THE ROLE OF EXCHANGES IN ACCELERATING THE GROWTH OF THE GREEN BOND MARKET

Prepared by the Climate Bonds Initiative

Lead contributor to this report
1. Background: Growth of the green bond market

The growth of the global green bond market, albeit from a small base, has been a phenomenon in recent years. 2016 has just set a new record for global green bond issuance at USD $81bn (Figure 1). Underlying this growth has been strong institutional investor demand for financial instruments that both meet their short-term portfolio risk/return requirements, as well as address concerns about the risks of catastrophic climate change. Green bonds – with their vanilla bond characteristics, mostly investment-grade profiles, and climate benefits – fit this bill.

To make a material contribution to addressing climate change, and to continue to attract investors, the green bond market needs scale. Government support in the form of policies and sovereign issuance is vital to achieving this. However, larger investor participation is also dependent on market liquidity. From their unique position in financial markets, exchanges are critical actors for providing such market liquidity. Exchanges also provide regulated and transparent markets, which give investors the necessary confidence that the green bonds they buy can be traded. Exchanges, therefore, are institutions facilitating a robust green bond market development.

In 2016, exchanges and some regulators demonstrated leadership in growing the market: the launch of the Luxembourg Green Exchange (LGX), the establishment of the first green bond segment outside of Europe by the Mexican Stock Exchange (BMV), the announcement of the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) green bond pilot programmes, and the London Stock Exchange (LSE) as the first exchange to partner with the Climate Bonds Initiative and join the Green Infrastructure Investment Coalition.

In February 2017, LSE and Borsa Italiana issued guidance on ESG reporting, including recommendations on ESG disclosure for green bond issuers. In March 2017, the China Securities Regulatory Commission (CSRC) released green bond guidelines, encouraging the Shanghai Stock Exchange and Shenzhen Stock Exchange to set up green bond lists and develop green bond indices to further boost China’s green bond market.

In March 2017, Borsa Italiana established a list for green and social bonds on its markets.

In addition, the United Nations’ Sustainable Stock Exchanges (UN SSE) initiative has been increasingly involved in green finance. The UN SSE held its first event on green finance in 2015 at COP21 in Paris. The following year, they held an executive dialogue on green finance in Nairobi, alongside the UN Conference on Trade and Development’s (UNCTAD) World Investment Forum, and a forum on green finance in Marrakech running parallel to COP22. At the World Investment Forum in 2016, the UN SSE announced the launch of a new work stream on green finance in response to partner exchange interest. They will be launching guidelines for exchanges on facilitating green finance at COP23 in Bonn, Germany.

2. Green bonds and “climate-aligned” bonds listing

At the end of 2016, labelled green bonds outstanding totalled USD $81bn. However, this is a small segment of a larger market of bonds financing “climate-aligned” assets that do not carry a green label, which amounts to more than USD $694bn.4

44% (USD $308bn) of these unlabelled climate-aligned bonds are listed on exchanges, while the percentage of labelled green bonds is much higher, at 73% (USD $120bn) (Figure 2).

The unlabelled climate-aligned data demonstrates the potential for green bond market growth across the world. Exchanges can use this information to identify existing and potential issuers, fast-growing markets as well as large and new sectors for green bond issuance.

For example, according to the analysis presented in the State of the Market 2016 Report,5 the largest proportion of unlabelled climate-aligned bonds were issued by Chinese issuers – demonstrating the huge potential for a green bond market in China. As a result, stock exchanges such as the SSE, SZSE and Hong Kong Stock Exchange (HKEX) could capitalise on the opportunities of growing green bond issuance and listing from Chinese companies and financial institutions.

3. Why exchanges are important for green bond market growth

Exchanges can facilitate investor decisions by providing financial services such as guidance, training and tools for investors, exchanges can play an important role in facilitating investment in climate solutions. The development of the market can be accelerated by the creation of performance benchmarks such as indices, further assisting investors in identifying green finance investment opportunities.

Facilitate investor decisions

Exchanges provide issuers access to large potential investor base for the green bond market, including large institutional investors such as pension funds, mutual funds, and insurance companies as well as smaller and medium-sized institutions and even individuals. Thus, exchanges can support the mobilisation of investor demand for green investment. In addition, listing green bonds on exchanges gives issuers access to a deeper pool of investment capital. By receiving enhanced visibility on exchanges, green bonds issuers are exposed to a far wider segment of potential investors. Exchanges can also provide small and medium enterprises with access to green finance, as in the case of Borsa Italiana.

Provide access to a wide range of investors

Exchanges can also channel the liquidity of retail investors, as in the case of LSE’s ORB (Shanks green bond) and the World Bank’s sustainable bonds listed on Borsa Italiana. In addition, stock exchanges are situated at the central marketplaces, acting as facilitators between issuers and investors. They are the vital part of the ecosystem which enables overall green bond market growth both domestically and internationally.

Improve the liquidity of green bonds

Low liquidity is a barrier to investing in the bond market generally, and in the green bond market in particular. When liquidity is low, it is more difficult to match potential sellers with potential buyers resulting in a more time-consuming process and higher transaction costs. Greater use of “all-to-all” venues such as exchanges enhances liquidity by enabling greater market connectivity and more centralised liquidity than the over-the-counter (OTC) market.6

Exchanges can also channel the liquidity of retail investors, as in the case of LSE’s ORB (Shanks green bond) and the World Bank’s sustainable bonds listed on Borsa Italiana. In addition, stock exchanges are situated at the central marketplaces, acting as facilitators between issuers and investors. They are the vital part of the ecosystem which enables overall green bond market growth both domestically and internationally.

**Figure 1. Green bond market growth 2012-16**

<table>
<thead>
<tr>
<th>Year</th>
<th>Issued (USDbn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3bn</td>
</tr>
<tr>
<td>2013</td>
<td>11bn</td>
</tr>
<tr>
<td>2014</td>
<td>37bn</td>
</tr>
<tr>
<td>2015</td>
<td>43bn</td>
</tr>
<tr>
<td>2016</td>
<td>81bn</td>
</tr>
</tbody>
</table>

**Figure 2. A high proportion of labelled green bonds are listed on exchanges**

- Climate-aligned bonds
- Green bonds
- Labelled green bonds

<table>
<thead>
<tr>
<th>Listed</th>
<th>Unlisted</th>
</tr>
</thead>
<tbody>
<tr>
<td>72%</td>
<td>28%</td>
</tr>
</tbody>
</table>

**Table 1. Data source:** Climate Bonds Initiative, Bloomberg; by March 2017.
**4. How exchanges can accelerate the growth of the green bond market**

**Table 1. Exchanges with a dedicated green bond list/segment**

<table>
<thead>
<tr>
<th>Exchange</th>
<th>Type of dedicated list/segment</th>
<th>Launch date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oslo Stock Exchange</td>
<td>Green Bonds</td>
<td>January 2015</td>
</tr>
<tr>
<td>Stockholm Stock Exchange</td>
<td>Sustainable Bonds*</td>
<td>June 2015</td>
</tr>
<tr>
<td>London Stock Exchange</td>
<td>Green Bonds</td>
<td>July 2015</td>
</tr>
<tr>
<td>Mexico Stock Exchange</td>
<td>Green Bonds</td>
<td>August 2016</td>
</tr>
<tr>
<td>Luxembourg Stock Exchange</td>
<td>Green Bonds</td>
<td>September 2016</td>
</tr>
<tr>
<td>Borsa Italiana</td>
<td>Green and Social Bonds</td>
<td>March 2017</td>
</tr>
</tbody>
</table>

*Including bonds related to climate change mitigation, adaptation, enhancing or protecting biodiversity.

**Example: guidelines**

SSE and S2SE published guidelines for their green bonds pilot programmes in March and April 2016 respectively. These guidelines provide details on the definition of a "green project", eligibility of green bonds issuers, management of proceeds, reporting and disclosure, and the use of third party certification. LSE and Borsa Italiana have included disclosure guidelines for green bonds in their ESG reporting guide.

**Example: FSB**

The set of recommendations produced by the Financial Stability Board’s Task Force on Climate-Related Financial Disclosures could, for instance, be disseminated by exchanges to issuers and investors.

**Establish green bond lists/segments**

Creating a specialised green bond list or a dedicated segment enables investors to easily discover and invest in assets addressing climate change. They are useful in improving the visibility of green bonds to investors, and encouraging secondary market trading. This will facilitate green bonds issuers access to a deep pool of green capital domestically and internationally.

**Balancing robustness and simplicity**

While robust requirements for listing green bonds can enhance the quality of green assets, a key challenge will be for exchanges to promote robustness without placing an unnecessary burden on potential green bond issuers.

**Support green bond indices and ETFs**

A green bond list shows adherence to certain green criteria but it does not track the financial performance of the included bonds or identify environmental risks embedded in the financial market. Once sufficient market scale has been achieved, introducing one or more green bond indices could make it easier for investors to track the performance of green bonds, and compare returns with volatility with other investments.

**Implement market education and foster dialogue**

By providing educational resources and expert assistance, exchanges can assist issuers in understanding wider climate change risks and opportunities. Capacity building for issuers and other stakeholders can also be organised to support them in understanding market expectations and interpreting listing requirements. Exchanges can foster dialogue on green bonds between all stakeholders including regulators, issuers, investors, rating agencies, international standard-setting bodies, certifiers and auditors.

**Example: GIIC**

An example of such activity is the Green Infrastructure Investment Coalition (GIIC) India Forum held at London Stock Exchange (LSE). To date, other green bonds events have been held at both the LSE and LuxSE, connecting potential green bond issuers and investors. These events could be replicated by exchanges around the world.
The Role of Exchanges in Accelerating the Growth of the Green Bond Market

5. Why exchanges should act

Reputation and credibility enhancement
Brands and reputation are the most important assets of exchanges; this can be derived from their participation in the green bond market. By harnessing the green bond market to drive the transition to a low carbon economy, exchanges will be able to generate clear climate change credentials, enhancing their reputation and credibility with future green bond issuers and cementing their role in climate finance. Furthermore, applying a green bond product-specific approach will prepare them to continue to serve international capital markets as green finance scales up to occupy a larger share of the market.

Protect investor interests
While investors are driven to maximise their investment returns, they do so within a specific risk profile and while respecting the full range of their fiduciary duties. In recent years, environmental, social and governance (ESG) factors are increasingly being recognised as having a material impact on risk, as well as being a component of broader fiduciary duty. By facilitating greater transparency of green finance opportunities, stock exchanges can provide investors with additional investment tools with which to manage climate related investment risk, and meet their broader fiduciary duties.

Attracting green assets
By bringing together supply and demand and creating new market segments or sectors for green bonds, exchanges can facilitate investments in climate mitigation and adaptation projects while attracting more assets onto their platforms. The European Investment Bank launched and listed the first ever green bond on LuxSE in 2007. As of April 2017 LGX displays 112 green bonds.

The rise of the green bond market in emerging economies such as Brazil, India, Mexico and China, is driving cross-regional trades and demonstrates international opportunities for exchanges (Table 4).

6. Summary and actions

Exchanges have played, and will continue to play, an important role in growing the green bond market by facilitating liquidity, geographic diversity and market integrity. As more exchanges adopt the practices outlined in this paper, such as the creation of green bond lists/segments, collaboration between exchanges and harmonisation of standards will become particularly important to ensure that the market does not become fragmented.

Organisations such as the Climate Bonds Initiative, United Nations’ SSE, and the Sustainability Working Group of the World Federation of Exchanges will continue to promote collaboration and harmonisation by working with exchanges around the world.

Example: UN SSE
The UN Sustainable Stock Exchange initiative and the Sustainability Working Group of the World Federation of Exchanges have fostered collaboration by providing tools and guidance on promoting sustainability and transparency through ESG tools and metrics. In addition, the UN SSE initiative’s green finance work stream aims to help educate stock exchanges on opportunities and best practices in the promotion of green finance.

Appendix 1

Luxembourg Green Exchange social and sustainable window
After the successful launch of the Luxembourg Green Exchange (LGX) in September 2016, the Luxembourg Stock Exchange (LuxSE) has opened a window dedicated to social and sustainable (S&S) bonds. This new segment is integrated in LGX.

To be accepted to the S&S window of LGX, a similar process as for green bonds applies: once a social or sustainable bond is listed on one of LuxSE’s markets, an issuer can apply for LGX display. The issuer must commit to disclosing detailed information relating to planned use of proceeds, provide an ex-ante external opinion, as well as a post-issuance report presented regularly throughout the lifespan of the security.

Table 4. Examples of green bonds from emerging markets listed offshore

<table>
<thead>
<tr>
<th>Issuer</th>
<th>Date of Issue</th>
<th>Amount</th>
<th>Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRF SA</td>
<td>June 2015</td>
<td>EUR 500m (USD 564m)</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Fibria</td>
<td>Jan. 2017</td>
<td>USD 700m</td>
<td>Frankfurt/New York</td>
</tr>
<tr>
<td>Agricultural Bank of China</td>
<td>Oct. 2015</td>
<td>USD 995m in three tranches - CNY 600m (USD 89m) - USD 400m - USD 500m</td>
<td>London/London/London</td>
</tr>
<tr>
<td>London Taxi Company (Geely)</td>
<td>May 2016</td>
<td>USD 400m</td>
<td>Singapore</td>
</tr>
<tr>
<td>Bank of China</td>
<td>July 2016</td>
<td>USD 3.03bn in 5 tranches - CNY 1.15bn (USD 172m) - USD 1bn - USD 750m - USD 500m - EUR 500m (USD 555m)</td>
<td>Hong Kong/Luxembourg/Luxembourg/Luxembourg/Luxembourg</td>
</tr>
<tr>
<td>Banco Nacional de Costa Rica</td>
<td>Apr. 2016</td>
<td>USD 500m</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>Export-Import Bank India</td>
<td>Apr. 2015</td>
<td>USD 500m</td>
<td>Singapore</td>
</tr>
<tr>
<td>IDBI</td>
<td>Nov. 2015</td>
<td>USD 350m</td>
<td>Singapore</td>
</tr>
<tr>
<td>Axis Bank</td>
<td>June 2016</td>
<td>USD 500m</td>
<td>London/Singapore</td>
</tr>
<tr>
<td>NTPC</td>
<td>Aug. 2016</td>
<td>INR 20bn (USD 300m)</td>
<td>London/Singapore</td>
</tr>
<tr>
<td>Greenko</td>
<td>Aug. 2016</td>
<td>USD 500m</td>
<td>Singapore</td>
</tr>
<tr>
<td>Nacional Financiera</td>
<td>Nov. 2015</td>
<td>USD 500m</td>
<td>Dublin</td>
</tr>
<tr>
<td>Mexico City Airport</td>
<td>Sept. 2016</td>
<td>USD 2bn</td>
<td>Singapore</td>
</tr>
</tbody>
</table>

Note
1. This figure includes all green bonds aligned with international definitions. By taking into account bonds aligned with the People’s Bank of China’s green categories but not fitting the international definitions, the number would reach USD 20bn.
2. LGX is the Luxembourg Green Exchange, a window where equities, bonds, and other securities are traded.
Climate Bonds Initiative can assist exchanges in harnessing the green bond market. Partnering with CBI’s strong, visible and independent brand helps exchanges to generate clear climate change credentials, enhance their reputation and credibility, and in so doing, attract more assets onto their respective platforms.

Climate Bonds Initiative’s Partner-only Services for Exchanges

**ADVISORY SERVICES**
- Green Bond Strategies & Requirements
- Guidance for Issuers
- Market Education & Awareness
- Market Dialogue

**RESEARCH & DATA SERVICES**
- Co-branded Research
- Green Bond List/Segment Maintenance
- Green Bonds & Climate-aligned Data
- Exchange League Tables

Climate Bonds Initiative’s Exchange Partners:
- London Stock Exchange
- Luxembourg Stock Exchange

Report prepared by the Climate Bonds Initiative. Written by Alan Xiangrui Meng and Bridget Boulle with help from Diletta Giuliani. We would like to thank Chiara Caprioli, Zuzanna Reda-Jakima, Anthony Miller, Tiffany Grabski, Alba Aguilar and Edwin Wiest for their input.

Disclaimer: This report does not constitute investment advice and the Climate Bonds Initiative is not an investment adviser. Neither the Climate Bonds Initiative nor the Luxembourg Green Exchange is advising on the merits or otherwise of any bond or investment. A decision to invest in anything is solely yours. The authors accept no liability of any kind for investments anyone makes, nor for investments made by third parties.