteria for what classifies as a 'green' project. This issuers framework may include proposals which prove controversial to international investors. For example, in many emerging markets, issuers may deem building a gas-fired power station as eligible for green financing, as it represents a significant improvement over current practice.
- **Post-issuance:** Non-CBI frameworks do not explicitly require an external party to review the bond *post-issuance* to ensure the proceeds from the bond have been spent as proposed in the issuer's

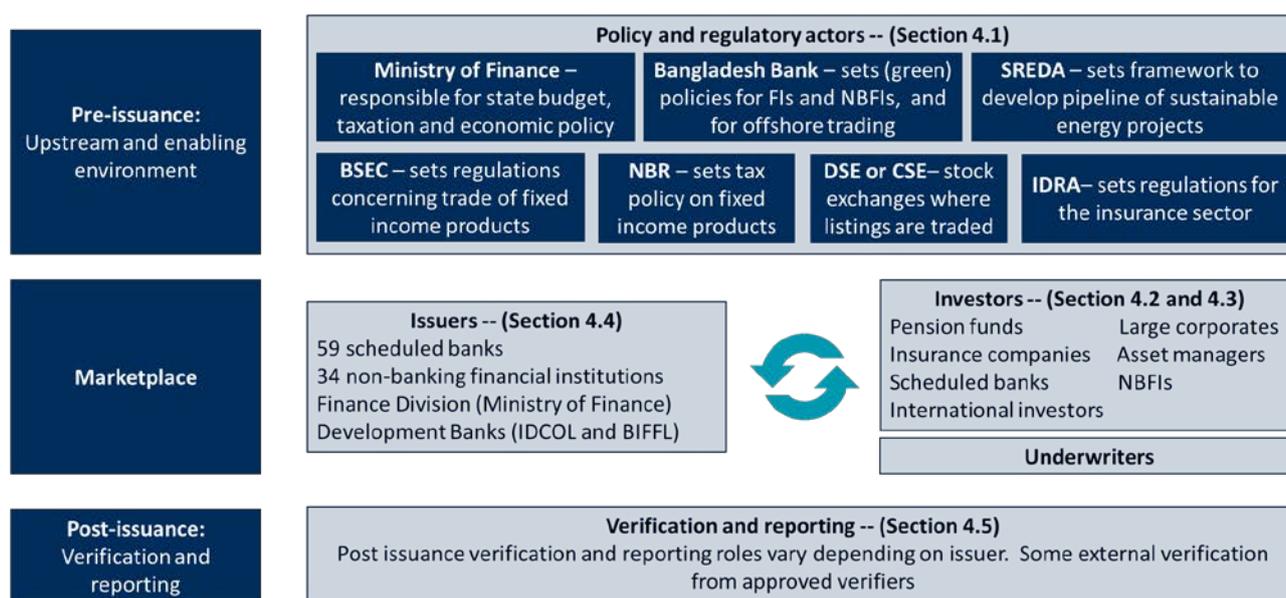
plan. That said, this is recommended among most frameworks. This may be done as part of the annual review.

4 Mapping of key stakeholders in Bangladesh

In this section, we map the key stakeholders involved in the development of Bangladesh’s green bond market. Section 4.1 examines policy and regulatory actors, Section 4.2 examines domestic investors, Section 4.3 international investors, Section 4.4 issuers and Section 4.1 assesses which firms are best placed to deliver verification services for a domestic issuer.

Successfully issuing and placing a green bond requires a number of key stakeholders before issuance, to make the transaction, and after the issuance. Figure 7 summarizes the key players in each stage of issuance, and the following sections describe the key roles they play and specific institutions in more detail.

Figure 7. Market development requires a range of stakeholders work together



Source: Vivid Economics

4.1 Policy and regulatory actors

Seven policy and regulatory actors play a key role in driving the green bond market: the Ministry of Finance, Bangladesh Bank, SREDA, the Bangladesh Securities and Exchange Commission (BSEC), the Insurance Development and Regulatory Authority (IDRA), the National Board of Revenue and the Dhaka and Chittagong Stock Exchanges.

The Ministry of Finance is responsible for state finance, including the state budget, taxation and economic policy. It contains the Finance Division, Economic Relations Division, Internal Resources Division and Bank and Financial Institutions Division. The Ministry of Finance is responsible for general financial policy including the National Savings Certificates scheme, and incorporates the stock exchanges, Bangladesh Bank, the Bangladesh Securities and Exchange Commission and the National Board of Revenue. The Ministry of Finance would also be the decision maker on a possible sovereign bond issuance. Although the concept of a sovereign green bond is relatively new to them, they have indicated they would be interested to explore this.

They are currently working on Sukuk issuance, which could potentially include a Green Sukuk as part of the ongoing project.

Bangladesh Bank sets regulations for banking and non-banking financial institutions and has a key role to play in working with investors and issuers. Bangladesh Bank has a track record in green financing, for instance, through a revolving financing scheme for environmentally friendly products and initiatives (2009) and the launch of a USD 200m Green Transformation Fund (2016), which invests in energy efficient and green capital facilities, mainly in the RMG, leather and jute industry. This fund has already invested USD 0.13 million, with another USD 50 million available. In 2016, Bangladesh Bank has set a requirement for Financial Institutions (FI) in Bangladesh to allocate 5% of the total funded loan disbursement/investment to green products.

Several departments within Bangladesh Bank have relevance to bond issuances:

- **Sustainable Finance Department** – formulates policies on green banking and CSR activities of banks and FIs and is responsible for the BDT 2 billion Refinance Scheme for renewable energy and green products. This scheme offers 52 products in 8 categories that currently qualify as ‘green’ finance. They typically offer commercial banks the chance to refinance eligible loans, at the bank rate of 5%, plus up to 4 percentage points. Among the 59 commercial banks, 38 have a participation agreement and can claim refinance from Bangladesh Bank. 9 Islamic banks have access to the refinancing schemes through Sharia loans. Furthermore, the Sustainable Finance Department is responsible for managing the USD 50 million ADB-supported Refinance Scheme for Brick Kiln Efficiency Improvement.
- **Banking Regulation and Policy Department** – is responsible for regulations and guidelines to ensure a stable banking system and formulates guidelines for green banking and donor-supported sector-specific transformational projects.
- **Foreign Exchange Policy Department** – is responsible for formulating and implementing policies related to foreign exchange.
- **Department of Off-Site Supervision** – oversees individual banks on the basis of various returns/financial statements and ensures banking discipline as well as depositor's interest and confidence in the banking system.
- **Department of Financial Institutions and Markets** – regulates and supervises the Non-Bank Financial Institutions (NBFIs) of Bangladesh. NBFIs are licensed under the Financial Institution Act (1993) and the Financial Institution Regulation (1994).
- **Debt Management Department** – acts as the Debt Manager of the GoB in consultation with the Ministry of Finance. This department would likely administer and manage a possible sovereign green bond.

The Sustainable and Renewable Energy Development Authority (SREDA) is the key driver of ‘green’ energy, energy efficiency, and transport markets in Bangladesh. It supports the policy making process for grid-tied and off-grid energy investment, including coordination and promotion, to assist the GoB in policy framing and attracting private investor interest. It also has a mandate to research and pilot new technologies in renewable energy and energy efficiency. SREDA is critical to the implementation of Bangladesh’s NDC, which has a target to achieve 10% renewable energy of total installed generating capacity by 2021. It has also developed the energy efficiency and conservation masterplan to 2030, and administered the USD 100 million JICA credit line for the ‘Energy Efficiency and Conservation Promotion Financing Project’ (EECPF).

The Bangladesh Securities and Exchange Commission (BSEC) sets regulations concerning the trading of fixed income products. It regulates the capital market through enactment of the Securities and Exchange Commission Act 1993. The BSEC has set rules for asset-backed securities (2008), issue of capital (2011), private placement and debt securities regulations (2012) and public issue rules (2015). To date, no one has applied for consent to issue a green bond, and there is no specific framework for green bonds in place, but this could be set up under the above rules. In addition, the BSEC has separate regulations for intermediaries, with an approved list of merchant bankers, credit rating agencies, asset management companies, trustees and fund managers who are eligible to provide various services with respect to the capital market.

The National Board of Revenue (NBR) and the Dhaka and Chittagong Stock Exchanges also have important roles to play in facilitating development of the green bond market. In particular, the NBR sets tax policy on fixed income products. Publicly listed bond issuances would be placed on the Dhaka or Chittagong stock exchanges, which have their own rules around issuance, and charge a transaction fee of typically 0.05%.

The Insurance Development and Regulatory Authority (IDRA) regulates the insurance sector in Bangladesh, and sets insurance companies’ investment regulations. Since the Insurance Act 2010 and IDRA Act 2010 were passed, IDRA protects the interests of insurance policy holders and beneficiaries by reducing business risks and harmonizing local and international insurance laws. As such, it is responsible for ensuring the stability of the insurance sector, and can determine insurers’ investment regulations.

In addition to the actors listed above, two DFI-sponsored programs of work aim to improve broad capital market conditions in Bangladesh:

- The Joint Capital Market (JCAP) development program of the World Bank Group, which operates in a number of emerging markets including Bangladesh. The JCAP program was launched to support the development of liquid, diverse and well-regulated local capital markets, contributing directly to faster and more sustainable economic growth.
- The Financial Sector Assessment Program (FSAP), a joint program of the International Monetary Fund and the World Bank. The program brings together Bank and Fund expertise to help countries reduce the likelihood and severity of financial sector crises, providing a comprehensive framework through which assessors and authorities in participating countries can identify financial system vulnerabilities and develop appropriate policy responses. For Bangladesh, the FSAP includes one module on the climate-change-related risks and opportunities to the financial sector.

4.2 Domestic investors

There are a range of domestic institutions that could form an important investor base for a green bond issuance in Bangladesh. Table 6 provides an overview of the 11 domestic investors engaged with or analyzed through the scoping study. In general, we would anticipate that investors with higher assets under management and a higher share in fixed income, would be more likely to invest in a green bond.

Table 6 Potential domestic investors

Investor	Investor type	Size (AuM)	Fixed income (share of AuM)	Sector / asset class focus	Source (data / qualitative)
Akij Group	Corporate	NA	NA	Islamic Securities	Industry interviews
AK Khan Group	Corporate	NA	NA	General	Industry interviews

Green Bonds Development in Bangladesh - A Market Landscape

Investor	Investor type	Size (AuM)	Fixed income (share of AuM)	Sector / asset class focus	Source (data / qualitative)
Grameen Telecom Trust	Corporate	NA	NA	General	Industry interviews
Square Pharmaceuticals	Corporate	BDT 70bn	42%*	General	Quarterly Financial Statements
Metlife	Life Insurance	NA	NA		
Green Delta Insurance Company	General Insurance	BDT 10bn	NA		Annual Report
LR Global AMC	Asset management company	BDT 10bn	>20%	General	Website
VIPB AMC	Asset management company	BDT 4bn	<5%	General	Website
LankaBangla Finance	Asset management company	BDT 144 billion		General	2018 Annual Report
The City Bank	Bank	BDT 330bn	7%	Government Bonds	2018 Annual Report
BRAC Bank	Bank	BDT 360bn	8%	Government Bonds	2018 Annual Report

Notes: AuM = Assets under Management. *This includes all cash and cash equivalents including Fixed Deposits with banks

Source: Vivid Economics

Domestic investors may be more willing to invest than international investors for two reasons. First, they routinely operate in the market so have better access to information and are experienced in managing local portfolio risks. Second, they operate in the same currency and so do not face currency risk from investing in a local currency bond.

Understanding each institutions' financing structure is critical to gauge their willingness and capacity to invest in a green bond. For example, corporates typically invest off their balance sheet and hence, have more flexibility to pursue high risk investments or alternative assets. Asset managers often have communicated a long-term investment strategy to their investor base and are bound to pursue this in the short term, making significant deviations challenging. Banks, insurance companies and pension funds must protect their deposits and are often subject to strict risk-adjusted capital requirements causing them to favor lower risk assets. Each of these elements has a bearing on whether an institution chooses to, or is even able to, invest in a green bond.

Based on the criteria in Table 6, local commercial banks have high potential to invest in green bonds. Two major banks have high assets under management, an order of magnitude higher than other domestic investors. Fixed income assets, cash and cash equivalents account for a significant share of these institutions' portfolios and both explicitly state a focus on government bonds within their investment strategies. In addition to those in the table, a number of other banks have expressed a particular interest in accessing green bond products and highlighted the attractiveness of a sovereign green bond.

Existing regulation could guarantee a base level of demand from commercial banks. Two important regulations place requirements on local commercial banks' asset portfolios:

- Since January 2016, banks and financial institutions in Bangladesh must allocate 5% of incremental loans to 'green finance'. If green bond subscriptions can be considered eligible against this requirement, then local commercial banks could invest in bonds directly as opposed to identifying projects themselves. There are 59 commercial banks and 34 non-bank finance companies subject to this regulation, providing a healthy potential investor base.
- Commercial banks must keep 13% of their deposits in securities such as government bonds to meet the statutory liquidity requirement. Again, if green bond debt could be considered against this requirement, it could guarantee investor demand.

Three asset management companies also have relatively high potential to invest in a green bond. Considering there are relatively few opportunities to invest in fixed income assets in Bangladesh as the bond market is still nascent, this could suggest there is suppressed demand from these asset managers. When it comes to green investments, asset managers indicate they need to be assured that there are not only project opportunities of a sufficient scale but also that issuers can manage loan portfolios of this size. The IDCOL solar home system program faced a high level of defaults at scale up. It has been suggested this was due to a lack of human capacity to undertake proper due diligence at this scale. Some asset managers (and likely other non-banking financial institutions) would be interested in a sovereign green bond, and perhaps also a green bond issued by a state-owned entity.

Local cash rich corporates also invest in corporate bonds. If green bonds offer risk-adjusted returns that are competitive with existing corporate bonds, corporates are likely to consider investing in them as an alternative. Depending on the issuer's credit rating, this may require third party credit enhancement to reduce default risk.

4.3 International investors

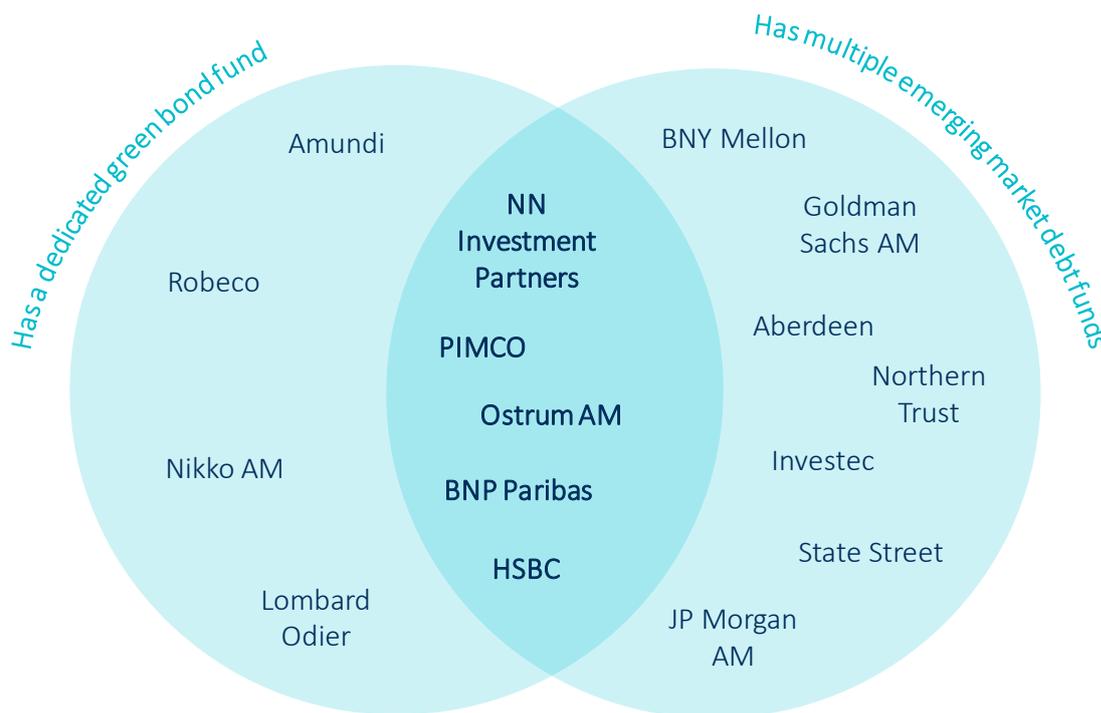
The most promising international investors will have both a sizeable emerging market portfolio and a clear interest in green bonds. To date, green bond issuance in developed markets has outstripped that in emerging markets. Mirroring this, the investor pool for developed market green bonds is far deeper than that for the emerging market. A potential investor for a green bond in Bangladesh must not only have a strong ESG interest but also be comfortable assessing and managing the risk associated with emerging market debt. To gauge potential among private investors, we develop two simple tests:

1. Does the institution have a dedicated green bond fund?
2. Does the institution have multiple emerging market debt funds?

Based on these criteria, we identify five private investors with particularly high potential. Figure 8 categorizes a selection of private international investors into those who meet the first criteria, those who meet the second, and those who meet both. Among those who meet both are three large institutional investors with long-standing track records in emerging market debt: PIMCO, BNP Paribas and HSBC. HSBC and IFC have recently launched the Real Economy Green Investment Opportunity Fund (REGIO), which focusses

exclusively on green bond issuances from non-financial corporates in emerging markets.⁵² There are also two specialist asset managers: NN Investment Partners, the stand-alone asset manager of the Dutch Insurance Company NN Group; and Ostrum Asset Management, a France-based subsidiary of the BPCE Banking Group. Both have a distinct focus on long term sustainability and are signatories to the UN Principles of Responsible Investment (PRI). These five investors are prioritized as having the highest potential to invest in a green bond in Bangladesh because they have significant current exposure in both green bonds and emerging market debt.

Figure 8 Only a few leading investors in emerging market debt are also active in green bond markets



Note: AM = asset management

Source: Vivid Economics, based on corporate websites; Morning Star; IPE; mutualfunds.com

Additionally, we identified four investors with dedicated green bond funds who also have high investment potential. Amundi, Robeco, Nikko Asset Management and Lombard Odier are all specialist asset managers, that typically manage a number of funds with a clear ESG focus. In 2018, IFC and Amundi successfully closed the first round of fundraising for the Amundi Planet Emerging Green One (EGO) Fund, the world’s largest green bond fund focused on emerging markets.⁵³ The fund closed at USD 1.4 billion and is expected to deploy over USD 2 billion in its lifetime. It seeks to balance development impact and profitability across their investment portfolio, enabling it to buy bonds with an average rating of BB+. All four asset managers mentioned above manage emerging market debt funds, though not of the scale seen among the highest priority institutions. Nonetheless, they still have a relatively high potential to invest in a green bond in Bangladesh.

⁵² IFC (2019), IFC, HSBC Create First Green Bond Fund Focused on “Real Economy” Issuers in Emerging Markets

⁵³ Amundi (2018), IFC and Amundi successfully close world’s largest green bond fund

Funds with impact objectives like the IFC/Amundi EGO fund also often use complementary tools to crowd in private sector financing that would otherwise not be available to projects with high expected development impact. IFC uses blended finance to support high impact transformative projects in sectors or countries that are initially unable to attract commercial finance but have the potential to become commercially viable over time. This is particularly the case for climate change, agribusiness, food security, and finance for small and medium enterprises, including women entrepreneurs.

A number of leading investors in emerging market debt are yet to explicitly integrate green bonds into their investment strategies. These include well-known institutional investors such as BNY Mellon, Goldman Sachs Asset Management, State Street and JP Morgan Asset Management. Many have underwritten green bonds in the past or hold some green bond debt within their current portfolios, but to date, have not established dedicated green bond funds. JP Morgan Asset Management manages an ESG-focused fund which aims to overweight green bonds in its portfolio but there are not strict rules as to how this is applied. While these large investors are comfortable working in emerging markets, we anticipate that they are unlikely to actively pursue emerging market green bonds in the near term.

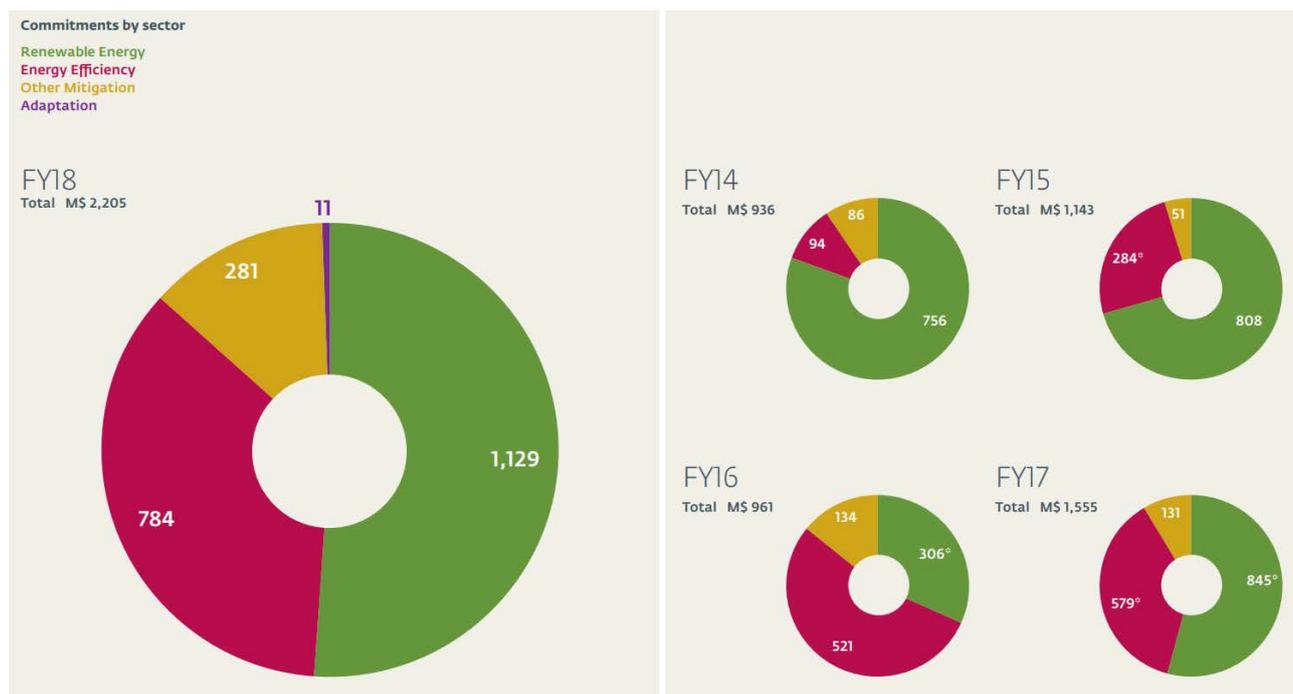
In addition to the private investors discussed above, a number of development finance institutions (DFIs) have the potential to invest in a green bond in Bangladesh. Most notably, both the Asian Development Bank (ADB) and CDC Group explicitly target the region within their investment mandates. Moreover, both institutions are looking to increasingly shift their portfolio towards climate-smart investments within the next decade.

The World Bank and the International Finance Corporation (IFC) are also promising potential investors, as one of the world's largest financiers of climate-smart projects in developing countries and having invested in green bond issuances in similar markets in the past. As mentioned above, IFC has now launched two emerging market green bond funds, with Amundi and HSBC respectively. IFC is also an active issuer. As of June 2018, IFC's Green Bond Program had issued USD 7.6 billion across 111 bonds in 13 currencies.⁵⁴ In 2018 alone, it issued 32 green bonds, totaling USD 1.8 billion, an IFC all-time record of green bond issuance.⁵⁵ By virtue of IFC's mandate to generate positive development impact in emerging markets, their risk appetite tends to be larger than that of other international investors. Over the past few years, IFC's green bond commitments (green bond proceeds committed to eligible projects) have diversified away from renewable energy (Figure 9). Emerging sectors include green buildings, climate-smart cities and green finance.

⁵⁴ [IFC \(2019\), Green Bonds](#)

⁵⁵ [IFC \(2019\), Green Bond Impact Report: Financial Year 2018](#)

Figure 9 Over the years, IFC has diversified its green bond commitments

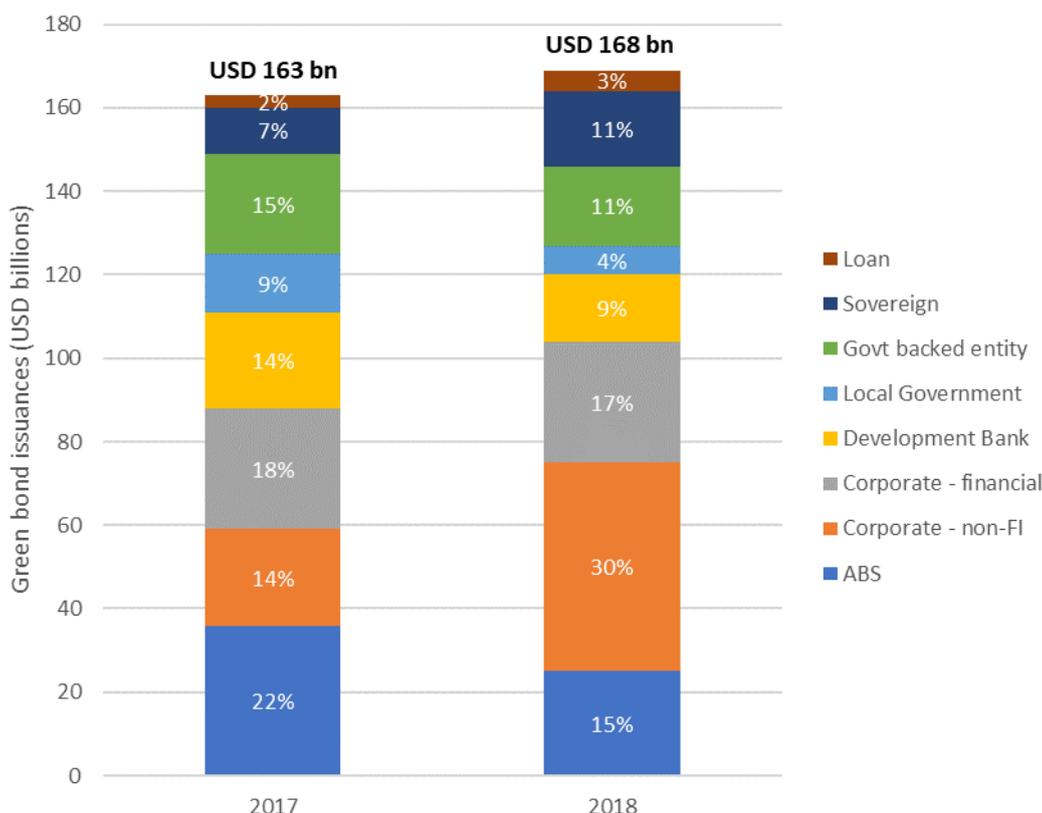


Source: IFC (2019), *Green Bond Impact Report: Financial Year 2018*

4.4 Issuers

A green bond can be issued by a range of organizations, from development banks, to central or municipal government agencies, to banks and financial institutions, to corporates. Globally, the distribution of issuances across different types of entities is relatively equal. Figure 10 indicates that in 2018, non-financial corporates overtook as the largest issuer category by a significant margin. Financial corporates issued the second highest value of green bond debt, closely followed by asset-based securities (ABS).

Figure 10 In 2018, non-financial corporates became the largest issuer category



Note: Loans are a type of green bond for which the proceeds raised by bond sale are earmarked for eligible projects or secured on eligible assets. Examples are MEP Werke, Ivanhoe Cambridge or Natixis Assurances. ABS or securitisation bonds are bonds for which the refinance portfolios of green projects or proceeds are earmarked for green projects. Examples are Tesla Energy (backed by residential solar leases) or Obvion (backed by green mortgages).

Source: Vivid Economics, based on CBI (2019), *2018 Green Bond Market Summary*

In Bangladesh, where the fixed income market is still at an early stage of development, the number of potential issuers is relatively limited. The potential range of issuers includes:⁵⁶

- 59 scheduled banks.
 - ◇ The scheduled banks best positioned to issue green bonds all have experience in green financing, particularly lending to the buildings and energy sectors, and a number have already issued commercial or subordinated bonds.
- 34 non-banking financial institutions.
 - ◇ The non-banking financial institutions have a range of experiences with green sectors and fixed-income products – the most likely institutions possess experience in financing buildings and energy, and have issued a number of bonds over the past decade.

⁵⁶ Specific or potentially sensitive information on potential issuing institutions has been removed from the public version of this report.

- **2 state-owned financial institutions** (included in the 34 NBFIs), which have a mandate to invest in sustainable infrastructure.
 - ◇ One state-owned financial institution already has nascent experience in issuing bonds.
- **Sovereign** – the GoB regularly issues T-bonds and T-bills, through the Finance Division.
- **Corporates** – there are a number of large non-financial corporates which could issue a green bond.
 - ◇ However, most of these corporates have good liquidity and are more likely to be looking for investment opportunities than another way to raise capital. There have also been instances of default on corporate issued bonds in the past, which has made it harder for non-financial corporates to place bonds in the domestic market.

4.5 Verification agencies and capacity

There are 38 approved certifiers of the CBI standards. These are typically large audit companies with an international and cross-sector presence.⁵⁷ However, this list also includes organisations with a presence in a single country or region, and/or covering a limited number of sectors. There is no reason to believe that if demand for green bond related businesses services developed that local capability would not grow to meet the demand.

From the current list of approved certifiers, many are global and have operations in Bangladesh. These include:

- KPMG, which has a well-established office in Dhaka, and has worked on green bond issuances in neighbouring India through their office in Mumbai;
- PWC has a long-running presence in Bangladesh;
- Deloitte has an office in Dhaka, but appears to be a more recent entrant in this market through acquisition of BDO. BDO India is experienced in wind and solar project development.

The main capability requirements of a verifier fall under four categories:

- **Green bond overarching principles.** Knowledge of and training in relevant green bond principles and standards (as described in the sections above).
- **Technical sector expertise.** Technical knowledge of and experience in the topic area the bond is being issued in – both the sector and the environmental objectives sought.
- **Capital markets.** In-depth understanding of debt capital markets, for example working with clients in the Treasury departments of firms or banks to demonstrate knowledge of debt capital markets.
- **Assurance international standards and certification.** Conformance with assurance standards as laid out in International Standards on Assurance Engagements ISAE 3000.

Currently, domestic issuers must look to international firms for verification services. Bangladeshi business advisory firms do not presently supply this service. An issuer could either approach the local (domestic) branch of an international company that provides such services elsewhere, or it could direct contract with an

⁵⁷ Full list available at [Climate Bonds Initiative – Approved Verifiers under the Climate Bonds Standard](#)

overseas verifier. The choice between the two would depend on the subject matter expertise needed for the bond issuance and the existing relationship between the issuer and the business advisory firm.

India has the most developed neighbouring verification market. Indian entities have issued 30 green bonds and over 70% have third party verification. We focus on two India-based advisory firms, KPMG and Emergent Ventures India (EVI), and assess their capabilities and appetite to provide verification services in Bangladesh. Both have certified bonds in India to Climate Bond Initiative's (CBI) international standard.

Arrangements can be made to deliver verification services through KPMG Bangladesh office drawing on expertise from New Delhi as necessary. KPMG have verified around 30 green bonds globally, 10 of which were in India including early public sector issuers like the public bank IDBI. KPMG has trained staff globally on verification work and the team based in New Delhi are able to support the Bangladesh office.

EVI does not have a physical presence in Bangladesh but can provide verification services from overseas. EVI is a smaller, more specialist firm with expertise in project finance, bond issuance and structured finance. It has verified six Indian green bonds including one by the repeat issuer IREDA. It has previously undertaken non-green bond work in Bangladesh through local partners.

Both firms have similar sectoral expertise and follow international professional standards. KPMG India and EVI have strong experience in renewable energy through previous work for the Clean Development Mechanism (CDM), verifying emissions reduction estimates from mitigation projects. EVI has also worked on the USAID Partnership to Advance Clean Energy-Deployment (PACE-D) programme between the United States and India. In addition to energy, both firms also have experience of verification across sustainable agriculture. Both follow protocols as per the International Standards on Assurance Engagements (ISAE) 3000.

5 Market barriers

In this section, we set out the key market barriers preventing each stakeholder group from participating in Bangladesh's green bond market, drawing heavily from a series of structured interviews.

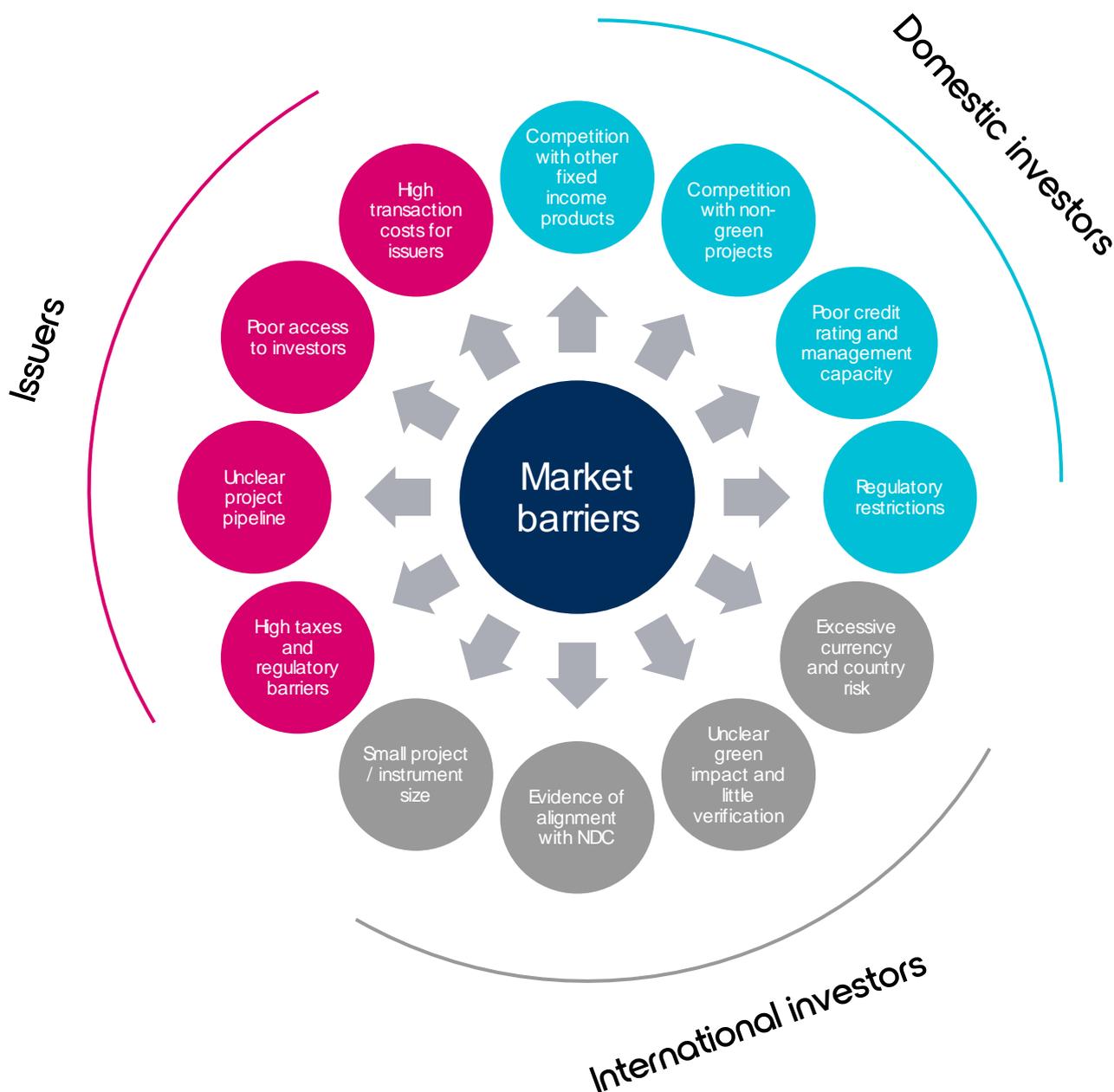
Domestic investors expressed a clear demand for a well-functioning fixed income market and welcomed the role green bonds could play in this. Scheduled banks and non-banking financial institutions are looking to expand their fixed income portfolios but find this difficult. Currently available mutual funds are heavily weighted towards domestic equity. While currently, there is not a clear domestic demand for green bonds or ESG-products, domestic investors recognise the potential of green bonds to catalyse broader capital market development.

Both financial institutions and non-financial corporates want to improve access to long term debt instruments. All issuers interviewed for this work communicated a need for longer term debt instruments. This was particularly the case for scheduled banks to match their assets and liabilities. To sustain healthy economic growth and employment generation, private long-term investment needs to be enhanced. Long-term debt instruments are crucial for this and will be needed to address the important infrastructure investment gaps discussed earlier in Section 2.2.

Issuers indicate that the greatest potential project pipeline lies within the energy and buildings sectors, where a number of green shoots aligned with Bangladesh's NDC already exist. There are also some positive signs in energy efficient brick kilns, most notably through the USD 50 million ADB-supported Refinance Scheme for Brick Kiln Efficiency Improvement, managed by Bangladesh Bank.

However, investors and issuers alike face a number of key barriers to investing in and issuing a green bond respectively, summarized in Figure 11 below. These barriers cover a wide range of concerns including the attractiveness of a green bond instrument relative to other financial products, the availability and quality of the underlying project portfolio and the capacity of service providers in the domestic market to deliver a successful issuance. Sections 5.1, 5.2 and 5.3 take domestic investors, international investors and issuers in turn, and discuss the barriers they face in more detail.

Figure 11 Through structured interviews, we identified 12 barriers to green bond market development



Source: Vivid Economics

5.1 Domestic investors

Competition with other fixed income products

Bonds face fierce competition from alternative fixed income products such as National Savings Certificates (NSCs) which are high turn, low risk, liquid assets. The NSC scheme offers a competitive interest rate (11-12% nominal rates) and allows early encashment at any moment without penalty. While the product is only available to individuals and not corporates or financial institutions, in practice, the boundaries of ownership

are blurred. The (uncapped) availability of NSCs has reduced liquidity in the market, especially for banks. Private bonds also compete with government issued fixed income products such as Treasury Bills. This has led to an artificially high rate of return offered on fixed deposits with banks. As a result, domestic investors have several options for safe yet high returns and there is little benefit in holding bonds in their portfolios.

The lack of a secondary bond market compounds this issue, making bonds illiquid and therefore less attractive relative to fixed deposits or NSCs. Potential domestic investors like banks, asset managers and insurance companies all indicate that the lack of opportunity to sell bonds on is a major barrier. Often subscribers find they are forced to hold bonds to maturity due to a lack of secondary investors.

Limited activity in the market to date has focused on subordinated or zero-coupon bonds as they offer a distinct financial advantage for investors, which green bonds do not currently enjoy. As subordinated bonds are inherently riskier, issuers tend to offer relatively high coupon rates. Any income derived from zero-coupon bonds is tax free for individuals and corporates, if the zero-coupon bond is approved by BSEC or Bangladesh Bank.⁵⁸

Competition with non-green projects

Although some domestic investors have an increasing green focus, there is little demand for green or ESG products from investors' client base. Clients investing in mutual funds or other investment products are not demanding an increasing exposure to ESG or green products within investment portfolios. Furthermore, very few institutions reported this as something their shareholders or executive committee are actively looking to pursue. That said, many domestic investors, especially asset management companies, have developed ESG- or green-focussed teams within their company. This is mainly in reaction to Bangladesh Bank regulatory reforms, in particular, the requirement for Financial Institutions (FI) in Bangladesh to allocate 5% of the total funded loan disbursement/investment to green products. This demonstrates that regulators have the potential to kickstart the market for ESG or green products. Although most investors recognise their clients and shareholders are mostly concerned about risk and return, some of the more global companies like Metlife American Life Insurance Company see potential in increasing awareness and demand for ESG products with the right communication and marketing strategy.

Even for those investors that have developed capacity to identify and evaluate green investment opportunities, the pipeline of commercially viable opportunities is unclear. Domestic investors remain unconvinced that there is a sufficiently large potential pool of commercially viable green investment opportunities. For this to change, investors need more clarity on the availability of a viable project pipeline and importantly, good examples of successful investments. Given the nascency of this market, investors will be looking closely at first-of-a-kind projects such as the Teknaf solar power plant, the first major 'green' project in Bangladesh, that began commercial operations end of 2018.⁵⁹ Many domestic investors expect DFIs or the Government of Bangladesh to act as a market maker through early demonstration investments, such as ADB's role in the proposed 35 MW Spectra Solar Park transaction.⁶⁰

Green investments are struggling to compete financially with non-green (conventional) investment opportunities which receive fiscal benefits. There are few fiscal incentives to invest in green projects relative to traditional energy and infrastructure projects, which currently receive fiscal benefits such as a 15-year tax

⁵⁸ This does not apply to banks, insurance companies or financial institutions. GuarantCo (2019), *Study of Bangladesh Bond Market*

⁵⁹ Stakeholder interviews; [Bangladesh News \(2018\), Bangladesh's largest solar power plant begins commercial operations](#)

⁶⁰ [ADB \(2019\), Bangladesh: Spectra Solar Power Project](#)

window.⁶¹ Moreover, as green projects work with newer technologies, production methods and business models, investors demand a risk premium. Both these factors make it harder for green investment projects (whether aggregated into a bond structure or not) to compete for scarce capital in the market. Domestic investors commented that green financing requires some form of preferential rate to compensate for the lack of tax incentives on investor earnings. Alternatively, tax incentives could focus on the issuer side improving underlying project economics. For example, during the interviews it was mentioned that if renewable energy projects received the same kind of fiscal support as conventional power (i.e. power purchase agreements), they would have a compelling investment case.

Due to a shortage of Islamic financing products, a green sukuk could be an attractive option for domestic investors that need to invest in Islamic funds. One financial institution indicated that it has between USD 10 million and USD 20 million from policy holders that it needs to invest in Islamic funds, with limited options to do so. In Indonesia, the Finance Ministry successfully placed USD 1.25 bn of green sukuk bond debt, attracting both Islamic and green investors.⁶²

Poor creditworthiness assessment and management capacity

A systemic lack of trust in local auditors and rating agencies makes it difficult and expensive to obtain sound financial information. Although some local rating agencies exist, the domestic investor community views their practices as opaque and low quality. In light of this, many financial institutions revert to financial audit information to undertake their due diligence. Even here however, a handful of investors choose to undertake their own data collection and audit efforts due to a lack of trust in the local audit industry. Overall, this greatly increases the cost of due diligence for potential investors, both in monetary terms as well as time.

This is exacerbated by the need for issuers to adjust management and reporting processes to meet the requirements of a green bond. Though reporting standards have improved (for instance, Bangladesh Financial Reporting Standards are virtually at par with International Financial Reporting Standards), there is still a lack of confidence in the transparency and in information coming from the issuers.⁶³ Apart from requiring a good credit standing of the issuer, the company's due diligence must be very strong in order for them to adequately separate, manage and report on the proceeds of the green bond. As this is quite a hefty task from a managerial and operational perspective, investors are hesitant to trust in issuers' ability to handle this.

Given this, domestic investors are looking for products with some form of sovereign- or DFI-backing. This would simultaneously tackle a lot of the above issues as there would be no issue in terms of credit worthiness and there would be a proven capacity or at least help to manage the finances. Furthermore, a sovereign-backed bond would be a crucial component of many investors' portfolios.

Regulatory restrictions

The Insurance Development and Regulatory Authority (IDRA) does not currently allow insurance companies to invest in non-government bonds. Insurance companies can invest in bank deposits, government bonds and bills but not in non-government bonds. In general, insurance companies need a steer from the IDRA to invest in any bond that is not guaranteed by a bank, and there is an incentive to invest in riskier assets like shares

⁶¹ GuarantCo (2019), *Study of Bangladesh Bond Market*; Stakeholder interviews

⁶² [Climate Bonds Initiative \(2017\), Sovereign Green Bonds Briefing](#). Led by the Finance Ministry, the budget tagging process identifies climate change mitigation expenditures under six ministries (will be expanded to cover adaptation as well, and 17 ministries).

⁶³ World Bank JCAP (2018), *Bangladesh Diagnostic Report*

rather than corporate bonds as the asset allocation limit for the former is double (20% vs. 10%).⁶⁴ The IDRA is currently revising the investment regulations, with proposals to limit government bonds to 60% of the portfolio and raising the equity limit to 20%.

BSEC regulations also do not allow Bangladesh-based companies to invest in FX-denominated products. This means that domestic investors are not able to hold any bond issued in a foreign currency. This does not apply to investors with global parent companies, which can hold FX-denominated products on their behalf.

Even if this were not the case, further regulations make it challenging for banks to hedge FX risk. Scheduled banks in Bangladesh are not allowed to lend in foreign currency from their domestic banking units. If this were not the case, banks could hedge the FX risk from holding a hard currency bond, by lending in that same currency. Offshore banking units are allowed to lend in foreign currency, but these require setting up costly infrastructure abroad and can only lend to specific sectors in the economy.

5.2 International investors

Excessive currency and country risk

Most international investors do not want significant exposure to currency risk and those that are open to local currencies, are not necessarily looking for green products. Fluctuations in the value of local currencies directly impact the value of foreign investments. Emerging markets can experience large swings in inflation and exchange rates. While this has not been the case in Bangladesh in the recent past, short term fluctuations can be triggered by large influxes (or outflows) of foreign capital. Although international investors commonly look to emerging markets stocks for diversification, most are steering clear of fixed income assets.⁶⁵

Similarly, international investors looking for green products tend to favour developed markets such as Western Europe and North America. Green investment funds often follow indices such as the Bloomberg Barclays MSCI Green Bond index, a multi-currency benchmark that includes local currency debt markets tracked by the Barclays Global Aggregate Index.⁶⁶ Emerging regions are generally underexposed in the leading green indices, which tilts international investor portfolios towards Western European markets.

Bangladesh as a market is on the lower end of the investible universe in terms of credit ratings, leaving little room for additional risk from individual issuers. Though thresholds vary from investor to investor, the lowest rating considered is often around single B. Bangladesh currently has a BB- credit rating, suggesting investments in the country are considered 'speculative' because they are 'less vulnerable in the near-term but face major ongoing uncertainties to adverse business, financial and economic conditions'.^{67,68} Companies do however largely demonstrate a capability of meeting their debt payment obligations. International investors would be interested in products which could help mitigate this risk such as policy risk insurance.

⁶⁴ World Bank JCAP (2018), *Bangladesh Diagnostic Report*

⁶⁵ Osterland (2018), *Investors steering clear of emerging markets bonds due to currency volatility*

⁶⁶ [Bloomberg Barclays MSCI Global Green Bond Index \(2016\)](#). Other leading green, social or sustainable fixed income indices include: BAML Green Bond Index, S&P Green Bond Index, Solactive Green Bond Index and ChinaBond China Green Bond Index and Green Bond Select Index. [ICMA \(2018\), Green Bond Indices](#)

⁶⁷ [Trading Economics, Bangladesh credit rating](#)

⁶⁸ [Moody's Rating Scale and Definitions](#)

That said, there is a clear interest from international investors for emerging market debt in hard currencies, due to the much higher yield available and higher possible climate impacts. Emerging markets offer high growth, high risk and high return. As long as risks are kept within manageable levels, international investors are attracted to such high yield opportunities. However, approval is required from the Bangladesh Investment Development Authority for investment into a Green Bond by non-residents under the 2018 Guidelines for Foreign Exchange Transactions, presenting an administrative hurdle that may cool some interest.

Given this, credit enhancement would be most attractive if the final credit rating remained below AAA, leaving some risk and yield for the investor. International investors commented that if credit enhancement led to a AAA rating, there would be no advantage in investing in emerging market green debt relative to developed market green debt. On the contrary, investors may be less confident in the verification and management of the instrument from an emerging market issuer. Third party verifiers like MSCI and Sustainalytics currently give quite a poor ESG rating on the country.⁶⁹ As a result, providing a full credit enhancement for emerging market debt counterintuitively makes emerging market green bonds less attractive relative to their developed market counterparts. The ideal situation would be for a DFI such as IFC to provide a partial backstop, giving some additional security but also retaining some yield. However, it is worth remembering the international investment community is large and there exists a distribution of different risk preferences.

Unclear green impact and little verification

Third-party verification is required for most investments; second-party opinions are only trusted from a select few institutions. Third-party verification compares a bond against a taxonomy of eligible assets and activities. For green bonds, third-party verifier reports state whether the green issuance is aligned with the Green Bond Principles and the Climate Bonds Standard. By contrast, second party opinions provide an assessment of the issuer's own green bond framework, analysing the 'greenness' of eligible projects/assets. Given that second part opinions do not use a standard set of evaluation criteria, their (perceived) value is highly dependent on the reputation of the reviewer. International investors prefer third-party verification. Improving the share of green investments in Bangladesh receiving third party verification would help crowd in international investment.

Investors active in the 'green' space look beyond verification to consider mitigation potential per dollar invested, as well as wider ESG-dimensions. For example, from an ESG-perspective, investors particularly like renewable energy projects in emerging markets. This is because these countries typically have higher grid emission factors, meaning renewable energy projects displace dirtier fuels and have higher emission mitigation potentials. Yet this type of evidence is rarely presented alongside green investment opportunities in Bangladesh, which typically are not externally evaluated or verified. To attract international investment, Bangladesh could develop guidelines and domestic capacity to cost effectively estimate the mitigation potential of prospective green investments.

Impact investors indicate that an Environmental & Social Risk Management System (ESMS) should be an integral part of any green bond issuance process. An ESMS would enable impact investors to know how green bond proceeds were used, ascertain the supported assets were developed and operated in line with good international industry practices, and ensure no negative impact on local communities or the environment was created. Key elements of an effective ESMS include:

⁶⁹ Based on an international investor interview. MSCI and Sustainalytics ESG ratings are not public.

- E&S policy defining the performance-based standards and practices;
- Procedures for E&S assessment and management that provide safeguards that risks are adequately addressed, mitigation measures implemented, and opportunities identified and realized;
- Monitoring and reporting processes to help with adequate reporting of E&S performance to management and investors, along with the adoption of good practices and continuous performance improvements;
- Demonstrated capacity to manage E&S issues.

Evidence of alignment with NDC

Bangladesh could strengthen the attractiveness of its investments with clear evidence of the alignment between a programme of green bond issuances and its NDC. Investors are looking for a programmatic approach plugged into national strategy, as this ensures environmental impact, country ownership and helps to reduce policy risk. As green bonds are a key tool for governments to raise long term capital to implement infrastructure plans in line with national climate targets, investors can play a crucial role in helping support Bangladesh in achieving its NDC commitments. However, international investors need to be able to see this connection without the need for expensive, investment-specific due diligence. Ensuring that there is clear evidence of alignment with the NDC and wider national strategy is critical, for example, through the development and publication of a priority list of strategic projects (endorsed by the Government of Bangladesh).

Small project / instrument size

International investors have large minimum ticket sizes for bond investments, often exceeding typical project sizes in Bangladesh. Especially in the case of energy efficiency projects, investment opportunities are generally small and disaggregated. This sets a barrier to capital inflows because it raises the transaction costs for investors, despite attractive payback periods of three to five years. Aggregators in the form of long-term financiers, collecting portfolios of energy efficiency investments, have proved useful to bridge this gap. On the asset side, successful aggregators will have capacity to effectively assess, manage and underwrite sector-specific project risk. On the liability side, they will be able to access investors and raise capital in the terms to maturity demanded by project developers.⁷⁰

5.3 Issuers

High taxes and regulatory barriers

Green bonds currently face the same fiscal and regulatory challenges as vanilla bonds, including a stamp duty tax and long approvals process. Current tax policy on fixed income products includes a 1.5-2% duty cost on all bond issuances.⁷¹ While this stamp duty may be removed in the near future, current and potential domestic issuers noted that this high compared to other emerging markets and has been a strong disincentive to raising capital through a bond (other than the government as sovereign bonds are tax-exempt). This is in line

⁷⁰ [Kidney, Veys, Flensburg and Jones \(2010\), *Environmental theme bonds: a new fixed income asset class*, written as a chapter for an IFR Intelligence Report on Sustainable banking: Risk, reward and the future of finance](#)

⁷¹ [National Board of Revenue](#). This includes registration fees, stamp duties, issue manager fees, underwriting fees, credit rating, legal and auditing fees, central depository fees, and listing fees.

with findings from the JCAP development program, which reports that taxation issues, and particularly stamp duty, were repeatedly raised by stakeholders as a disincentive for vanilla bond issuance.⁷² BSEC have also identified stamp duty as a key issue restricting the development of the bond market and intend to remove stamp duty for bonds issued by listed banks in the near future. However, a proliferation of fees besides stamp duty creates additional hurdles for companies. For example, a trustee is needed (which is not in other markets like London and Singapore), and trustee fees can be up to 5% of the total issue value. Moreover, the bond issuance process itself takes too long. Under Bangladesh's current regulations on private placement and debt securities, it should take approximately 3-4 months⁷³ for a bond issuer to receive approval of the bond, yet in practice this takes longer at 6-12 months.⁷⁴ This is a result of the large number of organisations that need to sign off an issuance: BSEC, Bangladesh Bank, the Bangladesh Investment Development Authority (BIDA) and the respective regulator (in case of companies in the infrastructure sector). All of the above factors weigh down on the attractiveness of bonds in general as a capital-raising instrument relative to alternatives such as term loans and equity.⁷⁵ Among these, issuers highlight that concerns over regulatory capacity are secondary to fiscal and economic incentives.

Most issuers cite the lack of a clear regulatory framework and incentive structure for green bonds. There is currently no policy framework from Bangladesh Bank or BSEC on green finance, despite the fact the Government stated its ambitions to develop a green bond market as early as 2016.⁷⁶ Current regulations for issuing plain vanilla bonds are prescriptive and issuers are unclear if they will apply to green bonds. For example, issuers indicate they have a small bandwidth to work in, with caps set on the rates for both borrowing and lending. In addition, any green finance product needs to obtain certification from the Sustainable Finance Department at Bangladesh Bank, bond and debenture issuance must be approved by BSEC with issuers meeting certain ratings levels, and Non-Bank Financial Institutions must obtain prior approval from Bangladesh Bank for issuing bonds. A lack of clarity on BSEC and Bangladesh Bank's regulatory position is therefore a major barrier to issuance.

Unclear project pipeline and lack of understanding

Specific to green bonds, there is a lack of understanding of what classifies as 'green' and there is no clear project pipeline for bond-scale finance. For placing an issuance, there would need to be a strong and credible pipeline. At the moment, issuers are not convinced there is a project pipeline of a suitable scale for bond finance. The private sector pipeline is not well-established, which is in part driven by a lack of understanding of what classifies as 'green'. Although many currently active investments could qualify as green with little adjustment, lenders do not realise this is the case due to a misperception of what 'green' is. As a result, public intervention is required to help kickstart the market. Three potential actions could help clarify national definitions of 'green': (i) direct funding of public projects (by issuing a sovereign green bond that can then serve as an exemplar), (ii) establishing a clear set of priority green projects and (iii) providing clearer guidelines on what would and would not be eligible as 'green'.

Bangladesh Bank's current list of 'green products' needs to be expanded, with clear project eligibility criteria.

Currently, Bangladesh Bank defines a list of 8 sectors and 52 specific 'green' products, which qualify as contributions to financial institutions lending as 'green finance'. This is a list of specific products, rather than

⁷² JCAP (2019), *AIDE MEMOIRE, Bangladesh J-Cap Implementation Mission: Non-government Bond Market Development April 15-24, 2019*

⁷³ As set out in BSEC's Private Placement of Debt Securities Rules 2012

⁷⁴ GuarantCo (2019), *Study of Bangladesh Bond Market*; Stakeholder interviews

⁷⁵ JCAP (2019), *AIDE MEMOIRE, Bangladesh J-Cap Implementation Mission: Non-government Bond Market Development April 15-24, 2019*

⁷⁶ [The Daily Star \(2016\), Green bonds on the horizon](#)

a set of policy guidelines, and so restricts the ability of issuers to support other sectors not covered in this specific product list. For example, the current list of green products does not include emerging technologies such as hybrid vehicles or e-vehicles. This product list needs to be developed into a full set of guidelines and standards, giving clear, specific and actionable advice on what sectors, assets and activities are eligible. This has been a foundational first move in several green bond markets across the world including India and China.

Reaching bond-scale finance will require tapping into several different markets, notably getting access to SMEs as loan recipients. Many financial institutions and banks indicated a wide scope of borrowers is needed to issue a bond. SMEs currently account for a sizeable chunk of banks' loan portfolios, for example 40% in the case of BRAC bank. There is additional demand from SMEs for loans, but to tap into this, lenders will need to have more clarity on which of their products qualify as 'green', which can be more difficult to identify on a smaller scale.

Project developers see little payoff in green as opposed to non-green investment opportunities. Loan recipients or project developers need to receive some sort of benefit in order to generate sustainable opportunities and investment products. As enforcement of regulations is limited, and incentive systems tend to favour conventional or non-green projects, they currently face little incentive to do so.

Poor access to investors

There is a distinct lack of domestic investor demand for green bond products. If they cannot place a bond, issuers are naturally reluctant to issue one. Domestic investors are discussed separately in Section 5.1, but the main issues from the issuer perspective are: (i) investors want to keep to standard, existing products and are therefore not inclined to try a new product like a green bond, (ii) the artificially high bank fixed deposit rate (FDR) is crowding out domestic investor demand; and (iii) trust in rating agencies and creditors is low, resulting in high expenses to obtain sound financial information.

Broadly, issuers believe some form of concessional finance or public intervention is required to kickstart the market. This could be in the form of DFI credit enhancement or demonstration issuance of a sovereign green bond. As FIs often have to pay for credit enhancement, they will need to be sure that there is a clear investor market and payoff to justify the costs and to ensure the benefits are worth it. Issuers believe a demonstration investment will tackle perceptions of high risk in green bonds and catalyse investor interest.

To bolster issuers' confidence that there is sufficient demand, they require matching with international investors. Currently, issuers are not confident they can access international investors and are unclear which international investor groups might be interested to subscribe to a green bond. There is a real need for a matchmaking platform, possibly supported by a roadshow and marketing assistance.

High transaction costs for issuers

Due to the lack of trust in the domestic ratings market, potential issuers must look to international rating agencies, which raises transaction costs. This issue is exacerbated by a relatively low national credit rating, which depresses the attractiveness of individual investments. A higher quality domestic market for ratings services would improve the capacity of Bangladesh's green finance sector and reduce prices.

The lack of specific national guidelines on what assets are 'green' and how to estimate their impact, raises the cost for issuers who try to demonstrate this. Some issuers have purchased external assessments of the mitigation potential of their investments, as their project activities are not included in Bangladesh Bank's defined list of 52 'green products'. This unnecessarily raises costs and could be avoided with more

comprehensive and clearer national guidance. Generally, issuers have a lack of capacity to identify carbon emission baseline and reductions themselves. The cost of performing these assessments (which can be valuable in some circumstances) could be lowered with better national guidelines and a more active domestic market for assurance and verification services. DFIs are particularly well experienced in this sector and could provide guidance or technical assistance.

As there is no risk-free benchmark rate, potential issuers are unclear how to structure coupon rates. As there are no benchmark rates from the government bond market, issuers cannot apply common practice in global markets by adding a sensible premium to risk-free benchmark rates. This leaves issuers unsure how to price bonds and structure coupon rates. It also makes it harder for investors to assess risk-adjusted returns, which is a particular issue for international investors considering investing in an FX-denominated bond.

Most issuers face challenges when trying holding long term FX reserves as hedging options are expensive. Issuing a USD bond would be difficult as there is currently no hedge market beyond 6 months. A USD:BDT hedge is available for 6 months or below at a reasonable cost. Longer term products are prohibitively expensive, which dramatically raises the cost of an FX-bond issuance. This is a particular concern for NBFIs who have a higher default risk than banks and are thus, subject to even higher hedging costs.

FIs are unable to lend in foreign currencies by regulation and so cannot hedge FX risk internally through selling new loans or debt products. Domestic FIs and corporates are not allowed to lend FX-denominated products from onshore banking units. Therefore, only international commercial banks with large offshore banking units are able to successfully manage the currency risk associated with a hard currency issuance. Approval from the Bangladesh Bank Foreign Exchange Policy Department would be required for any foreign currency denominated Green Bond.

6 Public sector-driven solutions

In this section, we identify a series of regulation and policy solutions available to Bangladesh that could help overcome the market barriers identified in Section 5. Domestic investors, international investors and issuers alike face material difficulties in participating in the green bond market. The public sector can use policy tools to strengthen both the willingness and capacity of each of these groups to do so.

Our focus remains on barriers specific to a green bond issuance, over and above a plain vanilla bond issuance. Bangladesh's broader fixed income market is nascent. A series of previous studies have explored why this is the case and how the market can be developed.⁷⁷ While overcoming these barriers is likely to increase the feasibility of a green bond issuance, it does not necessarily preclude a green issuance. Here, we maintain our focus on the barriers unique to the green bond market to ensure this report adds additional value and does not duplicate effort.

We present a broad set of policy tools; some are critical foundations of market development commonly used across the world, others are more exploratory and innovative. We provide a menu of options for public sector actors in Bangladesh drawing heavily from the Climate Bonds Initiative's guidance for public sector actors wishing to stimulate green bond market development.⁷⁸ In Section 7, we consider which policy tools are highest priority for Bangladesh and what this implies for the role of key public institutions.

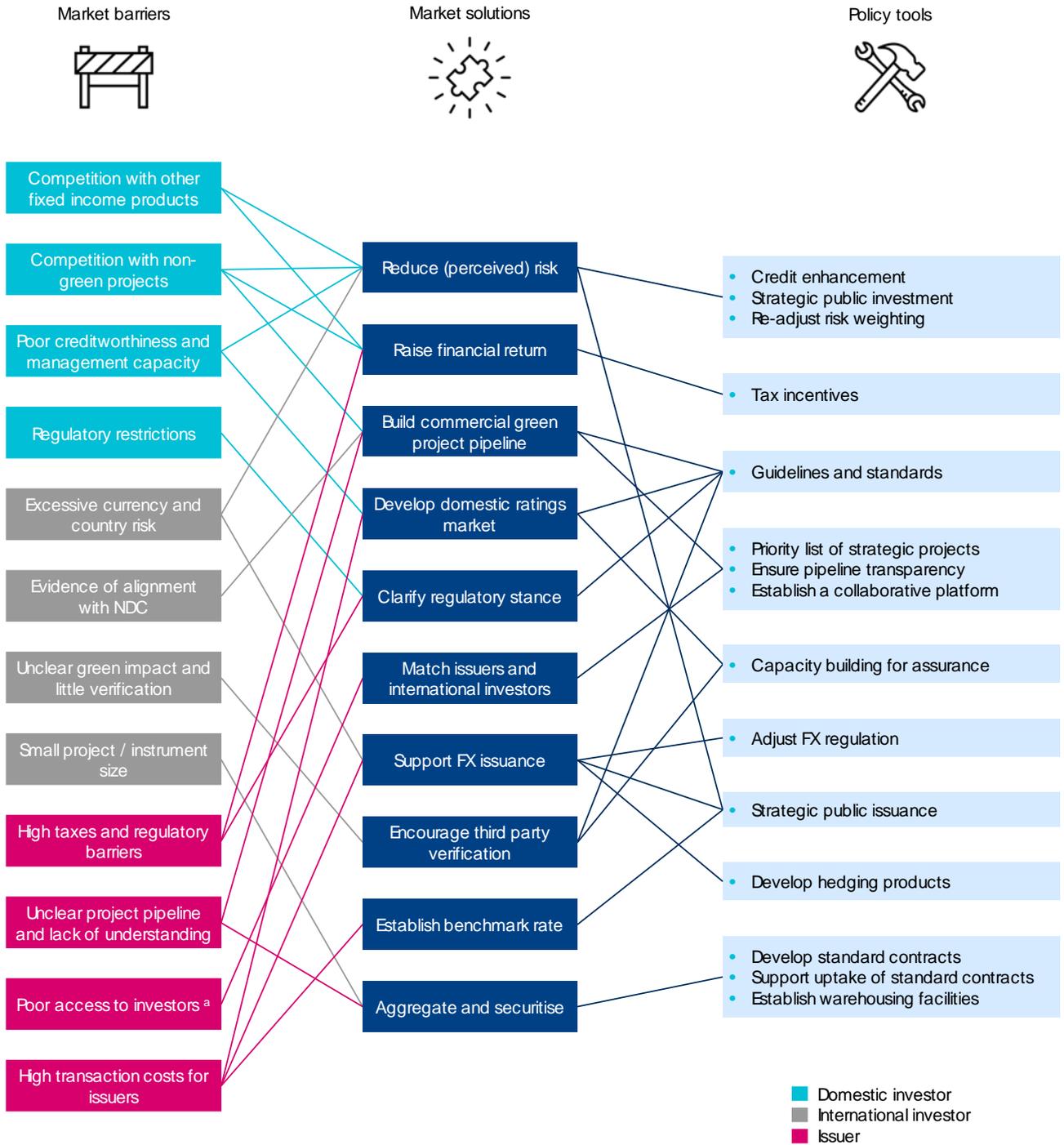
Figure 12 maps the market barriers identified in Section 5, first to market solutions and then to the policy tools that underpin them. Green bond market development is complex, involving several different stakeholder groups each with interdependent relationships. Mirroring this, the set of possible policy tools is large and interconnected. Some groups face the same market barriers, some possible solutions address multiple barriers and some policy tools help support multiple solutions.

Sections 6.1 through 6.6 discuss each of the market solutions in turn. We first explain what the market solution is and how it addresses each of the relevant market barriers. It then defines each of the policy tools that could be used to achieve that market solution, discusses which institutions are best placed to drive their implementation and points to examples of where other countries have used them.

⁷⁷ World Bank JCAP (2018), *Bangladesh Diagnostic Report*; GuarantCo (2019), *Study of Bangladesh Bond Market*

⁷⁸ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

Figure 12 We map each market barrier, first to market solutions and then to policy tools



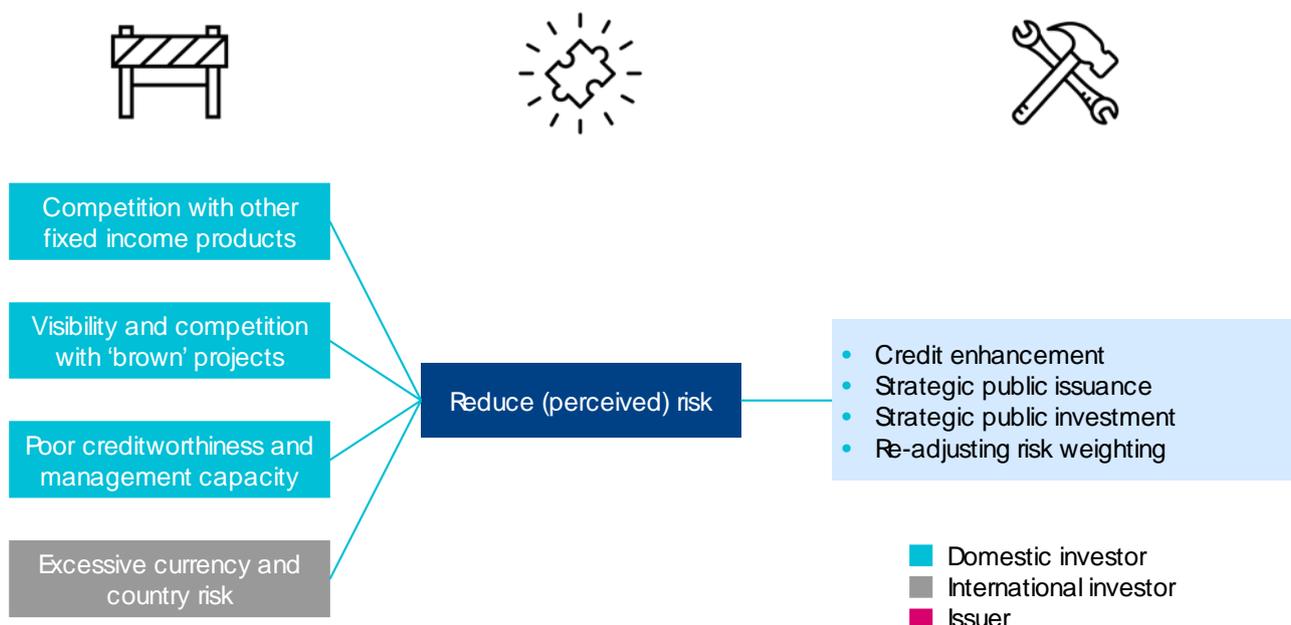
Source: Vivid Economics

6.1 Reduce (perceived) risk

Reducing investors’ perception of risk (whether due to the green bond itself or underlying project activities) improves the risk-adjusted return of the investment. This helps address the following market barriers:

- Competition between green bonds and other fixed-income products, which currently offer higher or comparable returns with lower financial risk;
- Low visibility of green project opportunities and competition with ‘brown’ projects among scarce investor capital;
- Poor creditworthiness and management capacity, raising the financial risk of the bond for investors;
- Excessive currency and country risk, for international investors who do not have operations in Bangladesh.

Figure 13 Improve risk return – barriers addressed and policy tools



Source: Vivid Economics

Credit enhancement

In the early stages of a market, public sector actors can absorb credit risk through credit enhancement to improve the risk-return profile of an investment. The risk return of green bond must be competitive with that of a plain vanilla bonds and other competing investment products. Credit enhancement raises the credit rating of the bond, usually at a fee charged to the issuer. The effect of credit enhancement on a product’s credit rating depends on the form of enhancement and the guarantor’s creditworthiness. This can be an effective means of raising the attractiveness of an investment, helping to tackle a poor issuer credit rating and even external factors such as political risk. For example, in 2015 the Reserve Bank of India has allowed

banks to provide partial credit enhancement to infrastructure bonds to make them more attractive, especially for institutional investors such as insurance companies and pension funds.⁷⁹

Public sector actors can redeploy credit enhancement tools they are already familiar with to drive private investment in green bonds. Development banks in particular routinely use credit enhancement tools such as guarantees, first loss (subordinated) debt, equity and insurance to support plain vanilla bond issuances in priority sectors and regions. These tools could help channel private investment into green bonds in several ways:

- Integrating a preference for supporting green bonds in existing suitable credit enhancement schemes;
- Establishing specific green credit enhancement schemes by replicating successful existing non-green credit enhancement schemes;
- Exploring the concept of policy risk insurance specific to green bonds and the uncertainties they face.

Credit enhancement exists in many forms and need not imply a AAA credit rating. There was a clear demand from international investors to avoid credit enhancement that resulted in AAA ratings. International investors look to emerging markets for higher yields. In most cases, a AAA credit rating eliminates this and could lead to a loss in investor interest.

State-owned financial institutions such as IDCOL, BIFFL, and multilateral development banks such as IFC and ADB would be well placed to deliver this type of assistance. Their familiarity with the tools means they understand how to structure them, the appropriate level of concessionality and the financial exposure that implies as a guarantor.

Strategic public issuance (see also Sections 6.6 and 6.9)

A first issuance of a green bond by a public sector actor would help establish a ‘proof of concept’ and send a strong signal for the market, reducing transaction costs for subsequent issuers. It can help engage both investor and issuers, raising awareness of the asset class and bringing focus on the green project pipeline. It can also act as an indicator of policy or strategic development priority among public sector actors, providing greater comfort for private sector actors hoping to participate. The first green bond issuance in a country can also act as a template for future issuances in terms of the structure, terms and conditions and counterparties engaged. Overall, public sector issuance is one of the quickest and most effective ways to build confidence in a market.

National governments, sub-sovereign entities like municipalities or cities, development banks and green banks have all issued first-of-a-kind demonstration green bonds in other markets. Sovereign green bonds offer a way for governments to focus efforts on and attract new investment in green technologies, improve visibility and transparency in public finance, and deepen capital markets. Sovereign green bonds contributed USD 17.5bn in 2018, reaching a 10.5% share of the market.⁸⁰ For example, the Nigeria Debt Management Office issued USD 30m with road shows in Lagos and Abuja, and listed on the Nigeria Stock Exchange, to support projects identified as priority in achieving its NDC targets. Indonesia’s Finance Ministry issued USD 1.25bn of green sukuk bonds, attracting both Islamic and green investors (see Box 1 below).

⁷⁹ Roy, A. (2015), *RBI allows banks to offer credit enhancement to infrastructure bonds*

⁸⁰ CBI (2017), *Sovereign green bonds briefing*

Investors take comfort in institutions with a long track record and financial strength. High credit ratings allow investors to enter the green bond market without exposing themselves to high levels of financial risk. AAA multilateral development institutions such as the EIB, World Bank and IFC have been instrumental in the development of green bond markets globally. Domestic development banks and other state-owned entities with large volumes of green loans on their books can use a green bond structure to take these off their book and mobilise new capital.

In the context of Bangladesh, the national government or a state-owned financial institution are best placed for a strategic public issuance. Given the relatively nascent fixed income market, institutions with previous issuance experience would provide the most comfort to the market. While the national government, IDCOL and BIFFL have not issued long term bonds (though IDCOL has announced its intention to do so), they each have demonstrated some experience in the structuring and management of bonds and other fixed income products. In the longer term, Bangladesh should aim to strengthen the fiduciary and management capacity of municipal governments to enable a programme of municipal issuances closely tied to NDC implementation. However, public issuances of green bonds may also create competition with other public national or municipal bonds, suggesting the need to balance issuances to avoid cannibalisation of the investor market or competition with other public actors that leads to unnecessarily high coupon rates.

Given the potential support available, a green bond could be a strategic and cost-effective option for first-time sovereign issuance in the long-term capital market. A large number of institutions including IFC, the World Bank, the UN and the Global Green Growth Institute have a number of support programmes to help sovereigns through the process of issuance. This holds the potential to reduce transaction costs of issuing a long-term bond for the Government of Bangladesh. Given the nascency of the government bond market, this would neither be quick nor easy for the Government. That said, in many ways, a green first-time issuance could be more likely than a plain vanilla first issuance.

Box 1 Indonesia's sovereign green bond issuance

Indonesia does not have a tradition of using the bond market for refinancing purposes. To kick-start the use of debt capital markets, a sovereign green bond was used to encourage market development. To assist this, the Government of Indonesia developed the *Republic of Indonesia Green Bond and Green Sukuk Framework* in 2018. The latter is consistent with Islamic law.

A USD denominated bond was seen as the most attractive means of accessing foreign investors, since the Indonesia Rupiah offshore Bond Market (Komodo Bond Market) is still nascent.

The world's first sovereign green sukuk was launched in March 2018 for USD 1.25 bn. It had a 5-year maturity and a yield of 3.75%, lower than the expected 4.05%. Investors were geographically diverse: 32% Islamic market, 25% Asia, 15% EU, 18% USA and 10% Indonesia. Government has tagged expenditures on climate or environment-related projects in nine different eligible sectors including renewable energy, sustainable transport, waste management and green buildings. The proceeds from the issuance were also used for resilience projects. Project selection is undertaken by the Ministry of Finance and National Development Planning Agency.

There have been three further green bonds issued since the debut sovereign green bond issuance.

Lessons for Bangladesh include:

- Because international investors are not familiar with Bangladesh, a sovereign hard currency issuance is likely to be easiest to place.
- A sovereign issuance should consider spending proceeds on adaptation as well as mitigation, in line with Bangladesh's NDC. Adaptation investments in hard infrastructure such as flood defence do not have clear revenue streams and hence, need to be spearheaded by public sector issuers.
- Almost 30% of Indonesian green bond proceeds are allocated to sustainable land use and adaptation, which could serve as a useful model for Bangladesh which experiences seasonal river and coastal flooding. For example, the high population density and dependence on the Ganges for irrigation suggests the need for climate smart agriculture projects which could be refinanced through green agricultural bonds.

Strategic public investment

Strategic public investment entails a public sector actor leading by example and providing a substantial share of initial subscriptions to a green bond issuance. This sends a strong signal to both domestic and international investors that the bond is viewed as legitimate, trust-worthy and financially sound. cornerstone investment is a rapid and simple way of building faith in an issuance and accelerating private investors' introduction to the green bond market.

For national governments and development banks alike, green bond investment can help meet targets and demonstrate commitment to acting on climate change. For national governments, green bonds offer an at-scale mechanism to channel public funds earmarked to meet environmental goals into productive uses. For development banks, green bonds are eligible to count towards green finance or investment quotas. A series of green bond issuances in India have benefitted from 100% investment (sole subscriber) from DFIs including FMO, IFC and YY (see Box 2 in Section 6.3). IFC financed this investment through the issuance of their own green bond, with the pure purpose of reinvestment in other green bond products.

In the case of Bangladesh, demonstration investments from the national government, Bangladesh Bank, IDCOL, BIFFL or multilateral development banks could act as a trigger for a wider pool of domestic and international investors. Bangladesh Bank is the only central bank in the world to actively target green bond issuances with a portion of its reserves. However, this must not come at the expense of the primary objectives of the bank: price and financial stability. As a result, only issuances from multilateral development banks and highly rated financial institutions are currently considered. Making this a reality and possible widening the potential pool requires close cooperation between the issuing entity and the investor. If interested in pursuing this option, the public sector entity should proactively approach issuers and work with them to develop their issuances to commercial feasibility.

Re-adjust risk weighting

Regulators have the potential to adjust risk weightings for banks and capital charges for insurers to better address climate change risks, indirectly channelling additional investment to green investment products. While an uncommon and ambitious policy tool, adjusting risk weighting formulae does not imply worsening long-term resilience. On the contrary, critics are calling for a regulatory change that better recognises

systemic risks and calls for greater long-term investments such as resilient infrastructure.⁸¹ From this perspective, climate-smart investments are in many situations more resilient to their traditional ‘brown’ counterparts.

China is currently exploring two options to support the green bond market through preferential risk weighting.⁸² The first would provide a more favourable risk weighting to green loans, if they are financed by a green bond structure, strengthening incentives on the issuer side. The second would provide a more favourable risk weighting to investors’ holdings of green bonds, relative to non-green bonds, strengthening demand on the investor side.

Any adjustment to risk weighting would require close cooperation between Bangladesh Bank, BSEC and IDRA. First and foremost, adjustments to drive green bond market development must not come at the cost of threatening financial stability. Change need to be based on credible evidence on long term risks and a clear understanding of how regulation is likely to change market actors’ behaviour. As a result, it would be prudent to wait until additional evidence is available on the impact of weighting adjustments before pursuing as a policy tool.

6.2 Raise financial return

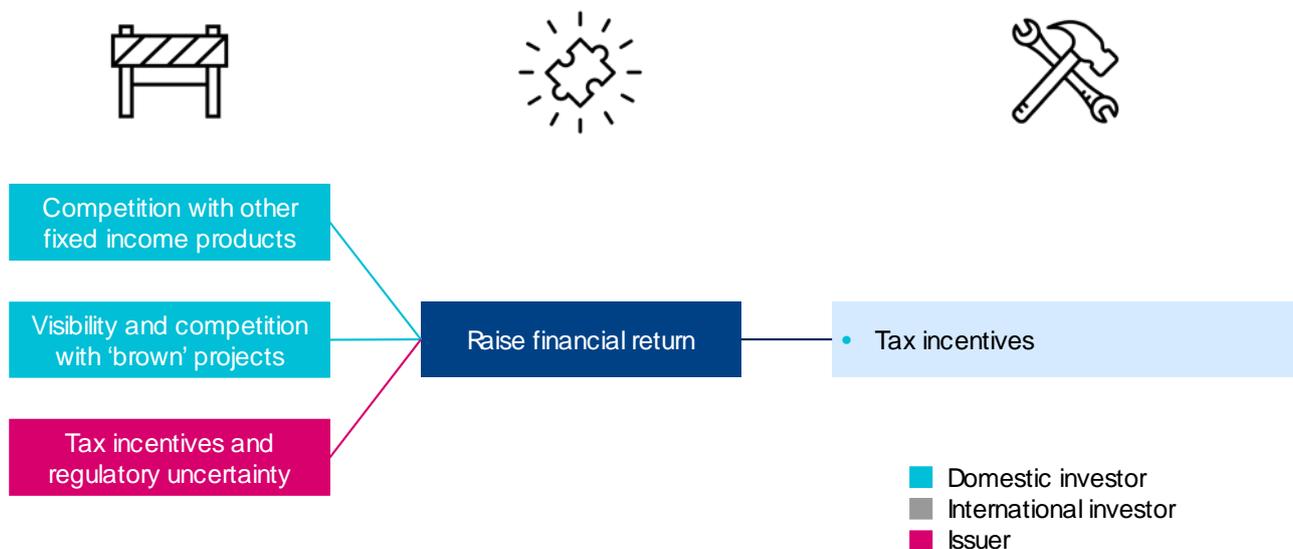
Raising the financial return of the (whether due to the green bond itself or underlying project activities) improves the risk-adjusted return of the investment. This helps address the following market barriers:

- Competition between green bonds and other fixed-income products, which offer higher returns with much lower financial risk;
- Low visibility of green project opportunities and competition with ‘brown’ projects among scarce investor capital;
- Tax incentives and regulation increasing the costs of (green) bond issuance relative to other forms of raising capital.

⁸¹ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

⁸² CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

Figure 14 Improve risk return – barriers addressed and policy tools



Source: Vivid Economics

Tax incentives

Tax incentives can be a powerful tool to raise the financial return of green bond investments. Most national governments, including Bangladesh, use tax incentives to stimulate certain segments of the bond market. For example, corporates and individuals holding zero-coupon bonds receive an income tax exemption and government bonds are tax free. In Brazil, tax-free bonds can be issued for large infrastructure investments, construction conglomerates, and wind farm developers. In China, the national government introduced tax exemptions for institutional investors that allowed green bonds to receive the same treatment as government bonds. However, the feasibility of any tax incentives will depend on the current fiscal position and macroeconomic environment. Furthermore, any tax incentives developed for the green bond market must be carefully designed so as not to deter development of the broader fixed income market.

The Government of Bangladesh could extend existing tax-exemption schemes to also cover green bonds or establish specific tax incentives for green bond issuers or investors. The most typical incentives implemented include a preferential rate for withholding tax (effective for driving foreign investment), investor side income tax breaks, and issuer side tax and duty breaks.

If it chooses to pursue investor side taxes, the Government of Bangladesh should make efforts to harmonise tax incentives (i) across investor groups and (ii) with other governments, and to communicate the long-term trajectory for incentives. Without harmonisation, investor markets can be fragmented between eligible and non-eligible investors. In some cases, this can limit the investor pool, working against the overall objective of the tax incentive. Investor side taxes often only provide benefits for domestic investors and hence, are most effective in markets with a sufficiently large domestic investor market. While Bangladesh has an active domestic market, the secondary market for fixed income products remains nascent, potentially blunting domestic investor-side tax incentives. Clear and credible communication for the timeframes for tax incentives and when they may expire is also needed to maximise their impact, as investors (or issuers in the

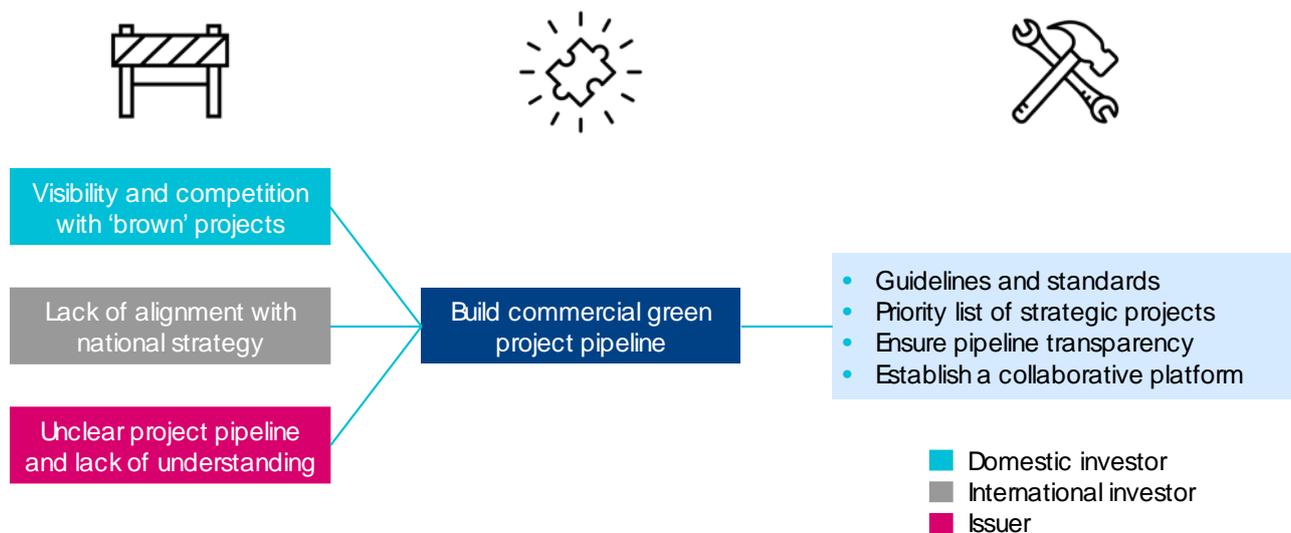
case of issuer-side incentives) may be hesitant to take up incentives if they are unsure of the duration of incentives or of the government’s commitment to providing incentives as communicated at the time of investment or issuance.

6.3 Build commercial green project pipeline

Building a commercial green project pipeline requires identifying a healthy future schedule of projects that clearly qualify as ‘green’ relative to international or nationally defined standards and have well-defined revenue streams capable of generating a long-term positive return. This helps address the following market barriers:

- Low visibility and competition with ‘brown’ projects
- Lack of alignment with national strategy
- Unclear project pipeline and lack of understanding of what constitutes as ‘green’

Figure 15 Build commercial green project pipeline – barriers addressed and policy tools



Source: Vivid Economics

Guidelines and standards (see also Sections 6.4, 6.5 and 6.8)

In the case of Bangladesh, a clear set of national standards for what classifies as ‘green’, that builds on Bangladesh Bank current refinancing program, would help investors and issuers identify a clear pipeline of bankable projects. Both domestic investors and issuers reported they were unclear which projects and activities would be considered eligible for funding from a green bond. Comprehensive national guidelines will need to draw on a range of stakeholders that support the development and issuance of public and private bonds, including Bangladesh Bank, BSEC, the Ministry of Finance (and the Finance Division in particular) and IDRA. In the immediate term, Bangladesh Bank, in partnership with BSEC, can support private green bonds by continuing their current refinancing programme in the future and go beyond their published list of 52

'green' sectors to give clear and detailed guidance on what use of proceeds are eligible. This definition could draw heavily from existing international standards such as the Climate Bonds Initiative's (CBI) Climate Bonds Standard or be developed from scratch from a domestic platform. The process for developing guidelines should also take account of relevant national or sectoral laws and regulations that may affect specific investment areas, how these may affect green investment in identified areas, and what changes may be needed to support expanding investment and eligibility of investment areas for green bond financing. The national guidelines published by the Securities and Exchange Board of India (SEBI) could serve as a useful guide for Bangladesh (see Box 2 below).

Standardisation is also an effective and simple method to reduce transaction costs across all parties involved, improving the commercial viability of green projects. The development and uptake of common standards has been critical to the scale-up and harmonisation of almost all other parts of the financial sector. In essence, the proliferation of standards allows financial institutions to outsource a large share of due diligence services to a standard setting body and watchdog. It is clear that this reduces costs for investors, who no longer need to investigate individual securities and verify financial and environmental claims. But this also reduces costs for issuers, who can rely on tried and tested verification procedures in place of generating bespoke evidence for each product in-house.

Public sector actors can support the development and uptake of green bond guidelines and standards in several ways:

- fund market schemes developing definitional frameworks and standards for green bonds;
- establish and/or fund a national Green Bond Market Development Committee including key public and private stakeholders (including Bangladesh Bank, BSEC, Ministry of Finance and IDRA) to explore whether country-specific standards are needed, and if so, convene actors to develop these. This approach has been followed in several countries around the world including Mexico, Brazil, Turkey, India, China, Canada and the US (California);
- adhere to guidelines and standards across all public sector issuances;
- develop training materials such as 'how-to' guides for private sector issuers and offer advisory services to potential issuers on industry best practices and adhering to the guidelines and standards;
- if tax incentives or other support mechanisms for green bond exist, consider making these conditional on adherence to the specific guidelines and standards.

Box 2 India's renewable energy program

India's RE policy has several elements which provide private investors' confidence. The government has set an ambitious 'blue skies' target for deployment: 175GW of RE generation by 2022 out of a total generation capacity of 360 GW (as of October 2018); a strong institutional framework to deliver deployment and actions to reduce investors' exposure to risk by first exploiting MFIs and DFIs to bear some of the risks and more recently through the use of auctions to set an agreed and competitive long-term price for power.

RE deployment by developers is funded by borrowing from banks and non-bank financial institutions. The IPPs' receipts from PPAs are fairly fixed (varying with output) and low-risk, (though there can be delays in

state utilities paying for their purchases) and well suited to refinancing through a fixed income instrument like bonds. Once the project is finished and successfully operating, banks may refinance the loans through issuing (green) bonds. Alternatively, bigger developers like ReNew Power might directly access debt capital markets themselves.

Green bonds provide benefits to banks and IPPs giving them access to capital, including dedicated green capital from western investors, diversifying their source of funds and obtaining competitively priced capital. Although, high currency hedging costs can reduce the benefits of foreign currency issuance.

Established institutions like the National Thermal Power Corporation (NTPC) and state government utilities are aiding the roll-out of RE. Both use RE auctions to source power. The institution IREDA, established in 1987, was established to assist the financing of RE.

SEBI, the capital markets regulator, supports the green bond market. In mid-2017, it issued 'Disclosure Requirements for Issuance and Listing of Green Debt Securities.' The regulations covers disclosure, management of proceeds, and a list of sectors on potential use of proceeds. This guideline provides issuers and investors some comfort concerning regulatory expectations.

In the first two years, green bond issuers were largely public sector, giving the markets an initial strategic direction. DFIs like IFC and FMO also played a significant role in the green bond market's evolution by being the sole subscriber of some of the earlier green bond issuances. As understanding of green bonds improved, more market participants, with smaller sized deals, issued bonds. This enabled access to a wider selection of players, especially small FIs.

Lessons for Bangladesh include:

- The Government can signal its seriousness by declaring a challenging target and ensuring the existing and new institutional actors support the implementation.
- RE can be financed by private capital, but public and international development finance plays a vital role in the early days by bearing risks especially during the refinancing of debt. MDBs as sole investors of bonds can be a huge boost to this market.
- The green bond market can support the refinancing of debt from FIs and IPPs accessing foreign capital if it is denominated in international currency.
- This can be further supported by a national green bond framework.
- After this initial development, smaller Financial Institutions can tap the markets.

Priority list of strategic projects (see also Section 6.6)

Establishing a list of priority strategic green projects can help kick start a virtuous cycle between investors and project developers. The high-level targets and strategies for climate change infrastructure development in the NDC can be used to devise a list of more granular strategic low-carbon and climate resilient infrastructure opportunities. This is often done by national agencies, who work with investor and development bank partners to structure projects and bring them to market. A wide range of technical assistance to improve planning and pipeline development is available to national governments, for instance through the Green Climate Fund's Programme for Readiness and Preparatory Support, the Global Green

Growth Institute (GGGI), and UNEP PAGE. A transparent pipeline of projects incentivizes investors to develop stronger capabilities in investing in green infrastructure, which in turn is an incentive to scale up the pipeline of investable projects.

Using the NDC as a starting point, SREDA would be well placed to identify and develop strategic opportunities in Bangladesh's priority sectors. The NDC sets clear goals on renewable energy, energy efficiency in industry and buildings and transport, with substantial amounts of investment required. This could be expanded into a priority project list with more granular detail to demonstrate the potential for a commercial green project pipeline. Other emerging economies like Kenya have used this approach, formulating a national green climate fund strategy and portfolio that specifies several priority areas, programme elements, strategic impact areas and key partners to deliver on this portfolio.⁸³

Ensure pipeline transparency (see also Section 6.6)

Once a set of priority projects has been identified, public sector actors can help maximise its benefit by ensuring it is communicated to project developers and investors. This could be done passively through the publication of pipeline details or more actively through dedicated online platforms, road shows and other events. The European Commission is developing a central EU-level website to provide links to Member State pipelines as well additional project level information through the Connecting Europe Facility and European Structural and Investment Funds.⁸⁴ In 2015, China published a pipeline totalling USD 300 billion across more than 1,000 projects to kickstart the development of public-private partnerships for their delivery.⁸⁵

Establish a collaborative platform (see also Section 6.6)

Finally, an organised and efficient platform for collaboration can help catalyse the project preparation and development process, accelerating the pipeline towards commercial viability. Primarily this platform exists to connect project developers / issuers with investors. In practice, it is often constructive to also include public sector actors (who could also be the issuer) and development banks (who typically offer some form of cornerstone investment or de-risking instrument). The Green Infrastructure Investment Coalition, a partnership between CBI, Principles for Responsible Investment (PRI), UNEP Inquiry and the International Cooperative Mutual Insurers Federation (ICMIF), is one of the largest international examples. Recreating this on a national scale could streamline the project preparation processes necessary to underpin a green bond issuance.⁸⁶

6.4 Develop domestic ratings market

Bangladesh's domestic ratings market requires strengthening to ensure that issuers have access to a pool of qualified, cost-effective assurance services firms that produce outputs investors can trust. This helps address the following market barriers:

- Poor creditworthiness and lack of management capacity among potential issuers;

⁸³ Republic of Kenya, The National Treasury (2017), *The Kenya National Green Climate Fund (GCF) Strategy*

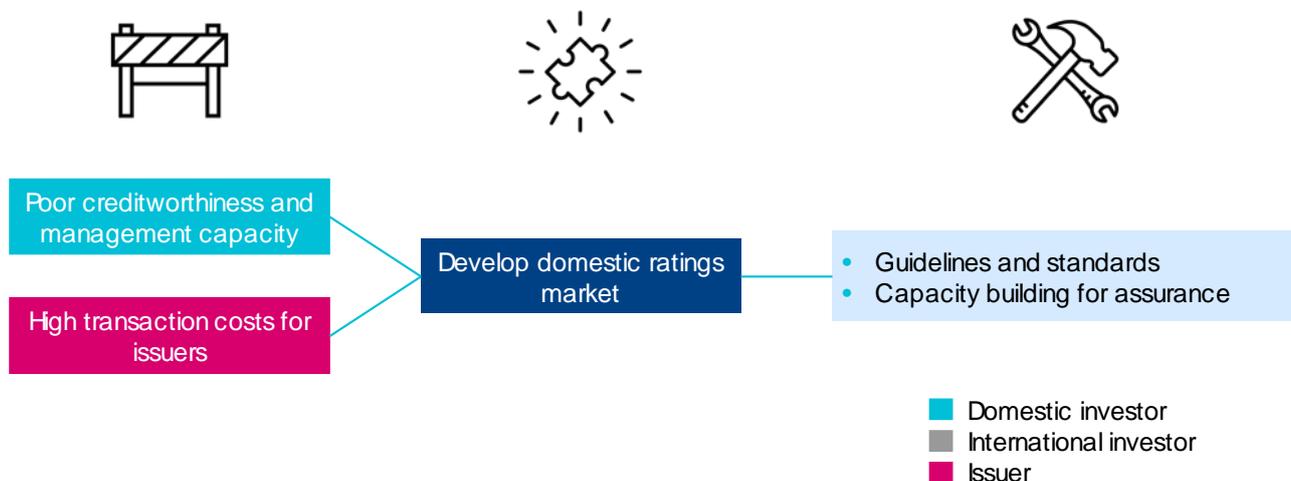
⁸⁴ European Commission (2015), *Building a Capital Markets Union*

⁸⁵ Goh (2015), *China invites private investors to help build USD 318 billion of projects*

⁸⁶ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

- High transaction costs for issuers, in particular, resorting to international credit rating agencies to evaluate their products.

Figure 16 Develop domestic ratings market – barriers addressed and policy tools



Source: Vivid Economics

Guidelines and standards (see also Sections 6.3, 6.5 and 6.8)

Establishing a clear standard and procedure for green bond issuance is likely to improve adherence to broader financial reporting standards and increase demand for local rating services. The requirements of a green bond in terms of use of proceeds, financial management and post-issuance reporting come in addition, not in place of, the standards required of a plain vanilla bond. As a result, green bond guidelines and standards should also cover best practice for plain vanilla bond issuance. Issuers and investors reported that the financial evidence presented alongside domestic investments was limited and often untrusted. Adherence to a new set of guidelines could drive new demand for assurance services and lead to the entry of several new providers in the domestic market. In general, this leads to an improvement in both the quality and cost-effectiveness of the service offering. For example, the Chinese Green Bond Guidelines set out criteria for management of proceeds by the issuers, which will require issuers without an environmental department to set up specialized accounts. Reporting criteria are quite stringent to ensure green bonds are credible and trustworthy.

Capacity building for assurance services (see also Section 6.8)

Public sector actors, particularly BSEC and IDRA, can play a key role in ensuring business advisory firms have the skills and capacity they need to follow international standards for financial reporting. Both incumbents and new entrants alike need to participate in a shift in domestic market norms to better financial reporting standards. The easiest way to do this is to encourage a division of the market in terms of the quality of service offered through certified adherence to international standards such as the International Standards on Assurance Engagements (ISAE) 3000. BSEC and IDRA can play an active role in raising awareness of these standards (and the benefits of following them) as well as facilitating and funding training sessions. An alternative is to mandate assurance service firms adhere to these standards. This would reduce costs for the public sector, but care should be taken to support firms through the transition to avoid disruption in the

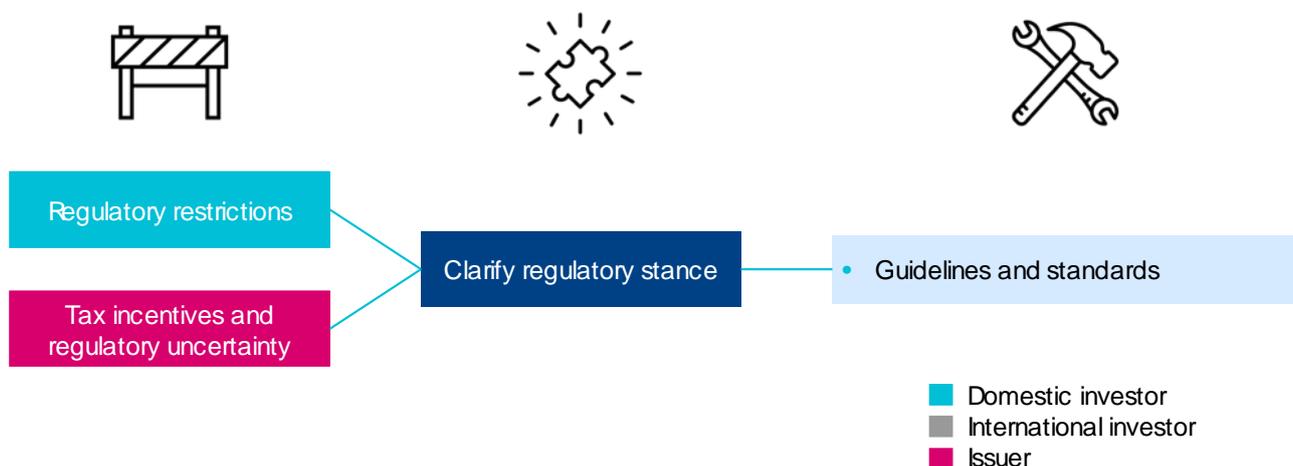
market. While supporting the development of the domestic ratings market, Bangladesh Bank may also be able to support action by making public its credit ratings for banks and financial institutions.

6.5 Clarify regulatory stance

Issuers and investors must have no doubt in their mind as to how green bonds fit into Bangladesh’s current regulatory landscape, their tax liability and impacts on other regulatory requirements. This helps address the following market barriers:

- Regulatory restrictions surrounding the treatment of green bonds in domestic investor portfolios
- Tax incentives and regulatory uncertainty surrounding the issuance of a green bond

Figure 17 Clarify regulatory stance – barriers addressed and policy tools



Source: Vivid Economics

Guidelines and standards (see also Sections 6.3, 6.4 and 6.8)

A clear set of national guidelines and standards are a critical first step to build confidence among issuers and investors. Stakeholder interviews revealed that neither issuers nor domestic investors have a clear idea how green bonds would be treated under current regulation in Bangladesh. Some commented they look for case-by-case advice from BSEC on the liability of different securities. This lack of clarity stifles the market, substantially raising costs for those financial institutions that seek advice and potentially removing those who don’t from the market entirely. Publishing a green bond-specific policy or briefing is a low-cost, high-impact first step in market development.

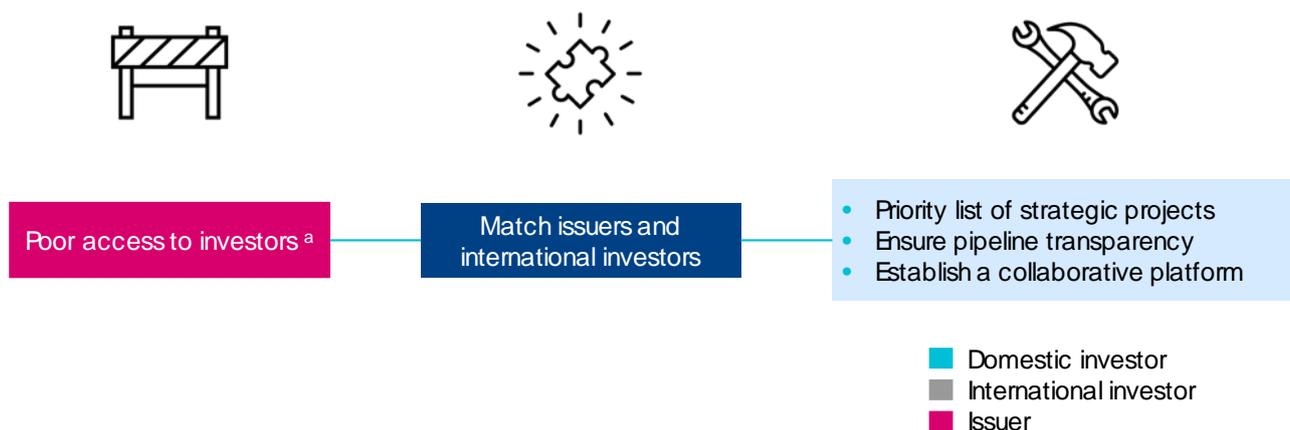
Bangladesh Bank and BSEC should explicitly clarify whether green bonds are eligible under the statutory liquidity requirements for commercial banks. However, this should only be done if green bonds are thought to be as safe and liquid as government bonds. Given the current state of the market, including green bonds runs the risk of undermining the purpose of the regulation.

6.6 Match issuers and international investors

Matching issuers and investors involves ensuring domestic issuers have the capacity to identify and approach potential investors with their products. This helps address the following market barriers:

- Issuers’ poor access to the international investment community, which effectively cuts off the international market and makes placing green bonds particularly challenging.

Figure 18 Match issuers and international investors – barriers addressed and policy tools



Source: Vivid Economics

Priority list of strategic projects, ensure pipeline transparency and establish a collaborative platform (see also Section 6.3)

Almost all of the policy tools used to build a commercial green project pipeline, will also help to connect domestic issuers in Bangladesh with international investors and international bond funds. Bangladesh Bank and SREDA should use open and collaborative platforms for pipeline development wherever possible. These provide important networking and marketing opportunities for domestic issuers (and financial intermediaries such as issue managers). The existence of a pipeline itself also gives domestic issuers and intermediaries a foundation for discussion with international investors and funds such as the Amundi Planet Emerging Green One (EGO) Fund, the world’s largest green bond fund focused on emerging markets.⁸⁷ Over time, this network will develop and strengthen such that public support won’t be required in the long term.

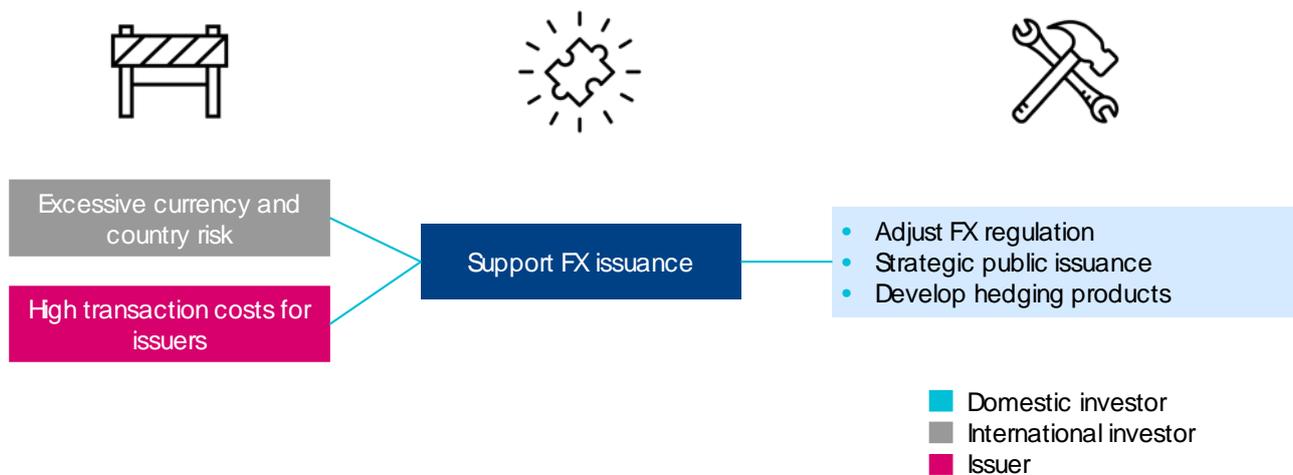
6.7 Support FX issuance

Issuing a green bond in a foreign currency presents a number of specific risks for issuers that are likely to require specific public assistance to overcome. This helps address the following market barriers:

- Excessive currency and country risk for international investors

⁸⁷ Amundi (2018), *IFC and Amundi successfully close world’s largest green bond fund*

Figure 19 Support FX issuance – barriers addressed and policy tools



Source: Vivid Economics

Adjust FX regulation; strategic public issuance (see also Sections 6.1 and 6.9)

One of the most rapid and effective ways to attract international investment is through an FX-denominated bond issued through the public sector, however, this will only lead to market development when coupled with regulatory reform. Domestic FIs and corporates face a series of challenges in issuing in foreign currencies. As they are raising money in a foreign currency, they face currency risk when converting back to Bangladeshi Taka. This is difficult to manage for several reasons. Investors and FIs are not allowed to hold securities in foreign currencies by regulation, banks are not allowed to lend in foreign currencies from onshore banking units and the local market does not currently offer long term commercial hedging options. Before these factors change, public sector actors such as the national government or state-owned development banks are the only institutions able to issue in hard currency. If the restrictions above were loosened, an FX-denominated public issuance could act as a powerful demonstration transaction, boosting domestic actors’ familiarity and confidence with FX issuances and encouraging other FIs to develop new hedging options.

Develop hedging products

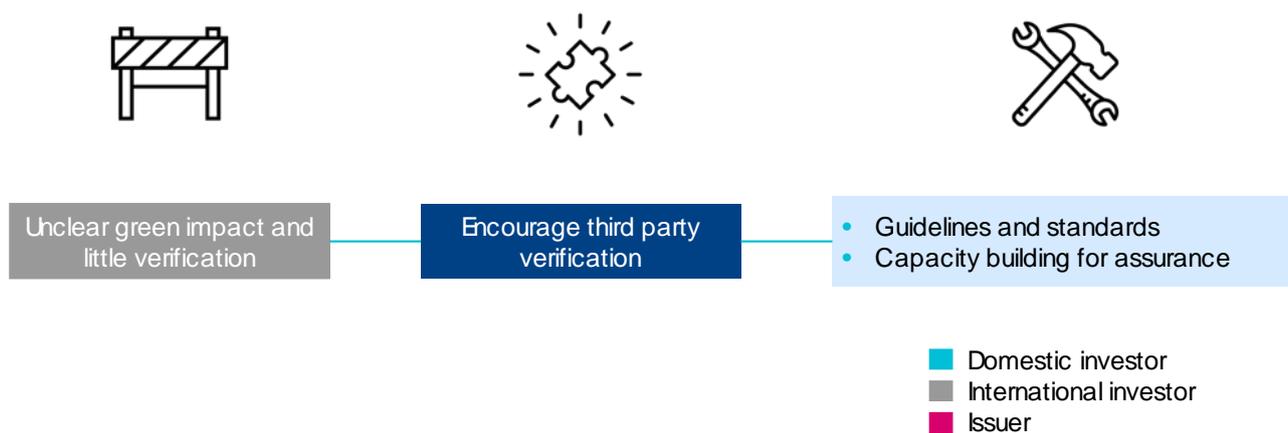
Bangladesh Bank and BSEC should work with financial intermediaries to improve the offering of hedging products for the domestic FIs in Bangladesh. These products are likely to be offered from international companies used to managing high levels of currency risk. BB and BSEC should proactively act as a market-maker, demonstrating the potential demand from the Bangladeshi market and ensuring market entry is viable and attractive for the key providers in the market. Market development efforts could be supported and/or financed through development banks such as IFC.

6.8 Encourage third party verification

This policy solution refers to shifting norms in the market away from currently low levels of financial and ESG-certification towards better financial reporting as well as third party verification of green bond status. This helps address the following market barriers:

- Unclear green (mitigation and/or adaptation) impact of potential projects and little third party verification conducted in the market

Figure 20 Encourage third party verification – barriers addressed and policy tools



Source: Vivid Economics

Guidelines and standards (see also Sections 6.3, 6.4 and 6.5)

Similar to the discussion of financial reporting under Section 6.4, if national issuance guidelines recommend that issuers seek third party verification of their bond, this is likely to raise the share of verified bonds. If issuers are able to provide evidence of adherence to national guidelines (for example, through a local form of certification), this will raise the attractiveness of their bond to investors (who can avoid costly due diligence). International investors in particular tend to look for third party verification in preference over second party opinions. If Bangladesh Bank can establish this as a norm among domestic issuers, it is likely to improve access to the international investor market.

Capacity building for assurance services (see also Section 6.4)

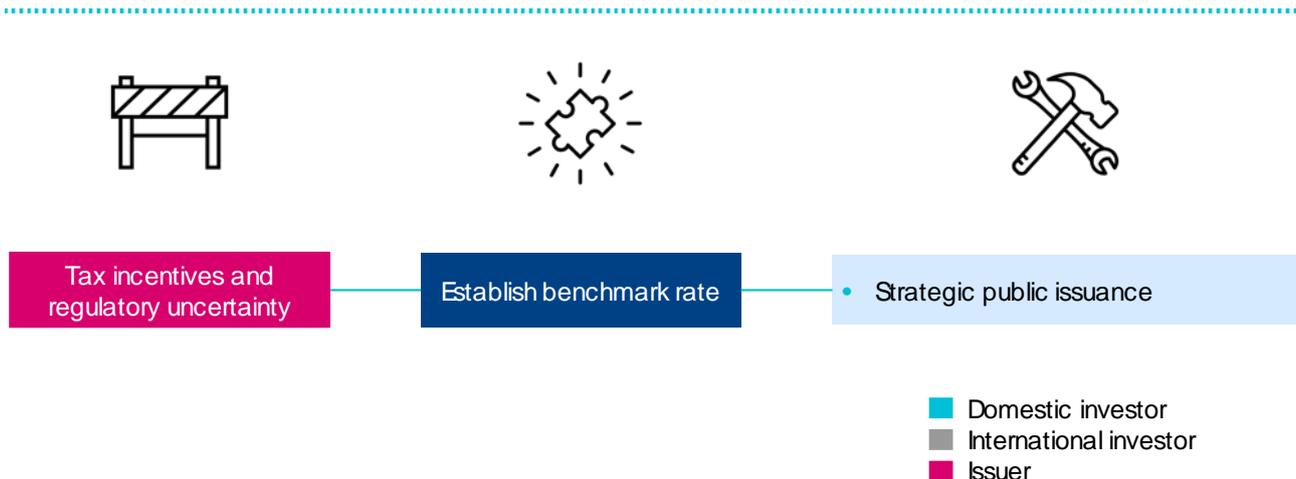
Capacity building activities described under Section 6.4 could be extended to cover green bond verification services. Doing so could encourage the development of local verifiers, stimulating a new segment of the financial sector. This has the double benefit of improving the international perception of Bangladesh’s green finance capacity as well as generating additional economic activity for domestic firms.

6.9 Establish benchmark rate

Establishing a benchmark rate (or risk-free reference rate) means ensuring there is a clear interest rate for a ‘risk-free’ investment product; this rate reflects prevailing market conditions and not individual characteristics of the asset. This helps address the following market barriers:

- High transaction costs for issuers, as benchmark rates are typically used as the anchor for a variable coupon rate. Without this reference point, issuers must design more complex coupon structures, which takes more time and resources.

Figure 21 Establish benchmark rate – barriers addressed and policy tools



Source: Vivid Economics

Strategic public issuance (see also Section 6.1)

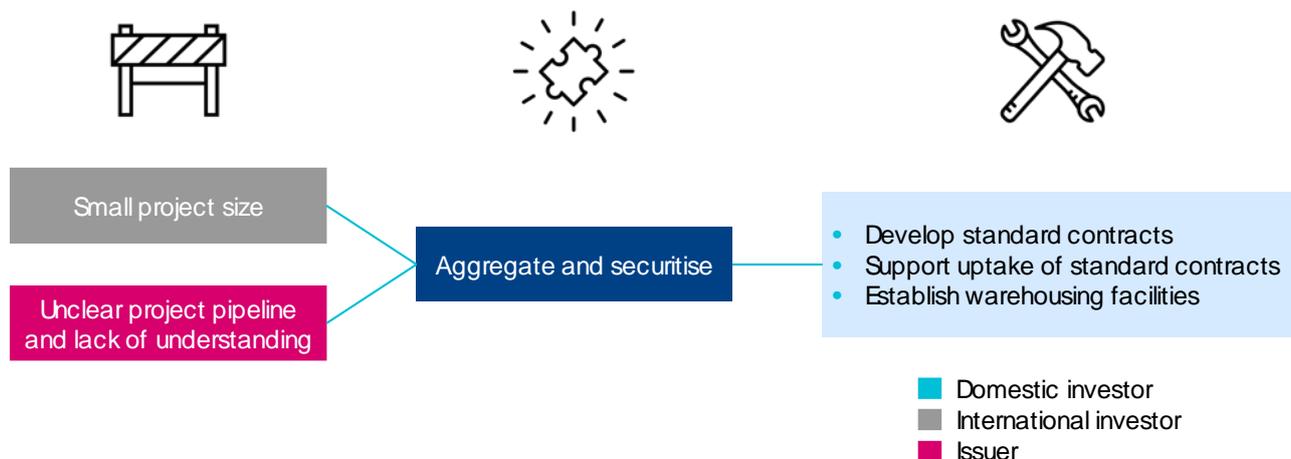
The Government of Bangladesh should issue a long-term bond (ideally green) to set a clear benchmark rate. In fixed income markets across the world, the benchmark rate (or risk-free reference rate) is set by long term government bonds. The lack of long-term government issuances in Bangladesh, makes it unclear what issuers should anchor their coupon rates too. Designing a workaround is difficult and costly. Either a plain vanilla or green bond could be used as a risk-free reference rate, since the rate reflects the risk underpinning the sovereign guarantee rather than underlying assets. Therefore, issuing a long term sovereign green bond could set a benchmark rate as well as reduce perceived risk in Bangladesh’s green bond market (see Section 6.1).

6.10 Aggregate and securitise

Aggregation and securitisation involve establishing facilities and structures that can combine smaller projects into a single larger investment. This helps address the following market barriers:

- Small project size below minimum ticket threshold for international investors
- Unclear project pipeline and a lack of understanding of what constitutes as ‘green’ among issuers

Figure 22 Aggregate and securitise – barriers addressed and policy tools



Source: Vivid Economics

Develop standard contracts

Aggregation and securitisation are powerful tools to connect institutional investors with small-scale project opportunities, but this first requires a sufficiently ‘deep’ green loan market. To date, securitisation efforts within the green finance sector have largely focussed on asset-backed securities (ABS).⁸⁸ An ABS involves first creating a pool of assets such as loans and leases, and then issuing a debt security backed by this pool. The ABS is usually issued by a Special Purpose Vehicle (SPV) and the payment of coupons is financed by the income from the underlying asset pool. Issuing through an SPV ensures the financial institution is not liable in the event that this income is insufficient to pay investors the required coupon. ABSs can be attractive to institutional investors as they provide access to small-scale project opportunities otherwise inaccessible and the pool itself offers diversification of risk across its assets. In addition, issuers often choose to create separate investment tranches offering different risk-return levels. Structuring an ABS requires there to be a sufficiently large pool of pre-existing standardised assets to pool. While there is already an active green loan market in Bangladesh, it is not well standardised nor is it of the size required to support multiple ABS issuances. In addition, Bangladesh’s green refinancing scheme offers lenders similar benefits but without a prohibitive minimum portfolio size. Nonetheless, Bangladesh should look to securitisation as a long-term option to access institutional investors and free up significant amounts of capital.

Standardisation of contracts is critical to facilitating securitisation. New green loans in Bangladesh must be standardised for them to be feasibly integrated into an ABS. This is challenging as even globally, there is a lack of standardised loan contracts for green assets.⁸⁹ The Government of Bangladesh or another public sector actor could play an active role in encouraging standardisation in much the same way as it could encourage the development and uptake of green bond standards (see Section 6.2). Options include supporting or funding market-led initiatives to establish standardised contract templates and guidance and facilitating

⁸⁸ Some financial institutions have also issued covered bonds, which are similar to asset-based securities (ABS) in structure but are treated differently on the holder’s balance sheet. Relative to ABS, covered bonds tend to be issued in more sophisticated financial markets. For this purpose, we narrow our focus in this section to ABS.

⁸⁹ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

collaboration across project developers, lenders, investors and development banks. The National Renewable Energy Laboratory (NREL) in the US has created a working group, connecting these different stakeholder groups, to develop standardised contracts for solar loans. Bangladesh could even model domestic standards (for solar) on the outcomes of this effort.⁹⁰

Support uptake of standard contracts

Once developed, public sector actors can catalyse uptake of standardised contracts by making public support mechanisms conditional on their use. The simplest forms of support amenable to this are publicly managed warehousing facilities (see below) or credit enhancement (which may require coordination between the Government of Bangladesh and development bank partners). Such policies should be viewed as short term measures designed to support the transition to standardised contracts, which should themselves build enough momentum over time to become the industry norm. The scale up of standardised contracts in the US mortgage industry is largely credited to the conditionality of Fannie Mae’s (Federal National Mortgage Association) guaranteed on the use of standardised contracts.⁹¹

Establish warehousing facilities

Bangladesh could accelerate the uptake of securitisation through the use of warehousing facilities which aggregate loans across different lenders. Financial warehousing has grown in popularity over the last decade and is particularly useful in small and nascent markets that struggle to meet the scale of lending required for securitisation. Most warehousing facilities are led by public sector actors, though a range of operating models exist. Warehouses for energy efficiency loans have been set up by a public-private partnership in the Pennsylvania, Connecticut’s green bank, and the Inter-American Development Bank (IDB) in Mexico. In the case of Bangladesh, this should be run by a state-owned institution with a good overview of the national green lending portfolio. Bangladesh Bank itself would be particularly well placed given its experience with the green refinancing program, as well as IDCOL with experience lending for both renewable energy and energy efficiency.

6.11 Summary

Table 8 summarizes the market solutions discussed above, matches them to policy tools and identifies the best placed public sector actors for their implementation. Stakeholders listed are either elected to lead the implementation of the policy tool, or to support its implementation. For each tool, we propose an indicative time frame based on: (i) the necessity of the tool to advance market development and (ii) the ease with which it can be implemented.

Table 7 Summary of policy tools matched to market solutions

Policy tool	Market solution(s)	Implementing stakeholders	Time frame
Guidelines and standards	Build commercial green project pipeline; develop domestic ratings	<u>Lead:</u> Bangladesh Bank, BSEC	0 - 0.5 years

⁹⁰ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

⁹¹ CBI (2015), *Scaling Up Green Bond Markets for Sustainable Development*

Green Bonds Development in Bangladesh - A Market Landscape

Policy tool	Market solution(s)	Implementing stakeholders	Time frame
	market; clarify regulatory stance; encourage third party verification	<u>Support:</u> IDRA; Ministry of Finance	
Priority list of strategic projects	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> NDC-NAP Advisory Committee; Ministry of Environment and Forests; Power Division; Ministry of Industry; Road Transport and Highways Division <u>Support:</u> SREDA; Bangladesh Bank; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Ensure pipeline transparency	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> SREDA; Bangladesh Bank <u>Support:</u> Ministry of Finance; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Establish a collaborative platform	Build commercial green project pipeline; match issuers and international investors	<u>Lead:</u> SREDA; Bangladesh Bank <u>Support:</u> Ministry of Finance; multilateral development banks (IFC, ADB, CDC)	0 - 0.5 years
Credit enhancement	Reduce (perceived) risk	<u>Lead:</u> Multilateral development banks (IFC, ADB, CDC); state-owned financial institutions (IDCOL, BIFFL)	0 - 0.5 years
Strategic public issuance	Reduce (perceived) risk; support FX issuance; establish benchmark rate	<u>Lead:</u> Ministry of Finance; state-owned financial institution (IDCOL, BIFFL)	0.5 - 1.5 years
Strategic public investment	Reduce (perceived) risk	<u>Lead:</u> Multilateral development banks (IFC, ADB, CDC); state-owned financial institution (IDCOL, BIFFL)	0.5 - 1.5 years
Adjust FX regulation	Support FX issuance	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	0.5 - 1.5 years
Tax incentives	Raise financial return	<u>Lead:</u> Ministry of Finance; <u>Support:</u> Bangladesh Bank	0.5 - 1.5 years
Develop hedging products	Support FX issuance	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	1.5 - 3 years
Capacity building for assurance services	Develop domestic ratings market; encourage third party verification	Bangladesh Bank; BSEC; IDRA	1.5 - 3 years
Develop standard contracts	Aggregate and securitise	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	1.5 - 3 years

Green Bonds Development in Bangladesh - A Market Landscape

Policy tool	Market solution(s)	Implementing stakeholders	Time frame
Support uptake of standard contracts	Aggregate and securitise	<u>Lead:</u> Bangladesh Bank <u>Support:</u> BSEC; IDRA	1.5 - 3 years
Establish warehousing facilities	Aggregate and securitise	<u>Lead:</u> Bangladesh Bank; state-owned financial institution (IDCOL)	1.5 - 3 years
Readjust risk-weighting	Reduce (perceived) risk	<u>Lead:</u> BSEC <u>Support:</u> Bangladesh Bank; IDRA	1.5 - 3 years

Source: Vivid Economics

7 Conclusion and the role of Bangladesh Bank

This study aims to assess the potential for a domestic green bond market in Bangladesh, and to support Bangladesh Bank in helping this market achieve its potential. It identifies the potential for green bonds in Bangladesh and recommends next steps to be taken by Bangladesh Bank and other key stakeholders to foster the green bond market.

Through a series of structured interviews, we identified the key market barriers faced by domestic investors, international investors and potential issuers when considering participation in the green bond market. The interviews attempted to capture the perspective of the stakeholders with the highest potential to invest in or issue a green bond. Among domestic investors, this included scheduled banks and non-banking financial institutions such as asset managers and insurers. Among international investors, this covered large global banks and asset managers with dedicated green bond funds and heavy exposure to emerging markets, as well as multilateral development banks active in the region. Among issuers, this covered scheduled banks, non-banking financial institutions, corporates, development banks and sovereign entities.

Investors and issuers alike face a number of key barriers to investing in and issuing a green bond respectively. These barriers cover a wide range of concerns including the attractiveness of a green bond instrument relative to other financial products, the availability and quality of the underlying project portfolio and the capacity of service providers in the domestic market to deliver a green bond issuance. These activities to develop the green bond market are complementary to the steps needed to support the broader development of capital markets in Bangladesh through the Capital Market Development Action Plan, which will also be fundamental to developing and scaling up the green bond market in Bangladesh.

The first set of high priority actions, suggested to be implemented in the first 6 months, aim to build a strong commercial green project pipeline in Bangladesh and should be largely led by Bangladesh Bank. An immediate priority for Bangladesh Bank is to support the development and publication of a set of national guidelines and standards on green bonds covering both the technical specification of the instrument as well as eligible project activities. This must be developed in collaboration with BSEC, IDRA and the Ministry of Finance. The next foundation for green bond pipeline development is the identification of a list of priority projects, for which Bangladesh Bank can only take a supportive role as it will need to be aligned with both Bangladesh's NDC and broader development strategies.⁹² However, Bangladesh Bank can play a key role in communicating this list to investors (especially international) in partnership with SREDA and the Ministry of Finance. It may be that domestic institutions can rely on the support of multilateral development banks for investor-matching services.

Another set of high priority actions focus on reducing the risk associated with green bonds, though Bangladesh Bank is best positioned to play a supportive rather than leading role. The policy tools here center around a flagship demonstration issuance to kick-start the market and familiarize the investor and issuer community with green bonds. This could be achieved in one of three ways (or a combination thereof): (i) a strategic public issuance from a sovereign entity or state-owned financial institution, (ii) the integration of credit

⁹² It is likely some combination of the NDC-NAP Advisory Committee or its represented Ministries who is best placed to devise this list, most notably the Ministry of Environment and Forests and the Power Division, but the Local Government Engineering Department (LGED), Water Development Board, Bangladesh Inland Water Transport Authority (BIWTA), Ministry of Disaster Management, Road and Transport Highways Division, Ministry of Road Transport and Bridges are also implementing climate projects.

enhancement or (iii) cornerstone investment from either a multilateral development bank or state-owned financial institution. Any of these three actions will send strong signals to the market, reassuring issuers and investors and having a catalytic effect on future issuance. Bangladesh Bank should encourage such issuances but does not need to play a central role in structuring or managing the transaction. Rather, these efforts should be led by the Government of Bangladesh or development banks.

Medium priority actions, to be implemented in roughly 0.5-1.5 years' time, should be led by Bangladesh Bank as they involve fundamental changes to financial regulation and building long term market capacity. First, current regulation surrounding investment holdings and lending in foreign currencies should be reviewed and, if possible, changed so that domestic financial institutions can more easily fold FX-denominated instruments and hedge FX risk. This must be led by Bangladesh Bank in close cooperation with BSEC and IDRA. Alongside this, effort should be made to develop the domestic market for assurance services, green bond verification and FX hedging. Bangladesh Bank should take a lead role in designing and facilitating capacity building activities, in coordination with BSEC and IDRA.

Low priority actions, to be implemented in 1.5-3 years' time, focus on building the securitization market, and more ambitious changes in financial regulation and fiscal policy to improve the relative attractiveness of green bonds. Bangladesh Bank can spearhead efforts to stimulate domestic securitization though this first requires the development of a sufficiently 'deep' green loan market. Once the sector reaches this stage of maturity, Bangladesh Bank itself would be well placed to manage a warehousing facility given its current experience with the green refinancing program. If Bangladesh Bank and the Government of Bangladesh were keen to provide additional stimulus to the green bond market, they could also explore adjusting risk-weightings and tax incentives in favor of green bonds respectively. The former is a relatively new policy and should be considered carefully so as not to have adverse impacts on wider financial stability. The latter is used widely across the world but requires political will to be implemented.

Bangladesh Bank has an important and unique role to play to facilitate rapid and meaningful market development, though wider cooperation across the public sector is essential. As laid out above, there are clear steps for immediate action from Bangladesh Bank as well as longer term strategies to deepen Bangladesh's green financial sector. Nonetheless, at-scale green bond market development is unlikely to be achieved with isolated effort from a single institution. It will require a coordinated long-term approach across Bangladesh Bank, BSEC, IDRA, the Ministry of Finance and SREDA (among others), which may benefit from first establishing an agreed national process and responsible authority for co-ordinating and leading the development of Green Bonds in Bangladesh. Co-ordination efforts will also need to include building awareness and consensus across relevant government ministries and agencies and the integration of green bonds into their own strategies and plans, with the support of all four key actors involved in co-ordination efforts. Moreover, the approach to support green bond development will need to adapt over time as the green bond market (both domestic and international) develops.

Company profile

Vivid Economics is a leading strategic economics consultancy with global reach. We strive to create lasting value for our clients, both in government and the private sector, and for society at large.

We are a premier consultant in the policy-commerce interface and resource- and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organizations.

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