

4. Promoting Renewables/Low Carbon

Many governments have sought to support the development of the green economy, particularly in terms of support to renewable energy generation and energy efficiency. Part of this support has been through the provision of explicit subsidies, funded either by governments or customers, through mechanisms such as feed-in-tariffs. A parallel approach in many countries has been to address financing barriers to renewables generation. Often this has included developing new capabilities within existing NIBs; in other contexts, new NIBs specifically focused on this challenge have been established. Such institutions have invested directly across the capital spectrum, as well as providing guarantees; they have also issued green bonds in order to channel capital into green investment opportunities. In addition,

NIBs have looked to provide co-finance or partnership platforms, domestically or internationally with DFIs, MDBs, global or regional facilities and private sector institutions. NIBs' municipal reach has strongly supported decentralised and off-grid renewable energy investment.

4.1 INCREASING THE CAPABILITIES OF EXISTING INSTITUTIONS

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

Table 4 1: Summary of NIBs' experience in green finance

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

Source: CEPA analysis and NIB websites.

4.1.1 New institutions

Much of the rationale for creating new institutions has been to address specific market gaps. The GIB in the UK and the CEFC in Australia were two new institutions established by their respective governments to support national climate commitments, and these entities have, accordingly, focused on green finance and clean technologies. Both institutions were intended to support and demonstrate the viability of emerging technologies whilst delivering a positive return for taxpayers. Their activities were ultimately funded by government (or by recycling invested capital) and they did not have authority to access private capital markets³⁷.

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

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

(sometimes from investors new to the sector) due to the specialist nature of their expertise or the market's perception that government policy in relation to that sector was favourable.

Of course, there are also some interesting differences between the GIB and CEFC approaches. In the UK, the main conduit for subsidising clean energy projects has been through funding support mechanisms, ultimately paid for by customers, such as the Feed-in Tariff Scheme and Contracts for Difference³⁸, whilst GIB financing was on commercial terms – a key requirement for State Aid approval. In contrast, the CEFC has the ability to offer clean energy subsidies through concessional finance where it is considered necessary and justified in overcoming financial impediments and facilitating realisation of the project. Should the Australian Government explore options to privatise or divest the CEFC, as was the case with the GIB, the concessional nature of some of its financing activities would have an impact on the value that could be obtained through any future sale³⁹.

It is also notable that the CEFC has invested a more significant share of its portfolio in aggregated financing solutions for Small and Medium-Sized Enterprise (SMEs) through co-financing programs with major banks and other financiers. Commonly targeted at energy efficiency projects, where the scale of opportunities make it impractical and not cost effective for a wholesale financier to engage directly, the CEFC has used debt and equity to finance individual commercial property projects (as well as investing in existing or new funds) and provide some degree of concessional equipment finance (equipment loans, hire purchase or finance lease options) through intermediaries to consumers who choose more energy

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

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

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

efficient equipment⁴⁰. Like the CEFC, the GIB has also worked extensively in energy efficiency both in the residential and commercial space. The GIB combines both the provision of finance and technical assistance to homeowners, building owners, multifamily housing, residential contractors, commercial contractors, towns and cities, and other capital providers. The GIB did attempt to support similar financing vehicles but on a much smaller scale⁴¹. It is less clear that the GIB built the same level of expertise to mobilise energy efficiency projects as it did other clean energy technologies.

4.2 GREEN BONDS

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

Since the first issuance in 2007, the green bond market has been growing. The total issuance volume up to the first quarter of 2018 amounted to USD 377 billion, of which USD 160 billion was issued in 2017 alone⁴³. MDBs – specifically the EIB and World Bank – were the first to issue green bonds in 2007,

to raise funding for climate-related projects, while the first government agency to issue green bonds was the Norwegian Kommunalbanken in 2010. Corporate issuers followed in late 2013. While the market was initially dominated by MDBs, government agencies, and municipalities, companies and banks are increasingly issuing green bonds, accounting for the highest share of issuances in 2016⁴⁴.

Issues by sovereigns and sub-sovereign agencies account for 68 percent of the total value of outstanding bonds, with most labelled climate-aligned bonds being issued by supranationals, followed by the U.S. and China. In terms of issuers, the largest to date have been EIB (USD 22.6 billion), KfW (USD 12.8 billion), World Bank (USD 10.6 billion) and the Shanghai Pudong Development Bank (USD 7.6 billion). KfW is a major player, issuing seven bonds in 2017 alone⁴⁵.

In addition to KfW, several of the other case study NIBs have started issuing green bonds. Most of this has occurred rather recently, following the Paris Agreement, with many banks having issued a green bond for the first time in 2017 or 2018, as shown in Table 4.2.

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

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

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

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

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

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

Table 4.2: Summary of case study institutions' experience in green bonds

| Institution | First Issue | Issue Details | Use of Proceeds | Allocation Details |
|-------------|-------------|--|---|---|
| BNDES | 2017 | USD 1 billion, 4.75 percent p.a. | New/already existing wind/solar projects | Eight wind power generation projects in Brazil |
| CDB | 2017 | USD 500 million, five-year tenor, 2.75 percent coupon rate EUR 1 billion, four-year tenor, 0.375 percent p.a. | Projects in renewable energy, clean transportation and water resources management sectors along the Belt & Road route | Four/five projects of first allocations went to Chinese wind projects ⁴⁶ |
| CIB | n/a | n/a | n/a | n/a |
| DBJ | 2014 | 2014: EUR 250 million, three-year tenor, 0.25 percent coupon Issued Sustainability bonds each year since 2015 2018: EUR 700 million, seven-year maturity, 0.875 percent coupon | Existing or future projects of the sustainability framework ⁴⁷ | In 2017, 40 percent of DBJ Sustainability Bond financing went to energy efficient buildings, 40 percent to companies that were considered environmentally friendly and 20 percent to renewable energy projects. |
| DBSA | n/a | n/a | n/a | n/a |
| KfW | 2014 | 2014: two issuances, EUR 2.6 billion total volume 2015: five issuances, EUR 3.6 billion total volume 2016: four issuances, EUR 2.8 billion total volume 2017: seven issuances, EUR 3.7 billion total volume 2018: five issuances EUR1.6 billion in volume Latest bonds have a maturity of five to 10 years | KfW's 'Renewable Energies – Standard' Program, which supports the construction, extension or purchase of plants using renewable energy for producing (combined) electricity | In 2016, 86 percent of disbursements were used for wind projects. 79 percent of the project loans were used for German projects. |
| NIIF | n/a | n/a | n/a | n/a |
| PT SMI | 2018 | USD 59 million, two tranches with three-year and five-year maturity respectively | To finance sectors such as renewable energy, energy efficiency, clean transportation, sustainable water and waste management | Not yet allocated. |

Source: CEPA analysis and NIB websites.

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

⁴⁷ Which includes renewable energy and clean transportation projects.