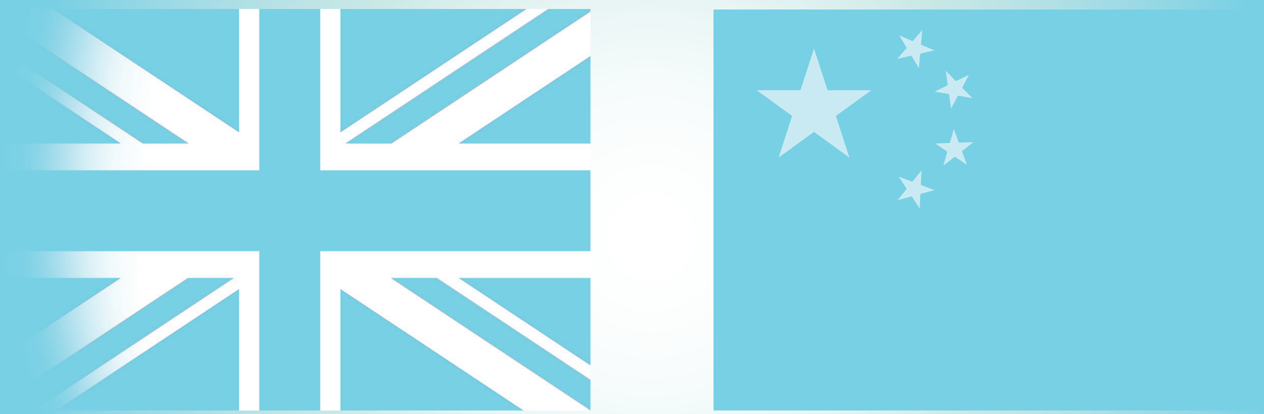
UK-CHINA COLLABORATION ON GROWING A GLOBAL GREEN BOND MARKET



Climate Bonds INITIATIVE

IISD International Institute for Sustainable Development

PROUD TO SUPPORT GREEN IS GREAT BRITAIN & NORTHERN IRELAND

Contents

UK-China collaboration on growing a global green bond market

China and the United Kingdom are increasingly taking action on green bonds and more broadly on developing green finance. These individual actions set the foundation for the two nations to collaborate on growing a global green bond market.

The UK has emerged as the global hub for green finance, green bond issuance and investment more specifically. Meanwhile in China, green finance is increasingly high on the policy and regulatory agenda. China has positioned itself as a global leader on green bond policy support.

Increased UK-China collaboration could help speed up the growth of the global green bond market and the green aspects of the financial system. A heightened level of cooperation between the two countries to share their respective experience with green bonds and harmonise specific actions in developing green bond markets would be of mutual benefit.

This report complements the China Roadmap 2016 series of joint discussion papers published in English and Mandarin by the Climate Bonds Initiative and the International Institute for Sustainable Development (IISD) in early 2016 on prospects for the Chinese green bond market:

- Green Bond Guidelines (Paper 1)
- Scaling up Issuance (Paper 2)
- Instruments and Incentives (Paper 3)

This 2016 series of discussion papers follow the "How to Grow Green Bonds in China" report [1] (March 2014) and the 'Growing a green bonds market in China: Key recommendations for policymakers in the context of China's changing financial landscape' report of March 2015 also prepared by Climate Bonds in partnership with the IISD.

Report by:
Weihui Dai (Lily), *Research Analyst, Climate Bonds Initiative*
Sean Kidney, *CEO, Climate Bonds Initiative*
Beate Sonerud, *Policy Analyst, Climate Bonds Initiative*

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1. Capitalising on the Low Carbon Transition

The investment opportunities in low carbon and climate resilient infrastructure are enormous

Goal: Meeting low-carbon and climate resilient infrastructure needs
The investment needs for infrastructure in the next decades are huge in both developed countries and emerging economies. Even without taking climate change mitigation and adaptation into account estimates reach USD 90 trillion to 2030. Ensuring that the infrastructure built is low-carbon raises the annual investment needs by 3–4% to USD6.2 trillion.[2] Climate adaptation needs add another significant amount of investment, which is estimated at USD 250–500 billion per year by 2050 for a 2-degree Celsius scenario.

Climate-friendly infrastructure represents investment opportunities across sectors
Meeting the challenge of climate-friendly infrastructure is about effectively using capital for investment and obtaining a competitive return. The wide range of differing types of climate mitigation and adaptation investment required means there are investable opportunities in amongst asset classes, sectors and industries including energy and transportation, efficiency, and climate-friendly building and design and a myriad of other sectors.

Green bonds provide a channel to mobilise institutional investors, meeting the low-carbon and climate resilient infrastructure needs
Traditional sources of capital for infrastructure investment (governments and commercial banks) are insufficient to meet capital requirement needs to 2030; institutional investors, particularly pension and sovereign wealth funds, are increasingly looked to as viable actors to fill these financing gaps.

Bonds, especially those financing infrastructure offer long-term maturities, making them a good fit with institutional investors' long-term liabilities. At the same time bond returns are relatively stable and predictable when compared to equity. This is another important feature for investors looking after beneficiaries' assets, such as retirees' savings or insurance policies – and these make up the largest pool of capital on the planet.

Bond financing is particularly suitable as a re-financing tool for low-carbon and climate resilient infrastructure projects post-construction. When a project enters operational phase, its risk-profile becomes more suitable for bond financing, enabling companies to access capital at lower cost. This factor is significant for low-carbon and climate resilient projects where, given the projects' high upfront costs, cost of capital has a significant impact on the project's economic viability.

2. An overview of the global green bond market

What is green bond?

'Labelled' green bonds are bonds with proceeds earmarked for green projects and designated accordingly. The green label makes it simpler for those institutional investors, who have made public climate change or financing commitments, to identify green investments. The label is a discovery tool that reduces friction in the investment process. Green bonds are designed to ensure that capital is raised at scale to meet the massive financing needs of the transition to a low-carbon and climate resilient economy.

The vast majority of green projects that green bonds finance focuses on are climate change mitigation or adaptation, but there is a small share of the market, which also funds green, non climate-related projects, such as public green spaces.

As of June 2016, the largest share of labelled green bonds has been issued for energy, building & industry (see Figure 1). [3]

Figure 1: 2016 green bond proceeds in different sectors

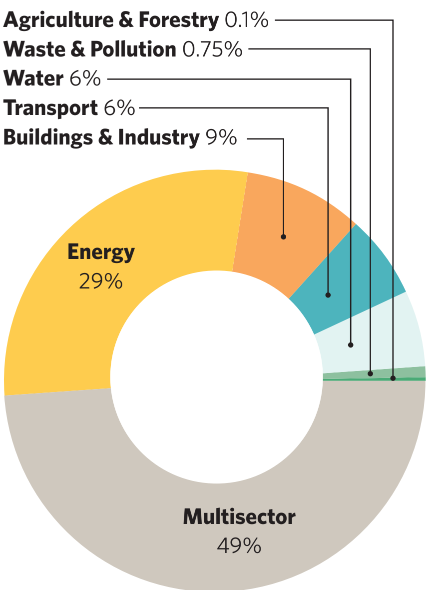
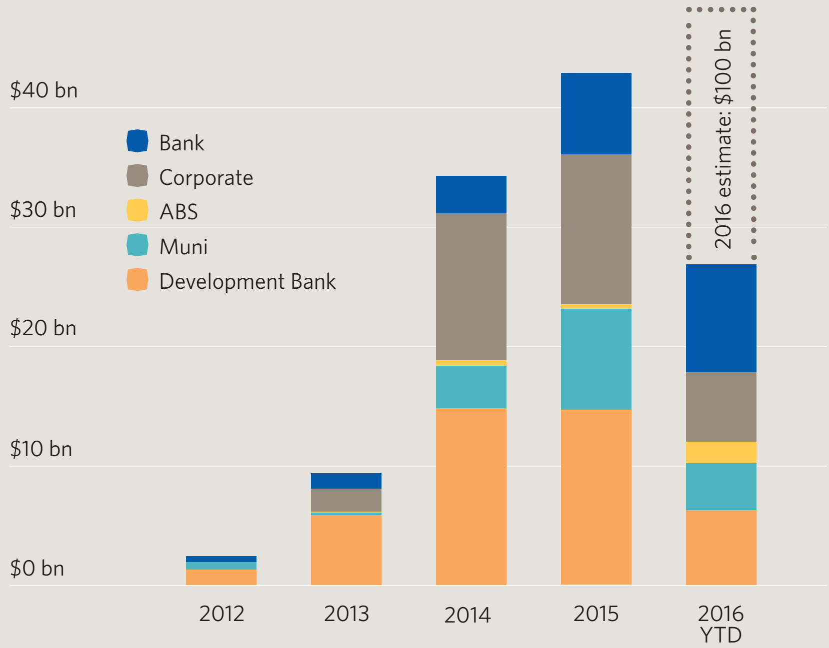


Figure 2: Corporate and muni bonds make up a growing proportion of issuance



Green bond market development

In 2007 the green bond market commenced off with AAA investment grade issuance from multilateral institutions European Investment Bank (EIB) and World Bank. The wider bond market started to react in 2013 when the first corporate green bonds were issued. The green bond market has grown rapidly since then (see Figure 2), with issuance increasing from 11 billion in 2013, to USD 36.8 billion in 2014, and USD 41.8 billion in 2015. As at June 2016, USD 35 billion green bonds have been issued. The growth in green bonds is expected to continue. SEB estimates that global green bond issuance will grow to USD 80 billion-USD 100 billion in 2016 with estimates from Moody's and HSBC slightly lower.

In addition to the labelled market, there is a much larger universe of bonds that finance climate mitigation and adaptation projects and developments that are not labelled as green.

As of June 2016, this additional unlabelled climate bond universe stood at $576bn (see Figure 3).The labelled segment of the climate-aligned bond market is growing faster than the unlabelled segment.

There is strong investor appetite for labelled green bonds

There are many indicators of the strong investor appetite for labelled green bonds:

- A high level of oversubscription compared with non-green issuances. For example, the May 2016 labelled green bond for green taxi in London from Chinese Zhejiang Geely in the international markets was almost 6 times oversubscribed. [4]
- Pledges from banks and insurance companies to invest a set amount into labelled green bonds [5] and investor statements supporting the growth of the labelled green bond market. [6]
- Specialised green bond funds are being launched. [7]

Box 1: How to issue a green bond – 5 steps

Step 1: Identify qualifying green projects & assets
Anyone who is creditworthy and have green assets/projects can issue a green bond. The key feature of a green bond is that the proceeds are used for projects or assets with positive climate impacts or environmental benefits. The Climate Bonds Standard provides guidance about what assets/projects can be qualified as green.

Step 2: Arrange an independent review
Credible independent review and verification could ensure the green credentials of the bond, and protect issuers' business reputation. Issuers can:

- Use Climate Bonds approved verifiers to review the bond and obtain certification under the international Climate Bonds Standard (Box 2).
- Or, get a reputable science organisation to review the green credentials of the bond.

Step 3: Tracking and reporting procedures
The proceeds from green bonds must be used only for specified green projects, so there must be systems in place to segregate green bond proceeds and keep track of their use. Also, robust monitoring procedures must be set up to ensure proceeds are never knowingly placed in non-green investments (such as carbon intensive projects) throughout the life of the green bond.

Step 4: Issuing green bond
Any type of bond in any currency can be a green bond – if assets comply. The usual steps apply here, as for any other conventional bond:

- If needed, seek required issuance approval from regulators. This applies in China.
- Structure the bond with an investment bank or advisor; get credit rating if needed.
- Market and price the green bond.

Step 5: Monitor use of proceeds and report annually
Confirm at least each year, through a public report, that the funds are still properly allocated to green projects. This can be done by a company auditor or in a letter signed by an authorised officer of the company. Most companies post a simple newsletter advising investors about green outcomes.

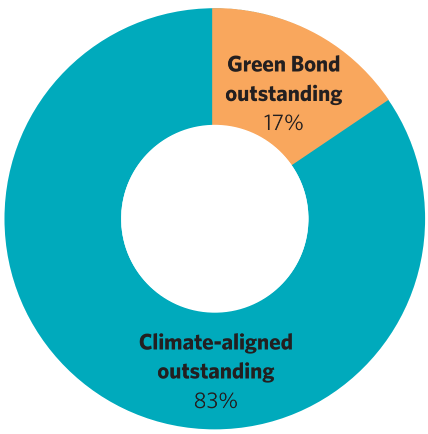
China is seen as a leading source of green bond market growth in the immediate future. China's central bank expects to see RMB 300 billion (USD 45.6 billion) of green bonds issued in 2016, which would be larger than the total global green bond issuance in 2015. China is the potential global leader in green bond issuance.

As of May 2016, China has issued USD 8.57 billion green bonds. In the first quarter of 2016, 50% of total green bond issuance in the global market originated from China.

Box 2: The international Climate Bonds Standard & Certification Scheme

The Climate Bonds Standard & Certification Scheme is the world's only certification scheme. The Scheme uses standardised approaches and has set up clear rules and procedures for verification and certification in terms of green definitions, use and management of proceeds, and reporting. It allows investors and governments to prioritise green investments with confidence that the funds are being used to deliver a low carbon and climate resilient economy. As of May 2016, certification has been used by USD 6 billion of green bonds.

Figure 3: Labelled and unlabelled climate bond universe



3. China and the UK are active players in the green bond market

China and the UK are taking action on green bonds individually, setting the foundation for their collaboration on developing green bonds globally.

The UK's action on green bonds

The UK has become a global hub for green finance initiatives

A wide range of pioneering green finance initiatives and organisations are based in London. These organisations that are setting the agenda both domestically and internationally on a range of green finance topics, including green bonds, climate disclosure and risk, integrated reporting, responsible investment and stress testing. [8]

London Stock Exchange is attracting international green bond issuance in different currencies

Green bonds from international issuers have been issued in the London markets in a range of currencies. In July 2015, the stock exchange established a range of dedicated 'green bond' segments to increase the visibility of the green bonds for investors. [9] As of January 2016, 10 green bonds are listed on the London Stock Exchange. [10]

The first RMB-denominated green bond from a Chinese issuer was issued in the London markets and listed on London Stock Exchange by the Agriculture Bank of China in October 2015. London Stock Exchange has also seen green bond listings from India's Yes Bank and Axis Bank; and multilateral development bank IFC has issued several green bonds in the London markets, including the first RMB-denominated and INR-denominated green bonds. [11] [12]

City of London Green Finance Initiative established in 2016

In January 2016, the City of London launched the Green Finance Initiative (GFI), aiming to mobilise the capital required to implement the Paris climate change agreement and the UN's Sustainable Development Goals.[13] GFI has a focus on improving the financing options for sustainable infrastructure projects and support the sector's development. [14]

The members include representation from banks, insurers, accountants, academics, regulators, and government. Through the Green Finance Initiative, London aims cement its position as a world leader in green finance and play a significant role in developing a financial system fully supporting the green transition of the economy.

China's actions on green bonds

2014: Green Finance Task Force established in collaboration with UNEP Inquiry

In 2014, the PBoC established a Green Finance Task Force [15], which spans regulators, government departments, financial market actors, and local and international experts working on the establishment of a green financial system in China.

Developing green bonds is one of the 14 detailed recommendations proposed by the task force.[16]

2015: Green Finance Committee established

Following the landmark report from the Green Finance Task Force, PBoC established a Green Finance Committee [17] (GFC) in April 2015. The GFC has set up a green bond working group to undertake research on green definitions, policy incentives, green ratings and third party certification of green bonds.

2015: PBoC and NDRC Release first official green bond guidelines

- PBoC has established regulations for green financial bonds, including guidance on, and requirements for green definitions, management and use of bond proceeds, and reporting.[18]

- China's macroeconomic management agency, the National Development & Reform Commission (NDRC) also set guidelines for green corporate bonds, providing a list of qualifying green projects and proposals for policy incentives. [19]

2016: Development of various green bonds guidelines has accelerated

- Shanghai Stock Exchange and Shenzhen Stock Exchange have set up rules for its green bond pilot program [20] for listed companies, which are similar to the requirements from PBoC.

- Other regulatory authorities such as the National Association of Financial Market Institutional Investors (NAFMII) and the China Securities Regulatory Commission (CSRC) are also working on green bond guidelines for other bond types in China.

- In May, Hong Kong Financial Services Development Council (FSDC) released its plan to developing Hong Kong as a leading centre for green finance, which includes the development of green bonds with strategic green bond issuance in particular. [21]

- In February, the PBoC announced the lifting of quotas for foreign investors in the domestic interbank market, creating a new potential for foreign capital to access the Chinese green bond space.

4. Actions for UK-China collaboration to lead the development of the green bond market

The UK and China can help address the challenges currently facing the green bond market

Currently, limited bankable green projects, the lack of commonly accepted standards of green credentials and, among issuers, the lack of awareness of the potential to issue green bonds are main challenges facing the global green bond market.

The UK has emerged as the global hub for green finance, and green bond issuance and investment more specifically. Meanwhile, China has positioned itself as a global leader on green bond policy support. With UK's leading position in global green financial market and China's strong policy momentum to support green bond market, increasing the level of UK-China collaboration could help address these challenges, leading the development of global green bond market. Figure 4 maps actions for UK-China collaboration on green bonds.

There is considerable potential to deepen the current activities in the UK and China activities on green bonds. The benefits of the collaboration between the two can be extended to other nations as it provides guidance and best practices for the development of a global green bond market.

Table 1: Mapping actions for increased UK-China collaboration on green bonds

Challenges	Actions
Limited bankable green projects The lack of a large pipeline of bankable green projects and limited clarity in terms of number and type of potential projects makes it difficult for investors to plan.	Scaling up cross-border green bond issuance and investment between UK and China Collaboration on translating high-level environmental and climate strategies into robust green project pipelines
Lack of a commonly accepted standard of green credentials Different approaches to evaluate green credentials of the bonds will reduce the comparability among green bonds in the market, increasing the transaction costs for investors and government to do due diligence. **A lack of awareness on the benefits of issuing and how to issue green bonds** The current awareness that green bonds can be a tool to refinance pools of existing green projects or assets, and that issuers have immediate potential to issue green bond may be poor, which hinder the short term market growth.	Collaboration between China's Green Finance Committee and London's Green Finance Initiative on market awareness activities Bilateral research collaboration between BoE and PBoC on the role of central banks in supporting green bond market development Cooperation between the Climate Bonds Initiative, PBoC and China's Green Finance Committee towards creating a globally harmonised set of green definitions

Action: Scaling up cross-border green bond issuance and investment between UK and China

London provides foundation for Chinese issuers to increase green bond issuance in the international markets

Institutional investors outside China, in the US and Europe in particular, are increasingly looking for investments with positive environmental impacts, and have demonstrated strong demand for green bonds, including those from Chinese based issuers, as evidenced by the demonstration issuance from ABC in London in 2015.

London is a particularly suitable location for Chinese issuers to issue green bonds in the international markets. More than half of offshore RMB trades have taken place in the UK. [22] The UK government has been, and will continue to work on policy developments for RMB internationalisation and green finance: the RMB bond issuance, the development of green finance, and the reinforcement of connections between the UK and Chinese financial markets have been recognised as key working areas by the Financial Services Trade and Investment Board (FSTIB) under the HM Treasury and the Financial Services Organisation under the UK Trade & Investment (UKTI).

And following the success of green bond issuance from Agriculture Bank of China at London Stock Exchange in 2015, more Chinese issuers of green bonds are expected to follow ABC's example. A specific focus on more Chinese issuance in the London markets would have a positive impact on market development and investor confidence. This provides foundation for China to increase green bond issuance in other markets including Singapore and New York.

UK-based investors can invest in green bonds in China's domestic bond markets

China is opening its bond market for foreign investors, including UK investors. In February 2016, PBoC eased the requirements for foreign institutions to invest in China's inter-bank bond market: more foreign institutions will be allowed to investment in the market; there is no limit of how much they can invest; the management process of the bonds has been simplified. [23]

With a more open bond market in China, international investors looking for green investments in China can invest directly in the domestic green bond market, as well as in Chinese sourced green bonds issued in the international markets.

UK-based investors could take the initiative to invest in Chinese green bond market, leading other international investors to provide capital for China to address climate change and environmental issues, similar to, but on a much larger scale of the Zhejiang Geely green bond funding of a low emission version of the iconic London black cab.

UK-based issuers could issue green bonds in China's domestic markets (green Panda bonds)
Non-Chinese issuers can issue RMB-denominated bonds in China's domestic market, called Panda bonds, if given regulatory approval. At present Panda bonds account for a marginal share of issuance in the Chinese market. There is currently some demand from international issuers to issue green panda bonds, and UK-based issuers could potentially also apply to issue panda bonds in the future. In the near term. However, more significant is the potential for UK investors to invest in green bonds from Chinese issuer.

The UK and China could jointly support other emerging economies in scaling green bond issuance and investment
Green bond issuance from China through the international financing centre of London demonstrates to other countries, especially emerging economies with limited domestic investor bases, that there is green investment demand available in the international market. This could encourage these emerging markets to develop green bonds, and to issue them in the international market. India, Mexico and Brazil are relevant emerging economies that are in the process of developing domestic green bond markets.

In emerging economies with more nascent domestic debt capital markets, like Kenya and Colombia, further foundational, general, bond market development might be required before green bonds can be issued at scale.[24] The UK and China could jointly take a more active supporting role in local debt capital market development in these economies, with the aim of establishing the necessary foundations for domestic green bond issuance over time.

Action: Translating high-level environmental and climate strategies into robust green project pipelines

Having a robust pipeline of green projects suitable for financing is a foundational action to enable scaling of green investment and the development of a liquid bond market. Lack of clarity about the green project pipeline among the investor community in terms of number and type of potential projects makes it difficult for investors to plan a staged commitment or incorporate increased exposure in asset allocation and portfolio design.

If there is a perception that there is only a small trickle of investable green bond projects, institutional investors will not devote resources to develop capacities required to invest in this space. Faced with limited investor capabilities, governments also become less certain there will be investors ready to provide capital for the green projects they are developing, creating a negative cycle.

Resolution of supply questions requires translating high-level targets and strategic priority investment areas, such as low-carbon transport and renewable energy, into specific projects.

To develop pipelines of green projects that are clear to investors, the UK and China could:

- Build on the proposed cooperative investment platform for energy and infrastructure to be established by China Development Bank (CDB) and the UK Trade & Investment (UKTI), focusing it on improving transparent pipeline development for green investments in infrastructure and energy.

- Relevant entities in China and the UK could join the international Green Infrastructure Investment Coalition (GIIC). The GIIC is a platform launched at COP21 that brings together investors, governments and development banks to help increase the flow of institutional investor capital to green infrastructure investments around the world.

The primary activity of the GIIC will be to bring stakeholders together and discuss government green investment plans, including specific pipelines being developed by individual agencies such as State energy and rail companies. In China, Beijing and Shanghai Finance Bureaus are entities that are considering joining GIIC. In the UK participants so far include the Principles for Responsible Investment, Legal & General Investment Managers, Standard Chartered Bank, London Stock Exchange, the City of London Green Finance Committee, Her Majesty's Treasury, Pricewaterhouse Coopers, EY and others.

Action: Collaboration between London's Green Finance Initiative and China's Green Finance Committee on market awareness activities

Closer two-way collaboration could also be established between London's Green Finance Initiative (GFI) and China's Green Finance Committee (GFC). This collaboration could focus on market awareness activities for companies, banks, investors and other market intermediaries, such as rating agencies, around encouraging green bond issuance and investment.

China's GCF and London's GFI could implement training and capacity building activities on green bonds through setting up joint schemes with existing professional bodies for investors, insurance, auditors and more, both at the national and international level. Green bonds characteristics are not at this stage sufficiently integrated in professional bodies' training.

Extend collaboration to green finance committees in other countries
As more countries develop similar green finance committees, both in developed and emerging economies, the collaboration between London's Green Finance Initiative and China's Green Finance Committee joint training and capacity building activities could be extended to other countries, which could also seek to implement green bonds market training and capacity building through existing professional bodies such as Financial Stability Board and OECD.

More broadly, London's Green Finance Initiative and China's Green Finance Committee set examples for other countries to follow by demonstration. They can provide a leading model of for other nations seeking to develop their green bonds market including establishing committees or initiatives with key groups of stakeholders as 'green finance champions'.

Action: Bilateral research collaboration between BoE and PBoC on the role of central banks in supporting green bond market development

The central banks of UK and China could benefit from closer bilateral collaboration on green bonds, in addition to their current collaboration as part of the G20 study group. The bilateral collaboration could take the form of a collaborative research program looking in particular at the potential role of central bank actions in supporting a green financial system. The bilateral collaboration on research could benefit both BoE and PBoC, as their individual actions to date have focused on different areas of green finance accordingly they bring experience from different areas to the table. For example, PBoC has experience in supporting green bond market development, while BoE has experience in assessing climate change risk at the financial system level.

The collaborative research program between BoE and PBoC could be the starting point for a broader UK-China green bond research network

Such a network could include world-leading universities from UK and China that have established expertise in these topics, such as the London School of Economics, Oxford and Cambridge in UK, and Central University of Finance and Economics, Chongyang Institute for Financial Studies under the Renmin University in China. Over time, a UK-China green bond research network could be expanded to a global green bond research network.[25]

At present, the GFC directed by PBoC is supporting Renmin University to establish postgraduate study programme of green finance. The UK and BoE could use this opportunity to establish joint study programmes with China, which could inculcate green finance philosophy and urgency into institutes and academia, and facilitate the joint research between BoE and PBoC.

Share findings from collaborative research with central banks in other countries

The best practices that emerge from the joint research program between the BoE and PBoC would also be relevant for central banks in other countries, and advise them to best use their central bank toolkits to take action on environmental issues, including climate change.

Action: Cooperation between the Climate Bonds Initiative, PBoC and China's Green Finance Committee towards creating a globally harmonised set of green definitions

Currently, the green bond working group under the GFC, which is directed by PBoC is conducting research on green definitions, third party certification, and green ratings. The first iteration of green definitions developed by GFC, i.e. the Green Bond Endorsed Project Catalogue, is endorsed by PBoC, Shanghai Stock Exchange and Shenzhen Stock Exchange. PBoC has also established green bond guidelines covering use and management of proceeds, external review and reporting.

International, the London-based Climate Bonds Initiative has developed the only global green bonds standard, used by issuers in Europe, the Americas, India and Australia.

The G20 Green Finance Study Group, led by PBOC and BoE, has recommended a move to global harmonisation of Standards. PBOC and China's Green Finance Committee can work with the Climate Bonds Initiative towards creating a globally harmonised set of green definitions.

The standardised approach will improve the comparability among green bonds, and reduce the costs of evaluating green credentials of each green bond, facilitating the decision-making process of investors to invest in green bonds. The collaboration could also help China keep aligned with international standards and practice of green bonds, which increase the potential to tap into international capital.

Appendix 1: The Climate Bonds Standard and Certification Scheme

The Climate Bonds Standard and Certification aims to provide the green bond market with the trust and assurance that it needs to achieve scale.

Standards allow low carbon investments to be prioritised

The Climate Bonds Standard and Certification Scheme allows investors, governments and other stakeholders to prioritise low carbon and climate resilient investments with confidence that the funds are being used to deliver a low carbon and climate resilient economy. A Climate Science Framework underpins the definitions of which projects and assets are consistent with a low carbon and climate resilient economy and therefore eligible for inclusion in a Certified Climate Bond.

Standards reduce transaction cost

Standards reduce transaction costs for investors and policymakers as the green bond market scales. They eliminate the need for investors and policymakers to evaluate the green credentials of each individual bond issuance. Standards can also make the issuance process easier for issuers, as they know clearly what green credentials investors are looking for before they put together their green bond.

Sector Criteria under the Climate Bonds Standard

The Climate Bonds Standard is made up of the overarching Climate Bonds Standard V2.0, which consists of a certification process, pre-issuance requirements and post-issuance requirements, and sector criteria. The sector criteria provide clear eligibility requirements for assets and projects in different sectors that can be used for Climate Bonds and Green Bonds. These criteria cover various sectors such as energy, buildings, transport, natural based assets, and water, which are reviewed at least annually to ensure they are up-to-date and include new findings and technologies.

Certification is available for green bonds that meet the requirements of the climate bonds standard

In order to receive the “Climate Bond Certified” stamp of approval, a prospective issuer of a green bond must appoint an approved 3rd party verifier, who will provide a verification statement that the bond meets the Climate Bonds Standard.

Certification is different from the second opinions in the green bond market. Under certification, the verifiers check the bond’s compliance against a set of established criteria rather than going through an ad hoc process to define the greenness of the bond.

The number of certified green bonds are growing

Per June 2016, 16 green bonds have been certified against the Climate Bonds Standard and Certification Scheme, while 15% (USD 4.48 billion) of the green bonds issued in 2016 have been certified. There are many more in the pipeline.

Appendix 2: Refinancing – the role of bonds in the capital pipeline

The largest share of bond issuance is used to refinance debt rather than providing initial debt to a new project. This is the role of bonds in the capital pipeline generally, and will therefore also be the main role of bonds in financing green projects.

Bonds can lower total project cost of capital

Refinancing through bond issuance allows companies to take on short term bank lending for the construction phase of a project and then pay the loan back by issuing bonds once the construction phase is over. As construction is usually the highest risk part of a project, bond issuance post-construction can provide a longer-term lower cost of capital.

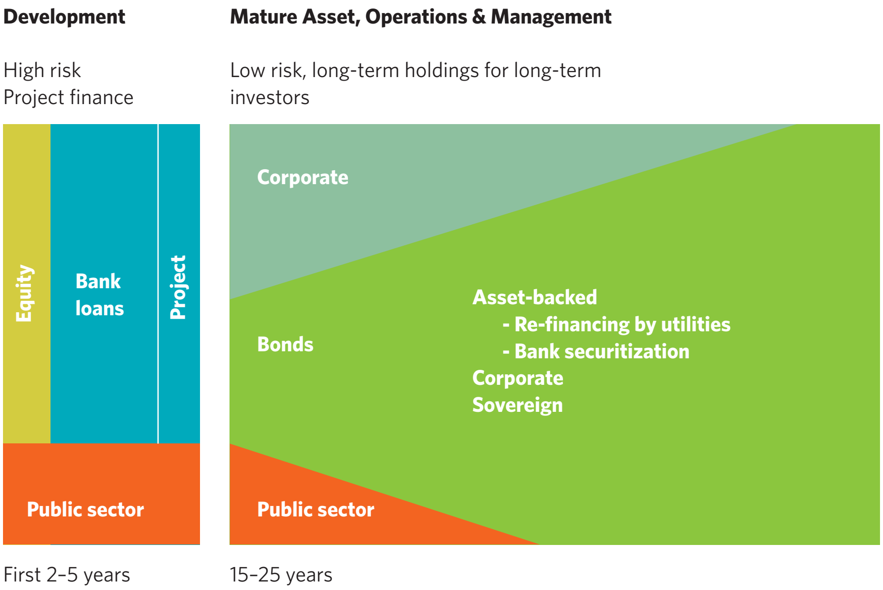
Bonds allow lenders to recycle funds to new projects

Moreover, given that few institutional investors are comfortable with taking on construction risk in a large part of their portfolio, this allows the banks (and the smaller pool of institutional investors with a higher risk appetite) to more quickly recycle their funds into new projects. Having an exit strategy gives banks an incentive to create an increased pipeline for these types of loans. The easier it is for loans to be offloaded, the more likely banks are to lend more and for longer terms.

Bonds are particularly suited for low-carbon projects

Refinancing and obtaining lower-cost debt is particularly attractive for low-carbon infrastructure assets as they have a particularly low operating risk post-construction compared to the construction phase. This means that the difference between the cost of capital for low-carbon projects before and after construction could be significant.

Figure 4: Bonds are mainly used to finance the lower risk, mature assets post-construction



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3. https://www.climatebonds.net/resources/publications/bonds-climate-change-2016
4. https://www.climatebonds.net/2016/05/gb-mkt-report-lots-new-issuers-corporate-bonds-french-reit-fdr-zhejiang-geely-fabege-hot
5. In 2015 public pledges came from Zurich Insurance, Deutsche Bank treasury, KfW, Barclays treasury and ACTIAM to build €1bn green bond portfolios.
6. For example, In Paris at COP21 investors representing $11.2 trillion AUM undertook to work with the Climate Bonds Initiative to grow a vibrant green bonds market. http://www.climatebonds.net/resources/press-releases/Climate-Bonds-welcomes-COP21-Paris-Agreement
7. Swedish insurance company SPP, SEB Asset Management, Nikko Asset Management, BlackRock, Calvert, Shelton Capital Management and State Street all manage green bond funds.
8. These organisations include the Climate Bonds Initiative, CDP, the Climate Disclosure Standards Board, the Carbon Tracker Initiative, the Climate Markets & Investment Association, the International Integrated Reporting Council, and the UN-backed Principles for Responsible Investment.
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11. http://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/
12. http://www.cityam.com/227160/green-bonds-london-leading-world-financing-global-low-carbon-shift
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14. This include improving the flow of projects generating green bonds in the UK and advocating for the development of a low-carbon infrastructure strategy; enhancing transparency and accreditation standards so that market participants can have greater confidence in green products; better informing and incentivising the market, including through educational materials and assessing potential market incentives. http://news.cityoflondon.gov.uk/city-launches-initiative-to-make-london-the--world-leader-in-green-finance
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The Climate Bonds Initiative is an investor focused not-for-profit, mobilizing debt capital markets for a rapid transition to a low-carbon and climate resilient economy.

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To find out more contact info@climatebonds.net

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