



April 4, 2017

## Green Bonds

### Green is the new black

**Globally, 2016 was a milestone year for green bonds with \$82B issued, a significant jump from the \$37B issued in 2015 and \$33B in 2014. Momentum has continued in 2017, with \$20B of green bond issuance in Q1/17, bringing aggregate issuance to \$190B+ since the first issue in 2007.**

**Green is the new black.** Several global initiatives are mobilizing stakeholders to adopt an environmentally friendly agenda. At the same time, governments are increasingly looking to infrastructure investment to spur economic growth and improve the climate, and corporations are seeing more opportunity and strong business cases in green. These factors have created strong momentum for the green bond market, which is quickly becoming scaled in terms of: (i) breadth – of issuers, projects, credit ratings, and terms to maturity, and (ii) depth – repeat issuers, larger tranches, and a growing base of institutional investors. In pop culture terms, it appears that “green is the new black.”

**Global green bond issuance will be driven by the nearly \$500B per year of investment that will be required to achieve greenhouse gas emissions targets laid out in the 2015 Paris Agreement.** At the recent Climate Bonds Initiative (CBI) conference held in March 2017, estimates for green bond issuance in 2017 ranged from \$123B (Bloomberg) to more than \$200B (Moody's). The CBI says issuance could swell to \$1T per year by 2020, with green issuance out of China leading the way.

**In Canada, we think growth in green bond issuance will be supported by the Federal Government's aggressive green agenda.** This includes: (i) imposing carbon pricing beginning in 2018; (ii) mandating Transport Canada to develop greenhouse gas regulations in the marine, rail, aviation, and vehicle sectors; and (iii) targeting 90% of electricity generation from non-emitting sources by 2030. **With this agenda, we think Canada could soon join the sovereign green bond club, currently occupied by Poland and France (both recently issuing sovereign green bonds).**

**The appetite of institutional investors for green bonds has grown substantially in recent years.** For instance, investors with “green” mandates represented more than 90% of the Province of Quebec's recent green bond issue. As per Bloomberg data, more than 900 unique institutional investors globally have invested in “labeled green bonds”.

**Standardization and green “scoring” can make the green bond investing process more efficient for investors.** Following on efforts by CBI, The Green Bond Principles, and others, Moody's and S&P have developed methodologies to score bonds on “greenness”, a more refined approach than simply applying a “green” label to those that suit. These ratings should help investors to better understand and compare greenness across investment alternatives, with some interesting potential implications (e.g., will investors pay more for greener projects, all else equal?).

**For Required Conflicts Disclosures, see page 40.**

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 Priced as of prior trading day's market close, EST (unless otherwise noted).

## Industry Note



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## Green is the new black

### A look at the market today and record issuance in 2016

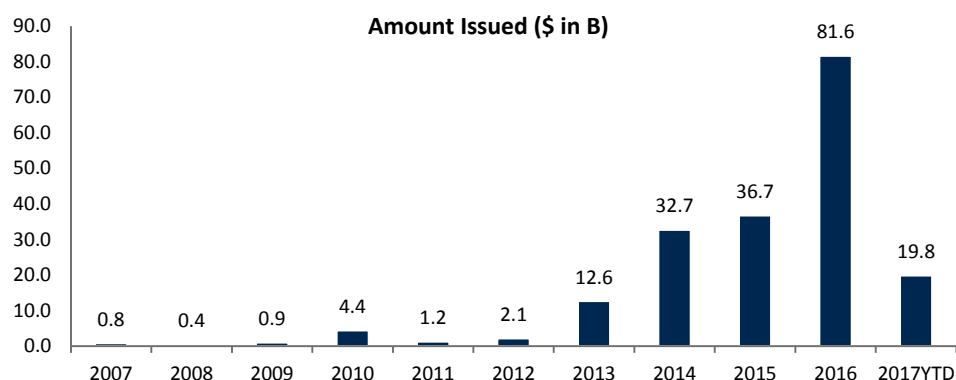
#### Record green bond issuance in 2016

**Green bond momentum: Globally, 2016 was a significant year for green bonds with \$81.6B of issuance, more than doubling the size of the green bond market.** This was a substantial jump from the \$36.7B issued in 2015 and \$32.7B in 2014. Momentum has continued early in 2017, with \$19.8B of green bonds issued in Q1/17, bringing aggregate issuance to \$190B+ since the first issue in 2007.

**Several global initiatives are mobilizing stakeholders to join in climate improvement efforts at the same time that governments are increasingly looking to infrastructure investment to spur economic growth and improve climate outcomes.** These factors, along with the accelerated growth in green investment we are seeing, have created strong momentum for the green bond market, which is quickly becoming scaled with meaningful: (i) breadth – of issuers, projects, credit ratings and term to maturity; and (ii) depth – repeat issuers, larger bond issues, and a growing base of institutional investors. In pop culture terms, it appears that “green is the new black.”

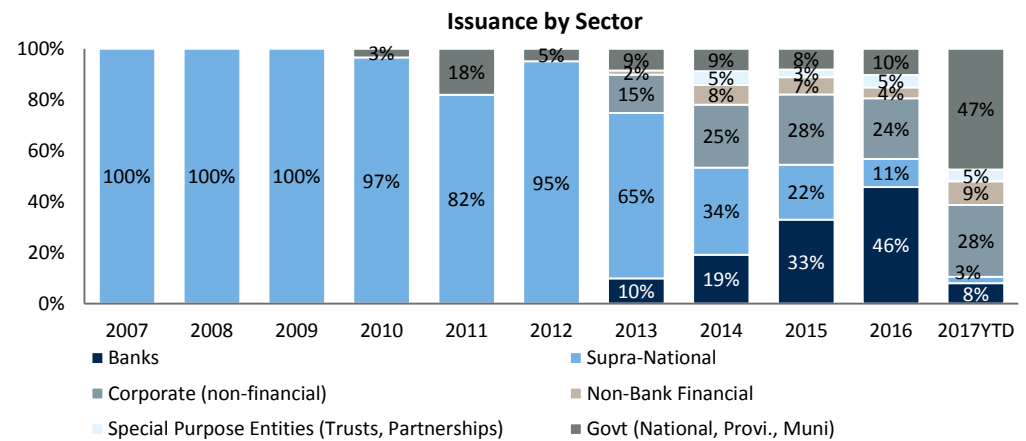
**Prior to 2013, green bonds were issued predominantly as AAA-rated securities by supra-nationals, but the market has expanded rapidly since in terms of issuer diversity, number of issuers, and investor involvement.** From 2007 through 2013, 65–100% of annual green bond issuance was done by supra-nationals, with the rest from municipal/provincial/national governments. In 2016, supra-nationals accounted for just 11% of total issuance, while banks represented 46% of 2016 issuance, and the remaining 43% was split among non-bank financials, corporate (non-financial), special purpose entities (trusts, partnerships), and various government agencies. Exhibit 2 shows the increasingly diverse mix of issuance.

#### Exhibit 1: Growing momentum in green bond issuance



Source: Bloomberg

Exhibit 2: Increasing diversity, too



Source: Bloomberg

### The green bond market continues to diversify...

**Supra-nationals were pioneers, but corporate issuance has grown quickly.** Green bonds were first issued in 2007 by the European Investment Bank (EIB), and until 2012, green bonds have largely been the domain of the supranational issuers (World Bank, European Investment Bank) and governments (federal and provincial governments, local agencies). As the market evolved during 2013–16, issuer types expanded meaningfully, with commercial banks, non-bank financial (i.e., REITs), and corporate (non-financial) accounting for sizable percentage of total issuance.

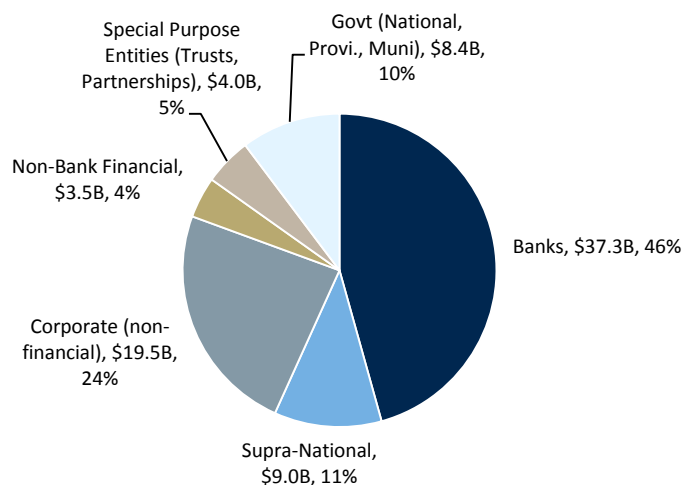
**China goes green.** Green bond issuance from China increased from less than \$100MM (0.2% of total issuance) in 2015 to \$31.6B in 2016 (accounting for 39% of global issuance in 2016). In December 2015, the People's Bank of China published regulations for green bond issuance in the China interbank market (China's bond market). Soon after, National Development and Reform Commission (NDRC), a macroeconomic management agency under the Chinese State Council, published green bond guidelines. These changes drove a sizable increase in CNY-denominated green bond issuance, led by large issuers such as Shanghai Pudong Development Bank and Industrial Bank and Bank of Communications. The largest corporate issuer in 2016 was Shanghai Pudong Development Bank Co Ltd, which issued \$7.6B across three tranches denominated in CNY. See Exhibit 3 for the largest corporate green bond issuers in 2016.

**One more thing: iGreen.** In 2016, Apple issued \$1.5B in green bonds dedicated to financing clean energy projects across its global business operations, the largest green bond issued by a U.S. corporation. The company noted that the proceeds from the green bond sales will be used to finance renewable energy, energy storage and energy efficiency projects, green buildings, and resource conservation efforts.

**Exhibit 3: Commercial banks and corporates issued \$47B in 2016, 59% of green issuance**
*(US\$ in MM)*

Issuer	AMT Issued (\$ in MM)	Issuer Type	% of Total 2016 Issuance
Shanghai Pudong Development Bank Co Ltd	7,587	Commercial Bank	9%
Industrial Bank Co Ltd	7,414	Commercial Bank	9%
Bank of Communications Co Ltd	4,357	Commercial Bank	5%
State Grid Corp of China	2,968	Corporate (non-financial)	4%
Bank of China Ltd/Luxembourg	2,805	Commercial Bank	3%
Kreditanstalt fuer Wiederaufbau	2,739	Supra-National	3%
Southern Power Co	2,145	Corporate (non-financial)	3%
Mexico City Airport Trust	2,000	Special Purpose Entity	2%
Electricite de France SA	1,932	Corporate (non-financial)	2%
Iberdrola International BV	1,917	Corporate (non-financial)	2%
TenneT Holding BV	1,672	Corporate (non-financial)	2%
Apple Inc	1,500	Corporate (non-financial)	2%
Nederlandse Waterschapsbank NV	1,500	Commercial Bank	2%
China Three Gorges Corp	1,479	Corporate (non-financial)	2%
Jiangxi Bank Co Ltd	1,199	Commercial Bank	1%
Bank of Qingdao Co Ltd	1,193	Commercial Bank	1%
Bank of America Corp	1,000	Commercial Bank	1%
Iberdrola Finanzas SA	806	Corporate (non-financial)	1%
BAIC Motor Corp Ltd	769	Corporate (non-financial)	1%
China Energy Conservation & Environmental Protection Group	753	Corporate (non-financial)	1%
<b>Top 20 Corporate Issuers - 2016</b>	<b>47,733</b>		<b>58%</b>

Source: Bloomberg

**Exhibit 4: 2016 full-year issuance by issuer type**











Source: Bloomberg

### Canadian green bond market is also growing

**2016 saw two green bond issues in the Canadian market.** (i) The Province of Ontario issued its second green bond in January 2016 with a C\$750MM 7-year, which was subsequently re-opened for an additional C\$800MM in January 2017 – use of proceeds referenced the Green Bond framework, eligible Green Bond projects and specific uses. (ii) The European Investment Bank (EIB) issued C\$500MM green bond via private placement (1.125% coupon and 2021 maturity). This was the second C\$ green bond offering from EIB.

**Earlier this year, Province of Quebec also launched its Green Bond program,** with an inaugural C\$500MM issue with a 7-year term and a 1.65% coupon. Quebec's green bond program is based on the Green Bond Principles—CICERO has issued an independent opinion on the framework and the selection process of Quebec's Green Bond program, and it has given its highest rating to the program (dark green shading). Please see Exhibit 5 for a list of Canadian green bonds issued to date.

Exhibit 5: Canadian dollar green bond issuance demonstrates that a wide variety of issuers and project types can be supported

									
Issue Date	Mar 28, 2014	Oct 2, 2014	Jul 2, 2014	Jul 24, 2015	Oct 27, 2015	Jan 22, 2016	Sept 9, 2016	Jan 26, 2017	Feb 24, 2017
Rating	AA/Aa1/-	AA(low)/Aa2/A+	AAA	-/-/-	AAA/Aaa/AAA	AA(L)/Aa2/AA-	AAA/Aaa/AAA	AA(L)/Aa2/AA-	A(H)/Aa2/A+
Term	3 years	4 years	32 years	10 years	5 years	7 years	5 years	6 years	5 years
Amount	C\$500 million	C\$500 million	C\$232 million	C\$225 million	C\$500 million	C\$750 million	C\$500 million	C\$800 million	C\$500 million
Maturity	Apr 3, 2017	Oct 9, 2018	Oct 2, 2046	Jul 22, 2025	Nov 5, 2020	Jan 27, 2023	Sept 16, 2021	Jan 27, 2023	Mar 3, 2022
Coupon	1.824%	1.75%	4.394%	3.400%	1.250%	1.950%	1.125%	1.95%	1.65%
Highlights	<ul style="list-style-type: none"> <li>TD Bank issued Canada's first Green Bond in March 2014 pricing a C\$500 million 3 year transaction</li> <li>Issued simultaneously with a standard 5-year deposit note offering</li> <li>The offering was a general obligation bond, with proceeds being used to fund green initiatives</li> <li>Included broad stated definitions of Green Bond</li> <li>TD Green Bond will fund new projects or refinance continuing business operations</li> <li>No up-front external review of green credentials, and very broad use of proceeds criteria</li> </ul>	<ul style="list-style-type: none"> <li>Province of Ontario issued a C\$500 million 4 year Global Green Bond</li> <li>Proceeds will be used to help finance transit and other environmentally friendly projects across the province</li> <li>The bond will rank pari-passu with Ontario's other bonds, and ensure repayment through the province's revenue fund and not through the revenues of the project</li> <li>CICERO provided an independent opinion on the province's Green Bond Framework</li> </ul>	<ul style="list-style-type: none"> <li>Province of BC's North Island Hospitals Project issued Canada's first infrastructure Green Bond domestically by pricing a C\$232 million 32 year transaction</li> <li>Second opinion assessed by Altus Group confirming that they achieved LEED Gold certification</li> <li>Met energy and greenhouse gas targets as per ASHRAE 90.1 standard</li> </ul>	<ul style="list-style-type: none"> <li>Proceeds raised by the 500 Georgia Office Partnership, the joint venture of TELUS and Westbank building TELUS Garden, will be primarily used to retire short-term construction financing for the office tower</li> <li>It is the first time in North America green mortgage bonds have been used to support real estate financing</li> </ul>	<ul style="list-style-type: none"> <li>EIB priced their inaugural CAD green bond transaction</li> <li>First green bond transaction in Canada by a European SSA</li> </ul>	<ul style="list-style-type: none"> <li>Province of Ontario issued C\$750 million 7-year Global Green Bond</li> <li>This was the second green bond transaction for the province</li> <li>Investors with Green mandates and/or UN PRI signatories represented 70% of issue</li> </ul>	<ul style="list-style-type: none"> <li>EIB successfully priced their second green bond issue in Canada</li> </ul>	<ul style="list-style-type: none"> <li>Province of Ontario re-opened their 1.95% Jan 2023 bonds</li> <li>Marked the 3<sup>rd</sup> and largest Green Bond from the Province of Ontario</li> </ul>	<ul style="list-style-type: none"> <li>Marked Quebec's inaugural Green Bond offering</li> <li>Marked the second government issuer of Green Bonds in the Canadian market</li> <li>Investors with Green mandates and/or UN PRI signatories represented over 90% of issue</li> </ul>

Source: Company reports, Bloomberg, RBC Capital Markets

### Renewable energy and energy efficient projects have been the big beneficiaries

Although the selection criteria for green projects are broad, renewable energy and energy efficient projects have attracted significant investment from green bond proceeds. A list of the new issuers in 2016 and the largest issuers since the green bond market's inception in 2007 is presented in the exhibits below. A full list of labeled green bonds issued is in the Appendix.

**Exhibit 6: Supra-nationals have provided the building blocks...**
**Top 10 Green Bond Issuers Since 2007**

Issuer	AMT Issued (\$ in MM)	Issuer Type	% of Total
European Investment Bank	19,845	Supra-National	10%
Kreditanstalt fuer Wiederaufbau	11,045	Supra-National	6%
International Bank for Reconstruction & Development	9,649	Supra-National	5%
Shanghai Pudong Development Bank Co Ltd	7,587	Commercial Bank	4%
French Republic Government Bond OAT	7,548	Sovereign	4%
Industrial Bank Co Ltd	7,414	Commercial Bank	4%
International Finance Corp	5,392	Supra-National	3%
Electricite de France SA	5,309	Utilities / Alt. Energy	3%
Engie SA	5,047	Utilities / Alt. Energy	3%
Bank of Communications Co Ltd	4,357	Commercial Bank	2%
<b>Total 10 Issuers</b>	<b>83,194</b>		<b>43%</b>
Other Issuers	110,007		57%
<b>Total 'labeled' Green Bond Issuance</b>	<b>193,201</b>		<b>100%</b>

Source: Bloomberg

**Exhibit 7: ...but there were more than 70 new green bond issuers in 2016**

Issuer	AMT Issued (\$ in MM)	Issuer Type
Shanghai Pudong Development Bank Co Ltd	7,587	Commercial Bank
Industrial Bank Co Ltd	7,414	Commercial Bank
Bank of Communications Co Ltd	4,357	Commercial Bank
State Grid Corp of China	2,968	Utilities / Alt. Energy
Bank of China Ltd/Luxembourg	2,805	Commercial Bank
Mexico City Airport Trust	2,000	Special Purpose Entities (Trusts, Partnerships)
Apple Inc	1,500	Industrial
China Three Gorges Corp	1,479	Industrial
Agricultural Development Bank of China	1,440	Muni / City Agency
Jiangxi Bank Co Ltd	1,199	Commercial Bank
Bank of Qingdao Co Ltd	1,193	Commercial Bank
Kommuninvest i Sverige AB	1,160	Muni / City Agency
SNCF Reseau	984	Muni / City Agency
Iberdrola Finanzas SA	806	Utilities / Alt. Energy
Republic of Poland Government International Bond	780	Govt (National)
BAIC Motor Corp Ltd	769	Industrial
China Energy Conservation & Environmental Protection Group	753	Industrial
MTR Corp CI Ltd	600	Special Purpose Entities (Trusts, Partnerships)
Deutsche Kreditbank AG	570	Commercial Bank
Fonciere Des Regions	561	Non-Bank Financial
<b>Top 20 First Time Issuers - 2016</b>	<b>40,923</b>	
Other Issuers	13,268	
<b>Total Issuance from First Time Issuer</b>	<b>54,191</b>	

Source: Bloomberg

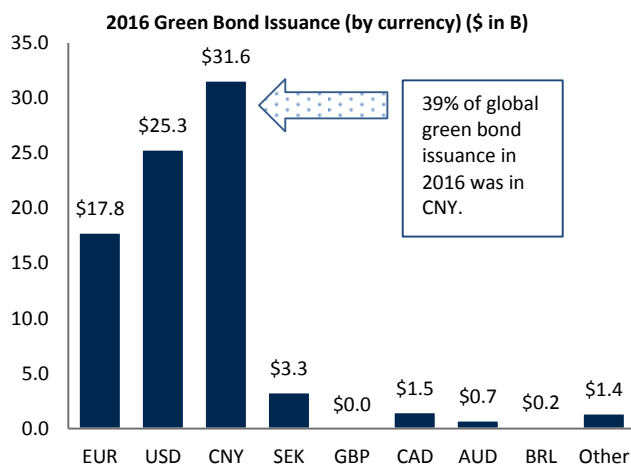
### By currency, CNY bonds dominated 2016 issuance, reflecting the sizeable issuance from China-based commercial banks

As noted above, green bond issuance from China increased from less than \$100MM (0.2% of total issuance) in 2015 to \$31.6B in 2016, accounting for 39% of global issuance in 2016. Despite strong 2016 issuance from China-based commercial banks, the majority of green bonds outstanding are Euro-denominated (35% of total bonds outstanding), followed by USD (29%). CNY-denominated green bonds now account for roughly 20% of the total green bond market. Primarily, the heavy Euro base of issuance reflects the fact that the biggest green bond issuers at the inception of the market have been European-based supra-nationals.

### The European Investment Bank has been the largest green issuer to date

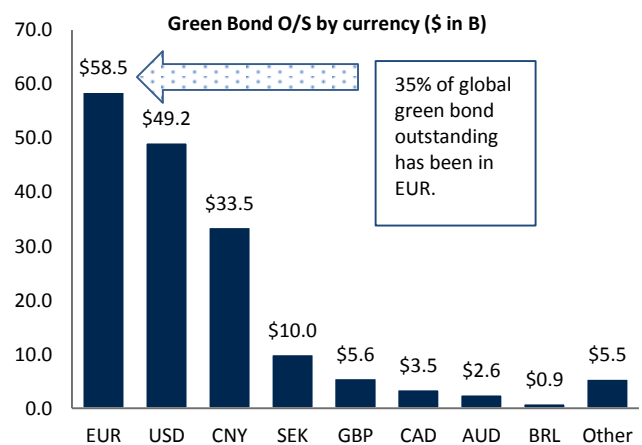
European Investment Bank (“EIB”) has been the largest issuer of green bonds across 31 issues, bringing the total outstanding for EIB to \$19.8B. International Bank for Reconstruction & Development (“IBRD”), a World Bank Group member institution, has 106 issues with ~\$9.6B of green bonds outstanding.

Exhibit 8: CNY issuance accounted for ~39% of 2016 issuance



Source: Bloomberg

Exhibit 9: Amount O/S by currency (all time)



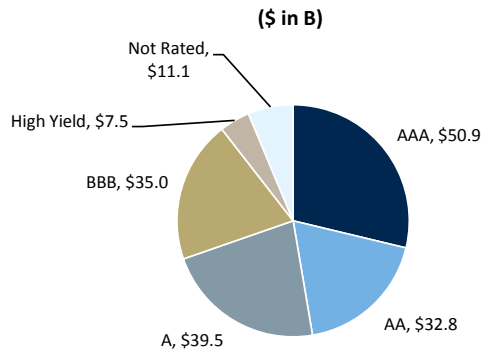
Source: Bloomberg

### Green bonds have been issued predominantly as AAA-rated securities

The proportion has declined from last year, as private corporations have been more meaningful issuers. As shown in Exhibit 10 below, roughly 30% of all green bonds outstanding are AAA-rated. The greater participation of corporate issuers is reflected in a higher percentage of issuance in 2016 rated below AAA/AA, including several high yield green bonds. In 2016, ~38% of green bond issues were rated AAA and AA, while A and BBB rated issues represented 54% of issuance, the latter well above the 36% mix in 2015.

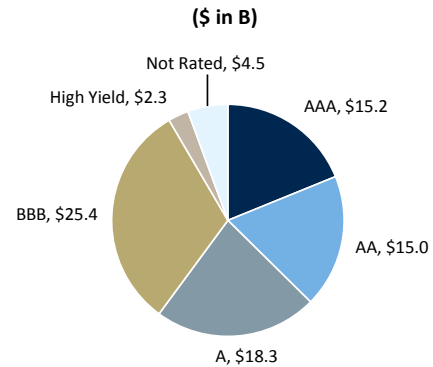


Exhibit 10: Green bond market by credit ratings



Source: Bloomberg, Moody's, S&P, DBRS, Shanghai Brilliance Credit Rating

Exhibit 11: Green bond issuance by ratings (2016)

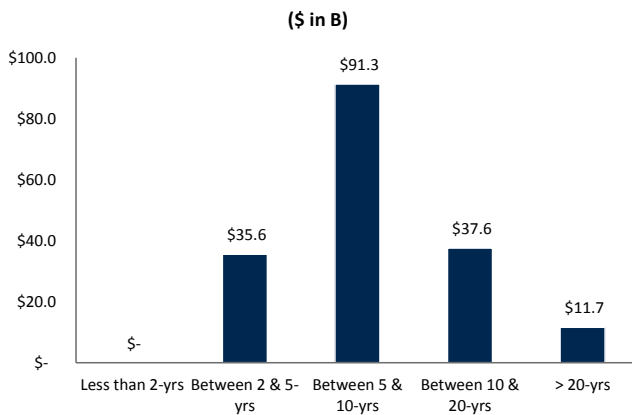


Source: Bloomberg, Moody's, S&P, DBRS, Shanghai Brilliance Credit Rating

### Short- and medium-term offerings account for the majority of green bond issuance

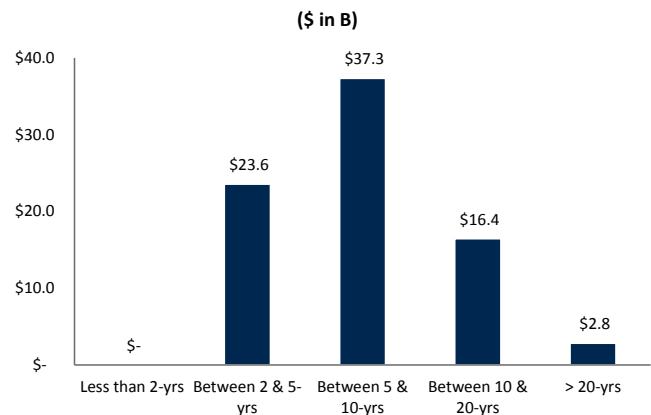
In 2016, approximately 76% of green bonds were issued with a tenor of 10-years or shorter, with most (47% of total) being between 5 and 10 years. 2016 also saw \$2.8B of issuance with tenor greater than 20 years—Mexico City Airport Trust issued a \$1.0B 30-year bond denominated in USD, while European Investment Bank issued a \$1.1B 21-year bond denominated in Euros.

Exhibit 12: Green bond issuance by term (market)



Source: Bloomberg

Exhibit 13: Green bond issuance by term (2016)



Source: Bloomberg

## Green projects: Fifty shades of green

### Greenness, transparency, reporting, and standardization

**Assessing quality from a green perspective is a unique part of the investment process for green bond investors.** Fixed income investors can readily compare relative value in green bond yields, and assessing an issuer's credit quality is another fundamental skill. A third key factor, and challenge, in the investment process with respect to green bonds is assessing the quality and performance of the project from a green perspective. As issuance in the green bond market has demonstrated, green initiatives are varied and applicable to a wide range of industries, complicating a comparison. As the market grows in breadth and depth, investors are likely to put increasing emphasis on the shade of green, in our view. To this end, over the last year, rating agencies have endeavored to streamline this process for investors by creating green rating criteria, which we explain below.

In this section, we discuss some key pillars of green bond investing: transparency, reporting, standardization, and greenness.

### The cornerstone of a green bond is the utilization of its proceeds

**The primary purpose of green bonds is to invest funds that support verifiable projects intended to achieve a specific climate or environmental purpose.** However, there is no universal or standardized approach of designating a project as "green". Issuers of green bonds outline the green project categories (i.e., renewable energy, energy efficiency, mass transit) in their public disclosure ("use of proceeds" section of the prospectus) so as to allow investors to assess whether the bond meets their environmental and social mandates.

**Issuers also typically establish a green bond framework which sets out guidance on the green project selection process.** To further enhance transparency, issuers may hire an independent third party (environmental research institution) to carry out a **second opinion** vetting on the green bond framework and set-up. For example, the Center for International Climate and Environmental Research at the University of Oslo (CICERO) endorsed the green bond framework for The Province of Ontario and the \$300 million issue from Export Development Canada.

**Many project categories have been recognized as acceptable for green bond proceeds, such as** LED light retrofits, smart grid and smart metering investments, solar power, the construction of "green" office buildings, transit projects, investments in low-carbon and clean technology programs, such as energy efficiency and renewable energy, wind power generation, and projects aimed at reducing water usage, among many others. There has been green bond issuance related to specific green projects, and in other cases, issuers have raised funds for a variety of green projects.

### Periodic reporting from issuers on use of proceeds further enhances transparency

**Green bond issuers periodically report the specific investments made using green bond proceeds.** For example, EIB lists on its website all of the projects it funds through green bond proceeds, with a description of projects, their location, and proposed EIB financing (that also includes financing from green bonds). Other green bond issuers also report via websites or newsletters specific investments made through green bond proceeds.

Exhibit 14: Processes to ensure that green bond proceeds are used for eligible projects

Structure	Responsibilities
<b>Issuer (Prior to Green Bond Issuance)</b>	<ul style="list-style-type: none"> <li>Discloses in “use of proceeds” section of prospectus the project categories (i.e., renewable energy, clean transportation) eligible for green bond proceeds.</li> <li>Develops a framework for project selection with endorsement from an environmental research agency.</li> <li>Can get certification from investor-focused groups such as Climate Bond Initiative to provide further assurance to investors.</li> <li>Issuers have the option to solicit a green score from a rating agency</li> </ul>
<b>Investor</b>	<ul style="list-style-type: none"> <li>Based on the public disclosure and the discussions with the issuer, assesses whether bond meets their environmental and social mandate.</li> </ul>
<b>Issuer (After Green Bond Issue)</b>	<ul style="list-style-type: none"> <li>Reviews projects (ongoing basis) that meet green bond selection framework.</li> <li>Provides periodic reporting on specific investments made through green bond proceeds.</li> </ul>

Source: RBC Capital Markets

### Issuers and investors benefit from standardization

**Traditional high-quality, investment-grade fixed income instruments are by and large standardized.** This standardization offers the important benefit of reduced transaction costs for investors and coupon costs for issuers. With respect to green bonds, understanding project complexities and completing financial and regulatory due diligence adds to the transaction costs for investors. Accordingly, in order to achieve better efficiency for the green bond market, there has been a push for greater standardization in assessing projects that can be considered eligible for green bond proceeds.

**In our view, efforts to standardize should be directionally helpful in broadening investor participation.** To the extent that investors prove willing to pay more for deeper shades of green, it would help issuers to defray the cost of reporting and establish a “green curve” or “green basis”—a new fixed income relative value consideration.

### Rating agencies step into the fray to score and standardize “greenness”

Both Moody’s and S&P have developed green methodologies to assess bonds on their greenness, which can help to streamline the green assessment and comparison process for investors, and help issuers in the market. Overall, the approach should help investors to gauge the relative environmental impact of their investments and is a more refined approach than simply applying a “green” label to those that suit. One drawback is that such a measurement framework may add to the costs borne by issuers, and for this reason it may not be widely used by smaller projects/issuers.

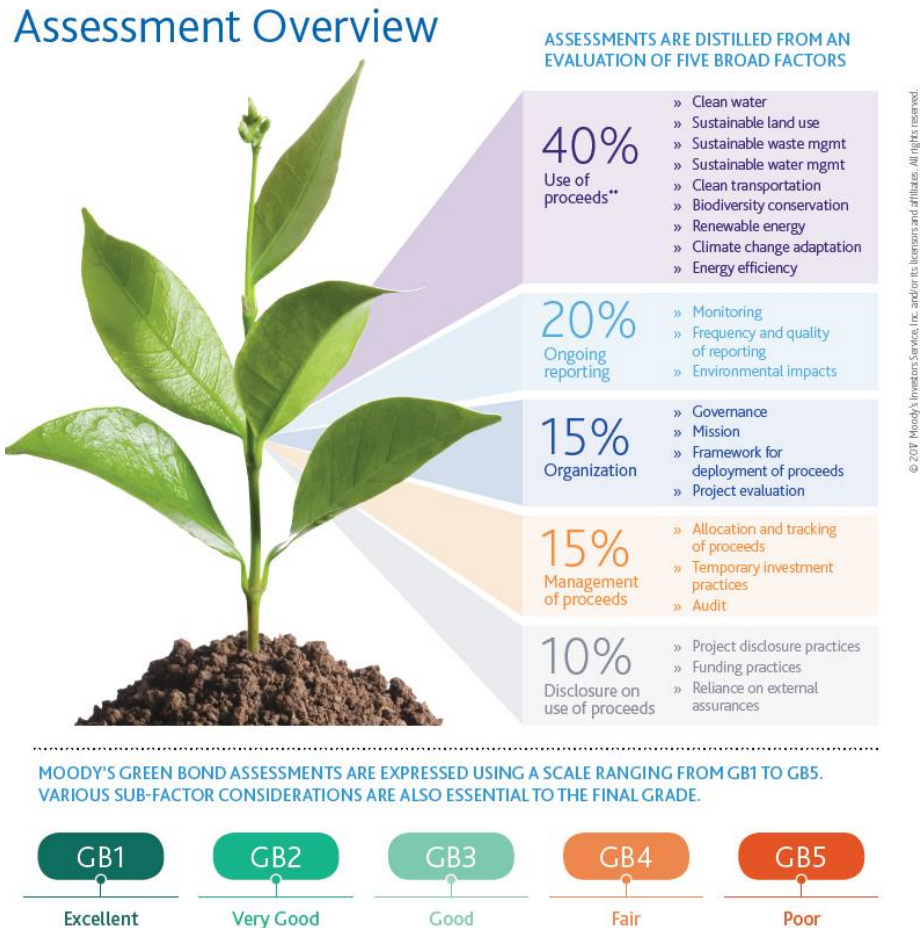
#### Moody’s Green Bond Assessment methodology

**Moody’s launched its Green Bond Assessment (GBA) methodology in March 2016 and rated 10 bond issues in 2016.** Moody’s framework employs a scorecard approach to score green bonds on the basis of their “greenness”. As Moody’s writes, “GBA’s offer a consistent, standardized and transparent approach for evaluating a green bond issuer’s framework across various security types around the globe.” As is the case with S&P’s framework, the scoring focusses on the bond rather than the issuer.

**Moody’s approach focuses on the evaluation of five factors:** (i) organization; (ii) use of proceeds; (iii) disclosure on the use of proceeds; (iv) management of proceeds; and (v) ongoing reporting and disclosure. Each factor is scored on a scale from 1 to 5, and the score is multiplied by the weighting for each factor, resulting in a Green Bond (GB) scoring scale ranging from GB1 (Excellent) to GB5 (Poor).

The following two exhibits summarize Moody's approach.

Exhibit 15: Moody's Green Bond Assessment Methodology



\* 2017 volume based on Moody's projection. Primary data sources include Moody's, Climate Bonds Initiative, Environmental Finance, Dealogic and Bloomberg.  
 \*\* Percentage of proceeds allocated to eligible project categories also forms an important part of the evaluation.

Source: Moody's

Exhibit 16: Moody's Green Bond Assessment scoring scale

#### Assessment Scale and Definitions

Grade	Detail	Definitions
GB1	Excellent	Green bond issuer has adopted an excellent approach to manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings. Prospects for achieving stated environmental objectives are excellent.
GB2	Very Good	Green bond issuer has adopted a very good approach to manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings. Prospects for achieving stated environmental objectives are very good.
GB3	Good	Green bond issuer has adopted a good approach to manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings. Prospects for achieving stated environmental objectives are good.
GB4	Fair	Green bond issuer has adopted a fair approach to manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings. Prospects for achieving stated environmental objectives are fair.
GB5	Poor	Green bond issuer has adopted a poor approach to manage, administer, allocate proceeds to and report on environmental projects financed with proceeds derived from green bond offerings. Prospects for achieving stated environmental objectives are poor.

Source: Moody's

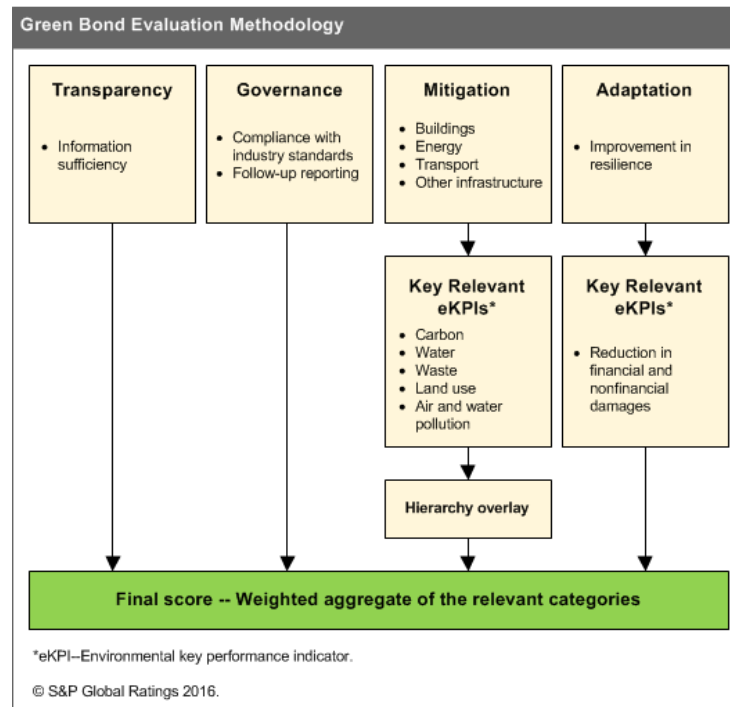
#### S&P announces framework for evaluating the “greenness” of green bonds

**Rating tool to measure environmental impact and climate change resilience.** In fall 2016, S&P announced its proposed Green Bond Evaluation Tool. A final framework is expected in the coming weeks. In the proposal, S&P stated that it would evaluate a green bond's net environmental benefit over the life of the project, across three or four key criteria, as applicable:

- (i) **Transparency** – quality of disclosure, reporting, and management of bond proceeds
- (ii) **Governance** – assess the steps taken to measure and manage environmental impact of the use of proceeds of the bond, including certification, impact assessment, risk monitoring, and risk management.
- (iii) **Mitigation** – evaluation of the impact bond proceeds will have on the environment (e.g. greenhouse gases, water use).
- (iv) **Adaptation** – when applicable, analyze and assess the benefit studies prepared for the project to evaluate the resilience impact of the projects against risk of extreme or more variable weather caused by climate change.

**S&P has proposed weights of 60% for green/resilience, 25% for governance, and 15% for transparency.** The use of environmental KPI's and a scorecard approach using the matrix of factors add structure and transparency to the evaluation. The end result will be an “E-score” (E1 through E5) for the environmental impact and an “R-score” (R1 through R5) for a project's resilience against climate change.

Exhibit 17: S&amp;P's Green Bond Evaluation Methodology



Source: S&amp;P

**Investors' willingness to pay more for deeper shades of green could help issuers to defray the cost of reporting.** One development worth watching is whether investors will be willing to pay more for greener bonds, all else being equal. In our view, investment funds with a socially responsible investing (SRI) mandate may be more willing to do so than those that do not. From the issuer perspective, if greenness, or deeper shades of green, generates greater investor interest and price at a premium to bonds that are less green, it could help issuers to pay for the green reporting obligations and incentivize new issuers to look to the market.

**Furthermore, the pricing of green issues measured against Moody's or S&P's scoring methodologies has the potential to establish a "green curve" or "green basis"—in essence, what spread investors are willing to concede for greener credits or projects.** Should investors prove willing to more strongly support projects making a bigger environmental impact, then we see potential for a "green curve"—a relationship between bond spread and greenness, akin to the credit quality/credit spread relationship. This is a natural outcome in a market where green standards have credibility among investors. Nevertheless, the underlying credit quality will remain the dominant consideration in terms of pricing green bonds among most investors, in our view.

### Standardization efforts by rating agencies complements other efforts

**Standardization of traditional bonds (e.g., deposit notes and MTNs) reduces transaction costs and continued efforts in this regard from the green bond community are helpful.** We believe achieving uniformity or comparability can facilitate time to market / speed of execution, reduce investment risk, and lead to a progressive increase in green bond issuance, further enhancing liquidity. Rating agency frameworks described above have followed efforts from others, including:

- **Climate Bond Initiative**, which has launched a set of standards for verifying the credentials of green bonds, to create more security for investors (see below).

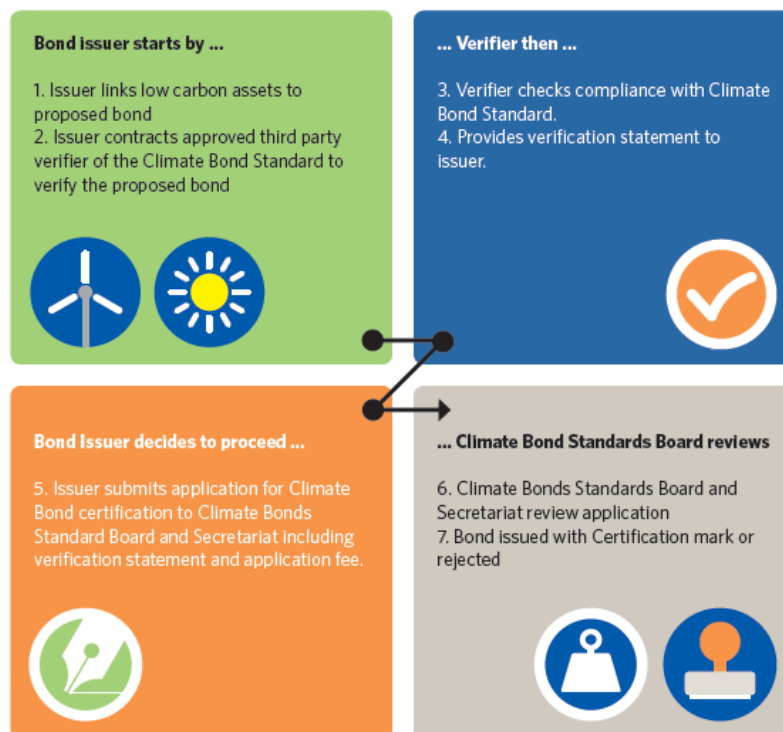
- The **Green Bond Principles** are principles outlining disclosure, management, and reporting for issuers related to green bonds. The alliance was formed out of the International Capital Market Association, which has widespread membership of underwriters, issuers, and investors.

**The Climate Bonds Initiative's industry-wide compliance standards allow for more transparency and consistency in green bond issuance**

**The Climate Bonds Initiative (CBI) is an investor-focused not-for-profit organization that promotes green investments.** The organization has developed a set of standards (the International Climate Bonds Standards and Certification Scheme) for verifying acceptable use of proceeds for green bonds. These Climate Bond Standards are intended to encourage the development of climate-themed investment funds, as a larger pool of investible funds will further lower the cost of financing.

**Before issuing a green bond, issuers receive a certification that verifies compliance with the Climate Bond Standards.** The process works as follows: (i) Green bond issuer maps green projects to the proposed bond offering and contracts approved third-party verifiers of Climate Bond Standards; (ii) Verifier checks compliance with Climate Bond Standards and submits verification statement to the issuer; and (iii) the issuer then submits an application with verification statement to obtain certificate of compliance from CBI. The process is further outlined in Exhibit 18.

Exhibit 18: Climate Bond Standards – green bond framework from CBI



Source: Climate Bond Initiative



## Investors: Growing appetite for green bonds

### **The appetite of institutional investors for green bonds has grown substantially in recent years**

The amount of capital available to fund green projects has risen sharply, as evidenced by the significant increase in annual green bond issuance (\$81.6B in 2016 versus \$36.7B in 2015). Many institutional investors now have mandates to support socially responsible investments and have participated in green bond issues. As per Bloomberg data, more than 900 unique institutional investors globally have invested in “labeled green bonds”.

**C\$ green bonds have also seen strong demand from investors with green mandates.** For instance, investors with “green” mandates and/or UN Principles for Responsible Investment signatories represented more than 90% of the recent green bond from the Province of Quebec (C\$500MM issued in Mar-17, with a 1.65% coupon and Mar-22 maturity). A year earlier, 70% of investors by dollar value in the Province of Ontario’s 2016 green bond issue (C\$750MM issued in Jan-16, with a 1.95% coupon and Jan-23 maturity) had green mandates.

### **Green Bond Indices verify the market is “here to stay”**

**The launch of several green bond indices during the last three years is a sign of the market’s growing maturity.** There are now at least four global green bond indices—in March 2014, Solactive AG in partnership with the Climate Bond Initiative launched first green bond index. Later that year, BofA Merrill Lynch, Barclays/MSCI, and S&P also launched green bond indices.

**Each index manager has its own criteria for inclusion.** As an example, Barclays-MSCI’s [green bond index](#) includes investment grade rated green bonds issued in various currencies by corporations, government or government-related, and securitized bonds. The four criteria for inclusion are: (i) eligible use of proceeds based on MSCI’s classifications; (ii) issuers having a process/criteria for evaluating and selecting green projects; (iii) management of proceeds (ring-fencing for green purposes); and (iv) reporting on eligible projects on an annual basis. There are several sub-indices of the aggregate index. The S&P Green Bond Index has similar criteria but bonds must be flagged as “green” by the Climate Bonds Initiative in order to be eligible for S&P index inclusion.

In our view, having benchmark indices is an important mark of progress for the green bond market, by giving investors the ability to benchmark performance, as well as enhancing the liquidity of issues within the index and making green bonds easily identifiable.

### **Institutional investor allocations to green investments is poised for continued growth**

**Looking ahead, allocations to green investing should continue to grow.** The United Nations Paris Agreement is likely to be a key driver as sovereigns drive issuance from top-down as a way to fund their individual carbon-reducing targets under the accord—188 countries committed to reduce their greenhouse gas emissions under the Paris Climate Agreement. China is leading the charge, with state-owned enterprises and corporates issuing \$31.6B in 2016 (accounting for 39% of global issuance in 2016) from less than \$100MM in 2015. Sovereign issues by France and Poland have increased the green bond investor base.



## Role of government: Create enabling policy and risk environment

We believe that municipal, provincial, and federal governments will continue to have a role to play in growing the green bond market. Areas where governments can have direct influence include creating a policy environment for environmental technologies, capitalizing on their ability to issue green bonds at lower interest rates, and potentially providing guarantees and tax incentives.

### Paris Climate Agreement and infrastructure focus globally provide plenty of scope for applying green standards to new projects

Taking stock of some major movements, we consider the recent Paris Agreement and the broad movement in Canada and elsewhere to spur infrastructure investment to be significant opportunities as they relate to green financing.

**In October 2016, Canada ratified the Paris Agreement and joined the signatory nations in “common cause” to combat climate change on a best-efforts basis.** The agreement aims to keep global warming below 2 degrees Celsius this century and adapt to the impact that climate change will have. The agreement went into force globally in November. In this regard, the Canadian federal government has undertaken several green policy initiatives including: (i) imposing carbon pricing on all provinces and territories beginning in 2018; (ii) giving Transport Canada the mandate to develop greenhouse gas regulations in the marine, rail, aviation, and vehicle sectors; and (iii) setting a goal of attaining 90% of electricity generation from non-emitting sources by 2030.

**On infrastructure, Canada is one of many countries aiming to enhance infrastructure investment to address demands from population growth, improve economic growth trajectories, and reduce carbon footprints.** For its part, Canada is creating an Infrastructure Bank (CIB), which will invest more than \$35B in various forms over the next 11 years, alongside private partners that will contribute additional capital. The focus is on large projects “such as regional transit plans, transportation networks and electricity grid interconnections.” CIB will invest at least \$5B in public transit systems and at least \$5B for green infrastructure projects.

**Several major transportation projects are planned or already under way in large Canadian cities that would be natural candidates for green funding;** we note that a portion of the proceeds for the Province of Ontario’s green bond financings will be directed to Metrolinx projects including the Eglinton LRT project under development.

### Government agencies can provide guarantees and other credit enhancements

**Municipal, provincial, and federal governments can provide guarantees for underlying liabilities to enhance the credit rating of green bonds.** For example, the Canadian federal government provides a guarantee on bonds issued by Nalcor to finance the Muskrat Falls hydro project and related transmission infrastructure, allowing bonds to be issued with an AAA credit rating. Government guarantees help to reduce the bond’s risk level, attracting mainstream investors into the issue. Other examples of credit enhancements that government agencies can provide include:

- Government agencies (such as Ontario’s Independent Electricity System Operator, BC Hydro, Hydro-Québec) can sign long-term Power Purchase Agreements (PPAs) to purchase power from renewable energy generation projects.
- Government agencies can also purchase junior or subordinated tranches to improve the risk profile of green bonds.

### Tax incentives can make green bonds more attractive for investors

**Additional tax incentives on green bond investments can further make the return on green bond investment competitive.** Furthermore, long-term commitment to public incentives is vital to prevent any retroactive modification of incentives, for a period of time commensurate with the expected investment payback period (i.e., to match or exceed the term of the bond). Existing tax incentive schemes include:

- Municipal authorities in the U.S. can access Clean and Renewable Energy Bond (CREB) tax-credit program. Funds used to finance projects that reduce green-house gas emission can tap CREB. Issuers using CREB can theoretically pay 0% interest rate with buyer receiving federal tax credit instead of interest payment.
- The Green Funds Scheme in the Netherlands allows individual investors to buy bonds or shares in the “Green Fund”, accepting a lower interest rate in exchange for 2.5% tax credit.

## Issuance outlook: Green momentum expected to continue

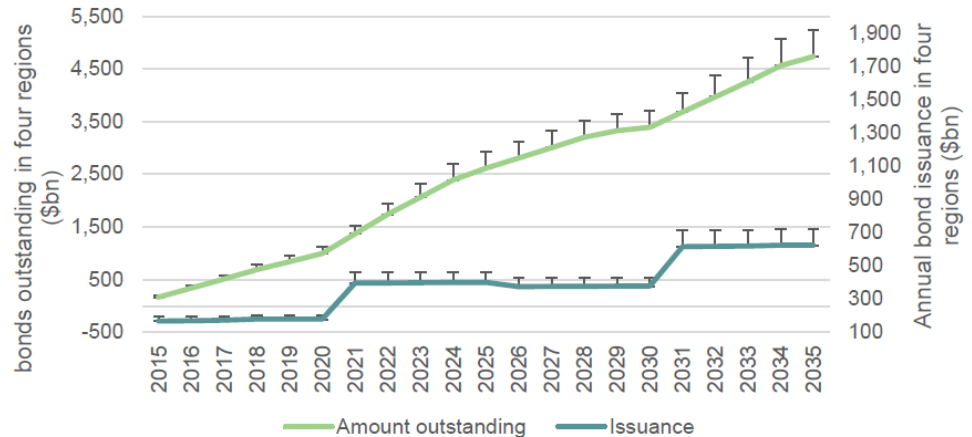
### A broad range of estimates for green bond issuance in 2017 and beyond

**With a current global market size of \$190B+, and following record issuance of \$81.6B in 2016, a wide range of estimates have emerged for green bond issuance in 2017 and beyond.** To date, 141 nations have ratified the 2015 Paris Agreement to reduce their greenhouse gas emissions to a level at which global warming can be kept below 2 degree Celsius. A report by Bloomberg New Energy Finance estimates that nearly \$500B per year of investment will be required over the next 25 years to achieve this goal. At the recent CBI conference held in March 2017, estimates for green bond issuance in 2017 ranged from \$123B (Bloomberg) to more than \$200B (Moody's). In a recent report published by S&P, the rating agency also pointed to an expectation of \$200B of green issuance in 2017. Year-to-date, green issuance has totaled \$19.8B. The CBI says that issuance could swell to \$1T per year by 2020, with green bond issuance out of China leading the way. The OECD predicts ~\$500B per year in the 2020s, expanding to \$620–720B annually by 2035 (see Exhibit 19), although the OECD has limited its long-range forecast to three sectors: renewable energy, energy efficiency portion of building investments, and low-emission vehicles, which account for 75% of outstanding labelled green bonds.

**We think growth in Canadian green bond issuance will be driven by the Federal Government's aggressive green agenda.** The Canadian Green Bond market has seen C\$4.5B issued so far across eight provincial, supranational, agency, and corporate transactions (see Exhibit 5). This puts Canada within the top ten ranking for green bond issuance globally. With the Canadian Federal Government pledging to invest heavily in the environment, we think Canada is ready to join the sovereign green bond club (currently only occupied by Poland and France). Provincial government issuers today include only Ontario and Quebec; we expect that other provinces could soon follow. Green policies set by Provincial and Federal should help to drive green financing in the private/corporate sector. Ultimately, we estimate that a liquid functioning domestic green bond market requires a market size of CAD\$10–20B, made up of bonds rated BBB or higher.

Exhibit 19: Longer-term potential for green bond issuance – OECD estimate

OECD estimates that green bonds could reach \$620–720B annually for renewable energy, energy efficiency portion of building investments, and low emissions vehicles (which account for ~75% of outstanding labelled green bonds)



Note: Error bars represent the enhanced securitisation scenario, based on a 10% increase in asset securitisation rate across all sectors over the baseline scenario, which incorporates a more conservative asset securitisation assumption. "Outstanding" refers to cumulative amount of bonds issued that have not yet reached redemption or maturity.

Source: OECD (2016), "A quantitative framework for analysing potential bond contributions in a low-carbon transition"

### China is now playing a leading role in green issuance, driven by commercial banks

**The CBI thinks issuance in China could double again in 2017.** Green bond issuance in China began in late 2015 with the Agricultural Bank of China issuing a green bond in the London market. Green bond issuance from China flourished in 2016, with \$31.6B issued, accounting for more than one-third of the global market last year and about 2% of China's bond market issuance. Commercial banks have been the driving force behind the growth of the Chinese green bond market, comprising 82% of all green issuance in 2016. Corporates accounted for 16%, and one of China's three policy banks (the Export-Import Bank) made up the remainder. In 2016, 35 new Chinese issuers entered the market, with the two largest issuers, Shanghai Pudong Development Bank and Industrial Bank, accounting for 43% of all Chinese green issuance. These banks were also the two largest green bond issuers globally in 2016. The CBI thinks issuance in the country could double again in 2017.

**The People's Bank of China (PBoC) estimates that 2–4 trillion yuan (\$290–580B) must be invested every year in order to remedy environmental problems and mitigate climate change.** The Bank estimates that public money will cover only 15% of needs, which means that private capital will need to be tapped. Various official guidelines and policies have been released over the past year or so, which helped spark the green market in China, including: (i) in December 2015, the PBoC's Guidelines on Issuance of Green Financial Bonds; (ii) in January 2016, the NDRC released Guidance on Green Bond Issuance, stating which projects are eligible as green projects; and (iii) in August 2016, Guidelines for Establishing the Green Financial System were jointly released by a number of agencies.

## Reviewing green bond potential from sovereign, quasi-government, and corporate issuers

### Sovereign “Green Bond debut” – the market is now open for others to follow...will Canada join the club?

**The CBI expects governments to comprise about 10% of green bond issuance in 2017.** Poland issued the world’s first sovereign green bond in December 2016, a EUR750MM 5-year (0.5% Dec-21). Polish Deputy Finance Minister, Piotr Nowak, has indicated that the country’s second green bond will likely be issued in 2017. *Sto Lat!* In January 2017, France issued the largest ever green bond, a EUR7B 1.741% due June 2039, with proceeds earmarked for renewable energy and other environmental projects. In its roadshow, France initially signaled issuance size of EUR2.5B+, with investor demand driving actual issuance to be nearly threefold. The size of the tranche will certainly help alleviate concerns regarding lack of liquidity in the green bond market. *Vive la France!* In addition to Poland and France, the CBI claims that another seven nations have publicly signaled intention to issue sovereign green bonds in 2017, including Sweden, Nigeria, and Morocco.

**When will Canada join the sovereign green bond club?** We think that under the current Liberal mandate, the stage has been set for innovative green financing to support the many green initiatives that have been set by the Federal Government. The Federal Liberal party has pledged to spend heavily on the environment. **Budget 2016** set aggressive goals for investing in cleaner technologies, transit, building, and conservation. Many of these goals were reinforced or pushed further with the **2016 Fall Economic Statement** (establishing the Canada Infrastructure Bank) and **Budget 2017**. Below is a list of initiatives that would certainly support the issuance of sovereign green bonds, in our view.

- **Canada Infrastructure Bank:** The Federal Government established the Canada Infrastructure Bank as an arm’s length organization that will work with provincial, territorial, municipal, indigenous, and private sector to invest in infrastructure. The Canada Infrastructure Bank will be responsible for investing at least \$35B over 11 years, using loans, loan guarantees, and equity investments, including \$5B for new green infrastructure and \$5B in public transit investments.
- **Green infrastructure:** New investments of \$21.9B over 11 years will be made to support green infrastructure, including through targeted investments by the new Canada Infrastructure Bank.
- **Public Transit Infrastructure Fund:** Budget 2016 focused on immediate investment of \$3.4B over three years through the Public Transit Infrastructure Fund, to upgrade and improve public transit systems across Canada. In its next phase of investment in public transit, the Government will invest \$20.1B over 11 years through bilateral agreements with provinces and territories.
- **Pan-Canadian Framework on Clean Growth and Climate Change:** In March 2016, declaration of the Pan-Canadian Framework on Clean Growth and Climate Change was completed. The Framework outlines where the Federal government will work with provincial, territories, and indigenous communities to achieve Canada’s international climate change commitments. As a first step, Budget 2016 provided \$2.9B over five years to address climate change and air pollution, including \$2B to establish the Low Carbon Economy Fund.
- **Transition to clean growth economy:** The Government will spend \$5B over five years on infrastructure that protects communities and supports Canada’s ongoing transition to a clean growth economy.
- **Clean technology:** The Government has pledged to invest more than \$1B to support clean technology, involving financing through the Development Bank of Canada (BDC) and Export Development Canada (EDC).

- **Leading by example:** The Government has pledged to reduce greenhouse gas emissions from federal operations by at least 40% below 2005 levels by 2030.

### Supra-nationals expected to remain an ongoing source of issuance

**While supra-nationals are no longer the dominant issuers of green bonds, we expect these entities to remain a steady source of green supply.** To date, \$46B has been issued by supra-nationals globally. Supra-nationals issue green bonds at their AAA cost of funding. These agencies then use proceeds to fund smaller green project sponsors who otherwise would not have access to capital at an efficient cost. This includes the International Finance Corporation (IFC), which has been one of the most active supra-national issuers of green bonds, having issued \$20.6B to date. In the Canadian market, the European Investment Bank (EIB) was the first non-Canadian supra-national to issue in CAD, with a \$500MM 5-year Climate Awareness Bond issued in November 2015, and issued a second \$500MM 5-year Climate Awareness Bond in September 2016. Supra-national agencies were the main source of green bond supply in the early days, representing 95–100% of annual issuance from 2007 through 2012. The market share of supra-nationals fell to just 11% in 2016 due to the increase in issuance in other sectors. However, supply from supra-nationals has remained steady in the \$8–11B range over the past four years. We expect supply to remain relatively consistent from this group of issuers going forward.

### An innovative tool for regional governments and government agencies to finance public infrastructure projects

**In Canada, the Provinces of Ontario and Quebec have established green bond programs and expect to remain active issuers going forward.** The Province of Ontario established a green bond program in 2014 and issued its first green bond to fund the Crosstown LRT project. The Province followed with its second green bond in January 2016 with a C\$750MM 7-year, which was subsequently re-opened for an additional C\$800MM in January 2017; use of proceeds referenced the Green Bond framework, eligible Green Bond projects, and specific uses. The Province of Quebec issued its first green bond, a C\$500MM 5-year bond at 1.65%, with proceeds to be directed to eligible projects included in the Quebec Infrastructure Plan and chosen by the Green Bond Advisory Committee. We expect other provinces to follow with green bonds to help fund their own green mandates, including renewable power generation and public transit.

**Government agencies, such as Export Development Canada (EDC), rated AAA, use sovereign credit ratings to access low-cost capital and support smaller business, trade, and foreign investment by domestic entities.** To date, the EDC has issued green bonds twice in the USD market, a \$300MM 3-year issued in January 2014, followed by another \$300MM 3-year bond issued in December 2015. We expect EDC to remain an ongoing issuer of green bonds. We expect that investors would welcome CAD issuance from the EDC.

**The US municipal sector saw its largest issuance to date in 2016, with \$7.5B of US municipal green bonds, about 76% higher than the \$4.3B issued in 2015.** The water/sewer sector has been the most active participant in the US municipal green bond market, having issued nearly \$7B to date. Local agencies and municipalities can also avail tax incentives to enhance yield for the investor or lower costs to the issuer; for example, municipal authorities in the US can access certain dedicated bond issuance schemes such as Clean and Renewable Energy Bonds (CREB), a program whereby funds from bond issuance are used to finance projects that reduce green-house gas emission as well as for energy conservation purposes. The State of California has set ambitious renewable energy and energy efficiency targets with other States following the lead.

### Corporate green issuance becoming a dominant force

**Green bond issuance by corporates (ex., banks) has accelerated, doubling to \$27B in 2016, driven by energy companies, auto makers, and tech companies.** French utility company Electricite de France SA (EDF) has been the most active corporate green bond issuer, with a EUR\$1.75B 10-year in October 2016, and in January 2017 EDF issued a dual tranche in Japanese yen (JPY19.6B 12-year and JPY6.4B 15-year). Together these deals brought EDF's total equivalent green issuance to \$6.5B in three different currencies (JPY, EUR, USD), with proceeds to fund hydroelectric and other sustainable-energy projects. In the US, Apple became the first tech company to issue a green bond, with a \$1.5B 7-year offering in February 2016 to finance clean energy projects across its operations. Also in 2016, China's Geely Holding Group issued a \$400MM green bond for producing emission-free London taxis. In Canada, the most recent corporate green bond was the a C\$225MM 10-year green mortgage bond issued in June 2015 by the 500 Georgia Office Partnership, a joint venture between TELUS and Westbank on the TELUS Garden building.

**Looking at our Canadian corporate issuing universe, we highlight the possibility for green bond issuance from:** (i) companies with renewable power generation assets (e.g., AltaGas, Brookfield Renewable Partners, TransCanada, TransAlta and Enbridge) to help finance the construction of green energy (hydro, solar, wind, etc.) or the decommissioning of older-generation coal plants; (ii) regulated utilities (e.g. Hydro One) with proceeds used towards the development of transmission lines linking renewable energy to the grid; and (iii) the proliferation of building sustainability rating systems raises the possibility of green bonds being issued by commercial real estate developers (pension funds) or Real Estate Investment Trusts.

**Canadian Federal Government policy sets the ground work for green bond issuance by the private sector.** Several recent policy announcements have been made to support green initiatives that will require investment by the private sector, and potential for financing under a green agenda. These include: (i) Beginning in 2018, the Federal Government will impose carbon pricing on all provinces and territories that have not yet implemented their own carbon pricing systems; (ii) Pointing out that the transportation sector accounts for nearly a quarter of Canada's greenhouse gas emissions, the Federal Government had handed Transport Canada the mandate to develop greenhouse gas regulations in the marine, rail, aviation and vehicle sectors; and (iii) The Federal Government has set a goal of attaining 90% of electricity generation from non-emitting sources by 2030.

### Other green bond issuing entities include ring-fenced issuance from commercial banks and green securitization

**We believe commercial banks will look to expand the green bond investor base and to support an important market as investors seek more socially responsible investment options.** Generally, we believe issuers will also see this as a branding tool. Notable issues in this space have included: (i) in the US, Bank of America has been an active issuer with a \$2.1B of issuance so far, including the November 2016 issuance of a \$1B green bond with 2.151% coupon and 4-year maturity; (ii) Chinese commercial banks issued \$22.2B of green bonds in 2016; Shanghai Pudong Development Bank Co Ltd was the largest issuer with \$7.6B of issuance; (iii) ABN AMRO Bank, BNP Paribas, and Societe Generale were active in the Euro-denominated green bond market, while Westpac was active in AUD.

**Green bond securitization issuance has including financing for energy efficiency and solar photovoltaic panels.** Approximately \$5B of labelled green bonds were issued globally in 2016, according to the Centre for Climate Change Economics and Policy. Smaller projects need to be aggregated into larger offerings suitable for the appetite of larger investors.



Green bond securitization provides another option to increase scale as well as upgrade the credit rating for asset-based renewable energy bonds.

## Green bonds: A primer

### Green bonds – Straightforward concept, fuzzy reality

**Green bonds are conceptually very straightforward: standard fixed income instruments where the proceeds from the offering are applied exclusively toward funding “green projects”.** Beyond the concept, however, the reality of green bonds becomes rather fuzzy as investors consider the definition of what constitutes a “green project” and restrictions on the use of “green bond” proceeds.

**There are divergent views on what constitutes a green project.** Green projects are defined as projects designed to promote climate and environmental sustainability. Although there are divergent views on the definition of *green* projects, green bond offerings to date have recognized renewable energy, energy efficiency, clean transportation, soil treatment, and waste and water management projects as eligible for green use of proceeds.

**Use of green bond proceeds is restricted.** The premise of a green bond entails some form of restriction on the use of the bond’s proceeds. In this regard, green bonds can take one of three forms: (1) a green “use of proceeds” bond, where the proceeds are ring-fenced to fund green initiatives but the instrument is a general obligation of the issuer; (2) a green project development bond, where the investor has risk exposure to a specific green project that is being funded; and (3) a green securitized bond, where green assets (loans) are pooled to fund and secure the debt instrument.

- **“Green use of proceeds” bond:** This structure is very much like a general obligation bond, with the key difference being the ring-fencing of funds raised for green projects. The proceeds of the issue are allocated within treasury to a sub-portfolio. So long as the green bond issue is outstanding, the balance of the sub-portfolio is reduced at quarter-end, by the amount matching green project disbursements made during the quarter. Prior to investment in green projects, the sub-portfolio is typically invested in money-market funds. Repayment of the bond is not linked to the credit or performance of the projects and debt investors have recourse to the issuer.
- **Project development bond:** The structure is similar to project financing, where proceeds are disbursed to a special purpose vehicle that owns a single or multiple green projects. Debt investors have direct exposure to the risk of one or multiple green projects owned by the special purpose vehicle.
- **Securitization bond:** This structure involves the bond being collateralized by pool of loans that were issued to finance green projects. The securitized loans could include loans to fund projects such as wind farms or energy efficiency assets, such as solar panels.

## Exhibit 20: Examples of green bond structures

Structure	Examples
"Green use of proceeds"	<p><b>Commercial Bank:</b> Issue unsecured green bond, with proceeds ring-fenced to fund a portfolio of existing or future green project loans.</p> <p><b>Utility / Manufacturer / Real Estate Company:</b> Issue unsecured bond to fund wind farms, manufacture solar panels, or achieve LEED certification.</p> <p><b>Government:</b> Proceeds of bond ring-fenced for qualifying green projects such as low carbon-emission transportation, clean water projects, etc.</p>
Project development bond	<p><b>Project Developer:</b> Issue bond to fund decommissioning and replacement of older-generation coal burning plants.</p>
Securitization	<p><b>Utility / Commercial Bank:</b> Issues bond to re-finance a pool of wind farm loans.</p>

Source: RBC Capital Markets

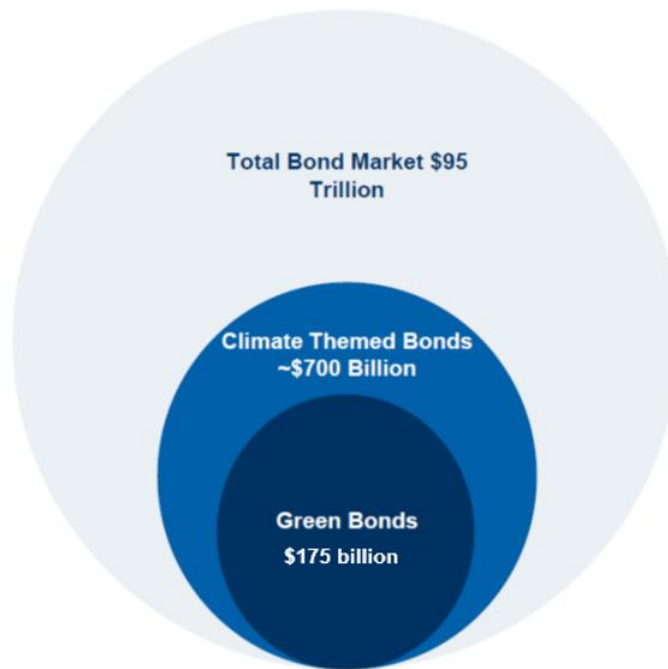
## Why issue a green bond?

Environmentally sustainable investment decisions are increasingly becoming either drivers of new business opportunity or key considerations in avoiding material economic and reputational risk. Furthermore, the transition to an environmentally sustainable economy requires significant investment from both public and private sectors. Green bonds provide a means to unlock private capital for projects that support such purposes. Although green bonds do not differ much from traditional fixed income instruments, the reasons for issuing them are multifold.

**Green project sponsors can benefit from large pools of fixed income capital.** Sponsors (including government agencies and corporations) are often looking for innovative ways to fund investments in emerging climate and environment-friendly technologies. Fixed income investments constitute a small proportion of financing for such projects: \$170B of labeled green bonds and \$700B of the broader "climate-themed bonds" issued represent less than 1% of the total \$95 trillion global bond market. We believe that green bonds will allow project sponsors to tap into the large global pool of funds allocated to fixed-income investment, particularly in mature stages of a project lifecycle.



Exhibit 21: Global Green and Climate-Themed Bond Market versus Total Bond Market



Note: Figure not to scale  
Source: RBC Capital Markets

**Smaller project sponsors benefit from lower funding costs and improved access to capital.** Supra-national agencies such as the World Bank and the African Development Bank will issue green bonds at their AAA cost of funding. These agencies will then use the proceeds to fund smaller green project sponsors who otherwise would not have access to capital at an efficient cost. Similarly, securitized green bonds can reduce the cost of capital for smaller project sponsors looking to fund on a standalone basis.

**Globally, institutional appetite for investments in green technologies has been growing in recent years.** While demand continues to grow, there have been limited investment grade opportunities of significant scale, although this is expected to change as larger projects receive access to funding.

### Green Bond Principles

**The Green Bond Principles are voluntary process guidelines that encourage transparency and promote integrity in the development of the green bond market.** The guidelines outline a process for designating, disclosing, managing, and reporting on the proceeds of a green bond. More than 117 institutions have joined the Green Bond Principles as members. Membership is open to institutions that have issued, underwritten, or invested in a green bond.

#### The benefits of Green Bond Principles are multifold:

- Provides issuers with guidance on the key components involved in launching a green bond.
- Aids investors by ensuring the availability of information necessary to evaluate the environmental impact of green bond investments.
- Assists underwriters by moving the market toward standard disclosures, which helps to facilitate transactions.



# **Appendix**



## Appendix I: Green bonds (labeled) outstanding

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
33829XAA5	500 Georgia Office Partnership	172.9	167.1	17-Jul-15	22-Jul-25	CAD	Special Purpose Entity	Secured
LW0926474	ABN AMRO Bank NV	556.9	556.9	23-May-16	31-May-22	EUR	Money Center Banks	Sr Unsecured
EK9262289	ABN AMRO Bank NV	563.5	563.5	2-Jun-15	9-Jun-20	EUR	Money Center Banks	Sr Unsecured
AL3824888	ACCIONA Financiacion Filiales SA	23.3	23.3	4-Nov-16	25-Nov-31	EUR	Building-Heavy Construct	Sr Unsecured
EK5081998	Abengoa Greenfield SA	334.7	334.7	24-Sep-14	1-Oct-19	EUR	Engineering/R&D Services	Sr Unsecured
EK5153904	Abengoa Greenfield SA	300.0	300.0	24-Sep-14	1-Oct-19	USD	Engineering/R&D Services	Sr Unsecured
00828EBJ7	African Development Bank	500.0	500.0	8-Dec-15	17-Dec-18	USD	Supranational Bank	Sr Unsecured
AL5882645	African Development Bank	40.5	40.5	6-Dec-16	15-Dec-31	AUD	Supranational Bank	Sr Unsecured
EI3827306	African Development Bank	11.5	11.5	20-Aug-10	29-Sep-20	AUD	Supranational Bank	Sr Unsecured
EI4010340	African Development Bank	17.2	17.2	8-Sep-10	20-Oct-17	BRL	Supranational Bank	Sr Unsecured
AL4322205	African Development Bank	135.0	135.0	24-Nov-16	1-Jun-22	SEK	Supranational Bank	Sr Unsecured
EI3036486	African Development Bank	21.1	21.1	21-Jun-10	28-Jul-17	BRL	Supranational Bank	Sr Unsecured
EK1137513	African Development Bank	157.0	157.0	6-Mar-14	12-Mar-19	SEK	Supranational Bank	Sr Unsecured
EI3325467	African Development Bank	18.6	18.6	21-Jul-10	25-Aug-17	BRL	Supranational Bank	Sr Unsecured
EK0800012	African Development Bank	153.8	153.8	17-Feb-14	24-Feb-19	SEK	Supranational Bank	Sr Unsecured
EJ3356411	African Development Bank	20.0	20.0	22-Aug-12	25-Aug-22	USD	Supranational Bank	Sr Unsecured
EK4611688	Agence Francaise de Developpement	1,295.1	1,295.1	10-Sep-14	17-Sep-24	EUR	Special Purpose Banks	Sr Unsecured
QJ1755876	Agricultural Bank of China Ltd	500.0	500.0	13-Oct-15	20-Oct-20	USD	Commer Banks Non-US	Sr Unsecured
QJ1755868	Agricultural Bank of China Ltd	400.0	400.0	13-Oct-15	20-Oct-18	USD	Commer Banks Non-US	Sr Unsecured
QJ1755884	Agricultural Bank of China Ltd	94.5	94.5	13-Oct-15	20-Oct-17	CNY	Commer Banks Non-US	Sr Unsecured
AL8189931	Agricultural Development Bank of China	1,439.6	1,439.6	16-Dec-16	23-Dec-19	CNY	Special Purpose Banks	Unsecured
AF1257514	Akuo Energy SAS	38.3	36.1	26-Jun-15	30-Jun-20	EUR	Energy-Alternate Sources	Unsecured
JK7336106	Alliander NV	336.7	336.7	18-Apr-16	22-Apr-26	EUR	Electric-Integrated	Sr Unsecured
LW5933293	Alperia SpA	138.4	138.4	24-Jun-16	28-Jun-24	EUR	Electric-Generation	Sr Unsecured
LW6184599	Alperia SpA	110.7	110.7	24-Jun-16	30-Jun-23	EUR	Electric-Generation	Sr Unsecured
EK3941029	Anstock II Ltd	300.0	300.0	17-Jul-14	24-Jul-17	USD	Commercial Services	Sr Unsecured
037833BU3	Apple Inc	1,500.0	1,500.0	16-Feb-16	23-Feb-23	USD	Computers	Sr Unsecured
AM5481305	Aquafin NV	22.4	22.4	25-Sep-15	25-Sep-30	EUR	Non-hazardous Waste Disp	Sr Unsecured
AM5464558	Aquafin NV	22.4	19.0	25-Sep-15	25-Sep-25	EUR	Non-hazardous Waste Disp	Sr Unsecured
EK1851873	Arise AB	167.1	151.9	16-Apr-14	25-Apr-19	SEK	Energy-Alternate Sources	Secured
EK4565041	Arise AB	49.3	49.3	25-Aug-14	8-Sep-17	SEK	Energy-Alternate Sources	Sr Unsecured
045167CY7	Asian Development Bank	500.0	500.0	11-Mar-15	19-Mar-25	USD	Supranational Bank	Sr Unsecured
045167DQ3	Asian Development Bank	800.0	800.0	8-Aug-16	16-Aug-19	USD	Supranational Bank	Sr Unsecured
045167DR1	Asian Development Bank	500.0	500.0	8-Aug-16	14-Aug-26	USD	Supranational Bank	Sr Unsecured
EI3928864	Asian Development Bank	73.0	73.0	19-Aug-10	29-Sep-17	BRL	Supranational Bank	Sr Unsecured
EK8901754	Asian Development Bank	2.1	2.1	22-Apr-15	15-May-18	ZAR	Supranational Bank	Sr Unsecured
EI3929623	Asian Development Bank	44.7	44.7	19-Aug-10	29-Sep-17	TRY	Supranational Bank	Sr Unsecured
EK4444692	Asian Development Bank	2.5	2.5	29-Jul-14	27-Aug-19	NZD	Supranational Bank	Sr Unsecured
AM8378458	Atrium Ljungberg AB	125.1	125.1	13-Mar-17	21-Mar-22	SEK	Real Estate Mgmt/Service	Sr Unsecured
AM8378441	Atrium Ljungberg AB	22.7	22.7	13-Mar-17	21-Mar-22	SEK	Real Estate Mgmt/Service	Sr Unsecured
AM9586737	Atrium Ljungberg AB	34.0	34.0	21-Mar-17	27-Mar-20	SEK	Real Estate Mgmt/Service	Sr Unsecured
EK9367633	Australia & New Zealand Banking Group Ltd	467.0	467.0	27-May-15	3-Jun-20	AUD	Commer Banks Non-US	Sr Unsecured
LW1619672	Axis Bank Ltd	362.9	362.9	27-May-16	27-May-26	INR	Commer Banks Non-US	Subordinated
LW2047469	Axis Bank Ltd/Dubai	500.0	500.0	23-May-16	1-Jun-21	USD	Commer Banks Non-US	Sr Unsecured
JK8059798	BAIC Motor Corp Ltd	384.4	384.4	14-Apr-16	22-Apr-23	CNY	Auto-Cars/Light Trucks	Unsecured
JK8061265	BAIC Motor Corp Ltd	384.4	384.4	14-Apr-16	22-Apr-23	CNY	Auto-Cars/Light Trucks	Unsecured
EK5145025	BKK AS	307.3	307.3	24-Sep-14	6-Oct-21	NOK	Electric-Integrated	Sr Unsecured
AL3234146	BNP Paribas SA	531.3	531.3	24-Nov-16	1-Jun-22	EUR	Diversified Banking Inst	Sr Unsecured
JV0451395	BPCE SA	330.5	330.5	2-Dec-15	14-Dec-22	EUR	Commer Banks Non-US	Sr Unsecured
EK9291445	BRF SA	562.7	562.7	29-May-15	3-Jun-22	EUR	Food-Meat Products	Sr Unsecured
QZ1873004	Bajaj Finance Ltd	1.5	1.5	14-Jul-16	14-Jul-21	INR	Diversified Finan Serv	1st lien
JK8733616	Banco Nacional de Costa Rica	500.0	500.0	20-Apr-16	25-Apr-21	USD	Commer Banks Non-US	Sr Unsecured
06051GGB9	Bank of America Corp	1,000.0	1,000.0	4-Nov-16	9-Nov-20	USD	Diversified Banking Inst	Sr Unsecured
06051GFR5	Bank of America Corp	600.0	600.0	7-May-15	12-May-18	USD	Diversified Banking Inst	Sr Unsecured
QZ9965687	Bank of China Ltd/London	500.0	500.0	3-Nov-16	9-Nov-19	USD	Commer Banks Non-US	Secured
LW7220228	Bank of China Ltd/Luxembourg	1,000.0	1,000.0	4-Jul-16	12-Jul-21	USD	Commer Banks Non-US	Sr Unsecured
LW7220293	Bank of China Ltd/Luxembourg	554.6	554.6	5-Jul-16	12-Jul-21	EUR	Commer Banks Non-US	Sr Unsecured
LW7417683	Bank of China Ltd/Luxembourg	500.0	500.0	4-Jul-16	12-Jul-19	USD	Commer Banks Non-US	Sr Unsecured
LW7417600	Bank of China Ltd/Luxembourg	750.0	750.0	4-Jul-16	12-Jul-19	USD	Commer Banks Non-US	Sr Unsecured
LW7220301	Bank of China Ltd/New York NY	224.2	224.2	3-Jul-16	12-Jul-18	CNY	Commer Banks Non-US	Sr Unsecured
AL2765447	Bank of Communications Co Ltd	2,904.9	2,904.9	15-Nov-16	22-Nov-21	CNY	Commer Banks Non-US	Unsecured
AL2764671	Bank of Communications Co Ltd	1,452.5	1,452.5	15-Nov-16	22-Nov-19	CNY	Commer Banks Non-US	Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
JK3691884	Bank of Qingdao Co Ltd	76.9	76.9	7-Mar-16	14-Mar-21	CNY	Commer Banks Non-US	Unsecured
JK3689284	Bank of Qingdao Co Ltd	538.5	538.5	7-Mar-16	14-Mar-19	CNY	Commer Banks Non-US	Unsecured
AL3180257	Bank of Qingdao Co Ltd	144.5	144.5	17-Nov-16	24-Nov-21	CNY	Commer Banks Non-US	Unsecured
AL3178913	Bank of Qingdao Co Ltd	433.4	433.4	17-Nov-16	24-Nov-19	CNY	Commer Banks Non-US	Unsecured
AL5174217	Bank of Urumqi Co Ltd	72.3	72.3	1-Dec-16	8-Dec-19	CNY	Commer Banks Non-US	Unsecured
QZ5140467	Beijing Enterprises Water Group China Investment Ltd	418.8	418.8	9-Sep-16	#VALUE!	CNY	Investment Companies	Unsecured
QZ0664172	Beijing Enterprises Water Group Ltd	105.6	105.6	28-Jul-16	3-Aug-24	CNY	Water	Unsecured
QZ9649109	Beijing SPC Environment Protection Tech Co Ltd	161.0	161.0	21-Oct-16	31-Oct-21	CNY	Gas-Distribution	Unsecured
QZ9649604	Beijing SPC Environment Protection Tech Co Ltd	161.0	161.0	21-Oct-16	31-Oct-21	CNY	Gas-Distribution	Unsecured
QZ3316473	Berlin Hyp AG	562.6	562.6	19-Sep-16	26-Sep-23	EUR	Mortgage Banks	Sr Unsecured
EK8466089	Berlin Hyp AG	560.0	560.0	27-Apr-15	5-May-22	EUR	Mortgage Banks	Secured
AM3894129	Caisse des Depots et Consignations	528.2	528.2	22-Feb-17	1-Mar-22	EUR	Sovereign Agency	Sr Unsecured
QZ6915941	Castellum AB	75.6	75.6	26-Sep-16	4-Oct-21	SEK	Real Estate Mgmt/Service	Sr Unsecured
QZ6929140	Castellum AB	40.7	40.7	26-Sep-16	4-Oct-21	SEK	Real Estate Mgmt/Service	Sr Unsecured
QZ0918586	Central American Bank for Economic Integration	77.1	77.1	29-Jul-16	13-Aug-20	ZAR	Supranational Bank	Sr Unsecured
JK6448324	Century Concord Wind Power Investment Co Ltd	30.9	30.9	1-Apr-16	7-Apr-19	CNY	Invest Comp - Resources	Unsecured
QZ6657857	China Datang Corp Renewable Power Co Ltd	75.0	75.0	23-Sep-16	27-Sep-21	CNY	Electric-Generation	Unsecured
QZ9222279	China Datang Corp Renewable Power Co Ltd	73.9	73.9	18-Oct-16	21-Oct-21	CNY	Electric-Generation	Unsecured
AM5288221	China Development Bank Corp	728.1	728.1	15-Feb-17	23-Feb-22	CNY	Special Purpose Banks	Unsecured
QZ6312511	China Energy Conservation & Environmental Protection Group	75.1	75.1	21-Sep-16	26-Sep-23	CNY	Energy-Alternate Sources	Unsecured
QZ6313238	China Energy Conservation & Environmental Protection Group	225.2	225.2	21-Sep-16	26-Sep-26	CNY	Energy-Alternate Sources	Unsecured
QZ2408669	China Energy Conservation & Environmental Protection Group	301.7	301.7	15-Aug-16	18-Aug-23	CNY	Energy-Alternate Sources	Unsecured
QZ2408636	China Energy Conservation & Environmental Protection Group	150.8	150.8	15-Aug-16	18-Aug-21	CNY	Energy-Alternate Sources	Unsecured
AM4654902	China Huarong Financial Leasing Co Ltd	145.8	145.8	9-Feb-17	15-Feb-22	CNY	Finance-Leasing Compan	Unsecured
AM4654845	China Huarong Financial Leasing Co Ltd	145.8	145.8	9-Feb-17	15-Feb-20	CNY	Finance-Leasing Compan	Unsecured
QZ3452302	China Three Gorges Corp	524.0	524.0	25-Aug-16	30-Aug-19	CNY	Electric-Generation	Unsecured
QZ3453482	China Three Gorges Corp	374.3	374.3	25-Aug-16	30-Aug-26	CNY	Electric-Generation	Unsecured
AM6602404	Chongqing Longhu Development Co Ltd	145.0	145.0	27-Feb-17	7-Mar-24	CNY	Real Estate Oper/Develop	Unsecured
AM4648326	Chongqing Longhu Development Co Ltd	209.7	209.7	9-Feb-17	17-Feb-24	CNY	Real Estate Oper/Develop	Unsecured
AM4647104	Chongqing Longhu Development Co Ltd	233.0	233.0	9-Feb-17	17-Feb-22	CNY	Real Estate Oper/Develop	Unsecured
AM4647815	Chongqing Longhu Development Co Ltd	233.0	233.0	9-Feb-17	17-Feb-22	CNY	Real Estate Oper/Develop	Unsecured
AM4647823	Chongqing Longhu Development Co Ltd	209.7	209.7	9-Feb-17	17-Feb-24	CNY	Real Estate Oper/Develop	Unsecured
AM6602495	Chongqing Longhu Development Co Ltd	145.0	145.0	27-Feb-17	7-Mar-24	CNY	Real Estate Oper/Develop	Unsecured
EK9960494	City of Gothenburg Sweden	126.6	126.6	23-Jun-15	30-Jun-21	SEK	Municipal-City	Sr Unsecured
LW3813992	City of Gothenburg Sweden	120.0	120.0	8-Jun-16	15-Jun-22	SEK	Municipal-City	Unsecured
EK2986330	City of Gothenburg Sweden	224.5	224.5	26-May-14	3-Jun-20	SEK	Municipal-City	Sr Unsecured
EJ8568853	City of Gothenburg Sweden	39.4	39.4	26-Sep-13	3-Oct-19	SEK	Municipal-City	Unsecured
EK2986157	City of Gothenburg Sweden	46.4	46.4	26-May-14	3-Jun-20	SEK	Municipal-City	Sr Unsecured
EJ8568671	City of Gothenburg Sweden	39.4	39.4	26-Sep-13	3-Oct-19	SEK	Municipal-City	Sr Unsecured
EK1175042	City of Johannesburg South Africa	136.9	136.9	5-Jun-14	9-Jun-24	ZAR	Municipal-City	Sr Unsecured
QZ8251360	City of Norrkoping Sweden	68.2	68.2	6-Oct-16	13-Oct-21	SEK	Municipal-City	Sr Unsecured
EK5394912	City of Orebro Sweden	28.0	28.0	9-Oct-14	16-Oct-19	SEK	Municipal-City	Sr Unsecured
EK5394979	City of Orebro Sweden	76.9	76.9	9-Oct-14	16-Oct-19	SEK	Municipal-City	Sr Unsecured
QZ7353530	City of Orebro Sweden	58.0	58.0	29-Sep-16	6-Oct-21	SEK	Municipal-City	Sr Unsecured
QJ8175144	City of Oslo Norway	176.2	176.2	2-Dec-15	4-Sep-24	NOK	Municipal-City	Sr Unsecured
QJ3883445	City of Paris France	319.2	319.2	10-Nov-15	25-May-31	EUR	Municipal-City	Sr Unsecured
AL4204718	City of Vasteras/Sweden	27.1	27.1	23-Nov-16	30-Nov-21	SEK	Municipal-City	Sr Unsecured
AL4203371	City of Vasteras/Sweden	54.2	54.2	23-Nov-16	30-Nov-21	SEK	Municipal-City	Sr Unsecured
QZ6160597	Cooperatieve Rabobank UA	553.5	553.5	4-Oct-16	11-Oct-21	EUR	Commer Banks Non-US	Sr Unsecured
LW2244793	Credit Agricole Corporate & Investment Bank SA	163.9	163.9	25-May-16	3-Jun-19	BRL	Diversified Banking Inst	Sr Unsecured
EK6151154	Credit Agricole Corporate & Investment Bank SA	12.3	12.3	19-Nov-14	28-Nov-18	TRY	Diversified Banking Inst	Sr Unsecured
AM2428903	Credit Agricole Corporate & Investment Bank SA	89.3	89.3	19-Jan-17	30-Jan-20	RUB	Diversified Banking Inst	Sr Unsecured
QJ8808512	Credit Agricole Corporate & Investment Bank SA	7.6	7.6	20-Nov-15	25-Jun-18	BRL	Diversified Banking Inst	Sr Unsecured
AM1963496	Credit Agricole Corporate & Investment Bank SA	6.7	6.7	16-Jan-17	28-Feb-20	INR	Diversified Banking Inst	Sr Unsecured
EK6152897	Credit Agricole Corporate & Investment Bank SA	16.9	16.9	19-Nov-14	27-Nov-19	USD	Diversified Banking Inst	Sr Unsecured
EK0697301	Credit Agricole Corporate & Investment Bank SA	123.7	123.7	6-Feb-14	5-Mar-18	JPY	Diversified Banking Inst	Sr Unsecured
EK5909719	Credit Agricole Corporate & Investment Bank SA	27.3	27.3	7-Nov-14	21-Nov-19	AUD	Diversified Banking Inst	Sr Unsecured
QJ0776089	Credit Agricole Corporate & Investment Bank SA	39.3	39.3	2-Oct-15	15-Oct-19	TRY	Diversified Banking Inst	Sr Unsecured
LW1899670	Credit Agricole Corporate & Investment Bank SA	46.4	46.4	19-May-16	2-Jun-21	AUD	Diversified Banking Inst	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
JK3691884	Bank of Qingdao Co Ltd	76.9	76.9	7-Mar-16	14-Mar-21	CNY	Commer Banks Non-US	Unsecured
JK3689284	Bank of Qingdao Co Ltd	538.5	538.5	7-Mar-16	14-Mar-19	CNY	Commer Banks Non-US	Unsecured
AL3180257	Bank of Qingdao Co Ltd	144.5	144.5	17-Nov-16	24-Nov-21	CNY	Commer Banks Non-US	Unsecured
AL3178913	Bank of Qingdao Co Ltd	433.4	433.4	17-Nov-16	24-Nov-19	CNY	Commer Banks Non-US	Unsecured
AL5174217	Bank of Urumqi Co Ltd	72.3	72.3	1-Dec-16	8-Dec-19	CNY	Commer Banks Non-US	Unsecured
QZ5140467	Beijing Enterprises Water Group China Investment Ltd	418.8	418.8	9-Sep-16	#VALUE!	CNY	Investment Companies	Unsecured
QZ0664172	Beijing Enterprises Water Group Ltd	105.6	105.6	28-Jul-16	3-Aug-24	CNY	Water	Unsecured
QZ9649109	Beijing SPC Environment Protection Tech Co Ltd	161.0	161.0	21-Oct-16	31-Oct-21	CNY	Gas-Distribution	Unsecured
QZ9649604	Beijing SPC Environment Protection Tech Co Ltd	161.0	161.0	21-Oct-16	31-Oct-21	CNY	Gas-Distribution	Unsecured
QZ3316473	Berlin Hyp AG	562.6	562.6	19-Sep-16	26-Sep-23	EUR	Mortgage Banks	Sr Unsecured
EK8466089	Berlin Hyp AG	560.0	560.0	27-Apr-15	5-May-22	EUR	Mortgage Banks	Secured
AM3894129	Caisse des Depots et Consignations	528.2	528.2	22-Feb-17	1-Mar-22	EUR	Sovereign Agency	Sr Unsecured
QZ6915941	Castellum AB	75.6	75.6	26-Sep-16	4-Oct-21	SEK	Real Estate Mgmt/Service	Sr Unsecured
QZ6929140	Castellum AB	40.7	40.7	26-Sep-16	4-Oct-21	SEK	Real Estate Mgmt/Service	Sr Unsecured
QZ0918586	Central American Bank for Economic Integration	77.1	77.1	29-Jul-16	13-Aug-20	ZAR	Supranational Bank	Sr Unsecured
JK6448324	Century Concord Wind Power Investment Co Ltd	30.9	30.9	1-Apr-16	7-Apr-19	CNY	Invest Comp - Resources	Unsecured
QZ6657857	China Datang Corp Renewable Power Co Ltd	75.0	75.0	23-Sep-16	27-Sep-21	CNY	Electric-Generation	Unsecured
QZ9222279	China Datang Corp Renewable Power Co Ltd	73.9	73.9	18-Oct-16	21-Oct-21	CNY	Electric-Generation	Unsecured
AM5288221	China Development Bank Corp	728.1	728.1	15-Feb-17	23-Feb-22	CNY	Special Purpose Banks	Unsecured
QZ6312511	China Energy Conservation & Environmental Protection Group	75.1	75.1	21-Sep-16	26-Sep-23	CNY	Energy-Alternate Sources	Unsecured
QZ6313238	China Energy Conservation & Environmental Protection Group	225.2	225.2	21-Sep-16	26-Sep-26	CNY	Energy-Alternate Sources	Unsecured
QZ2408669	China Energy Conservation & Environmental Protection Group	301.7	301.7	15-Aug-16	18-Aug-23	CNY	Energy-Alternate Sources	Unsecured
QZ2408636	China Energy Conservation & Environmental Protection Group	150.8	150.8	15-Aug-16	18-Aug-21	CNY	Energy-Alternate Sources	Unsecured
AM4654902	China Huarong Financial Leasing Co Ltd	145.8	145.8	9-Feb-17	15-Feb-22	CNY	Finance-Leasing Compan	Unsecured
AM4654845	China Huarong Financial Leasing Co Ltd	145.8	145.8	9-Feb-17	15-Feb-20	CNY	Finance-Leasing Compan	Unsecured
QZ3452302	China Three Gorges Corp	524.0	524.0	25-Aug-16	30-Aug-19	CNY	Electric-Generation	Unsecured
QZ3453482	China Three Gorges Corp	374.3	374.3	25-Aug-16	30-Aug-26	CNY	Electric-Generation	Unsecured
AM6602404	Chongqing Longhu Development Co Ltd	145.0	145.0	27-Feb-17	7-Mar-24	CNY	Real Estate Oper/Develop	Unsecured
AM4648326	Chongqing Longhu Development Co Ltd	209.7	209.7	9-Feb-17	17-Feb-24	CNY	Real Estate Oper/Develop	Unsecured
AM4647104	Chongqing Longhu Development Co Ltd	233.0	233.0	9-Feb-17	17-Feb-22	CNY	Real Estate Oper/Develop	Unsecured
AM4647815	Chongqing Longhu Development Co Ltd	233.0	233.0	9-Feb-17	17-Feb-22	CNY	Real Estate Oper/Develop	Unsecured
AM4647823	Chongqing Longhu Development Co Ltd	209.7	209.7	9-Feb-17	17-Feb-24	CNY	Real Estate Oper/Develop	Unsecured
AM6602495	Chongqing Longhu Development Co Ltd	145.0	145.0	27-Feb-17	7-Mar-24	CNY	Real Estate Oper/Develop	Unsecured
EK9960494	City of Gothenburg Sweden	126.6	126.6	23-Jun-15	30-Jun-21	SEK	Municipal-City	Sr Unsecured
LW3813992	City of Gothenburg Sweden	120.0	120.0	8-Jun-16	15-Jun-22	SEK	Municipal-City	Unsecured
EK2986330	City of Gothenburg Sweden	224.5	224.5	26-May-14	3-Jun-20	SEK	Municipal-City	Sr Unsecured
EJ8568853	City of Gothenburg Sweden	39.4	39.4	26-Sep-13	3-Oct-19	SEK	Municipal-City	Unsecured
EK2986157	City of Gothenburg Sweden	46.4	46.4	26-May-14	3-Jun-20	SEK	Municipal-City	Sr Unsecured
EJ8568671	City of Gothenburg Sweden	39.4	39.4	26-Sep-13	3-Oct-19	SEK	Municipal-City	Sr Unsecured
EK1175042	City of Johannesburg South Africa	136.9	136.9	5-Jun-14	9-Jun-24	ZAR	Municipal-City	Sr Unsecured
QZ8251360	City of Norrkoping Sweden	68.2	68.2	6-Oct-16	13-Oct-21	SEK	Municipal-City	Sr Unsecured
EK5394912	City of Orebro Sweden	28.0	28.0	9-Oct-14	16-Oct-19	SEK	Municipal-City	Sr Unsecured
EK5394979	City of Orebro Sweden	76.9	76.9	9-Oct-14	16-Oct-19	SEK	Municipal-City	Sr Unsecured
QZ7353530	City of Orebro Sweden	58.0	58.0	29-Sep-16	6-Oct-21	SEK	Municipal-City	Sr Unsecured
QJ8175144	City of Oslo Norway	176.2	176.2	2-Dec-15	4-Sep-24	NOK	Municipal-City	Sr Unsecured
QJ3883445	City of Paris France	319.2	319.2	10-Nov-15	25-May-31	EUR	Municipal-City	Sr Unsecured
AL4204718	City of Vasteras/Sweden	27.1	27.1	23-Nov-16	30-Nov-21	SEK	Municipal-City	Sr Unsecured
AL4203371	City of Vasteras/Sweden	54.2	54.2	23-Nov-16	30-Nov-21	SEK	Municipal-City	Sr Unsecured
QZ6160597	Cooperatieve Rabobank UA	553.5	553.5	4-Oct-16	11-Oct-21	EUR	Commer Banks Non-US	Sr Unsecured
LW2244793	Credit Agricole Corporate & Investment Bank SA	163.9	163.9	25-May-16	3-Jun-19	BRL	Diversified Banking Inst	Sr Unsecured
EK6151154	Credit Agricole Corporate & Investment Bank SA	12.3	12.3	19-Nov-14	28-Nov-18	TRY	Diversified Banking Inst	Sr Unsecured
AM2428903	Credit Agricole Corporate & Investment Bank SA	89.3	89.3	19-Jan-17	30-Jan-20	RUB	Diversified Banking Inst	Sr Unsecured
QJ8808512	Credit Agricole Corporate & Investment Bank SA	7.6	7.6	20-Nov-15	25-Jun-18	BRL	Diversified Banking Inst	Sr Unsecured
AM1963496	Credit Agricole Corporate & Investment Bank SA	6.7	6.7	16-Jan-17	28-Feb-20	INR	Diversified Banking Inst	Sr Unsecured
EK6152897	Credit Agricole Corporate & Investment Bank SA	16.9	16.9	19-Nov-14	27-Nov-19	USD	Diversified Banking Inst	Sr Unsecured
EK0697301	Credit Agricole Corporate & Investment Bank SA	123.7	123.7	6-Feb-14	5-Mar-18	JPY	Diversified Banking Inst	Sr Unsecured
EK5909719	Credit Agricole Corporate & Investment Bank SA	27.3	27.3	7-Nov-14	21-Nov-19	AUD	Diversified Banking Inst	Sr Unsecured
QJ0776089	Credit Agricole Corporate & Investment Bank SA	39.3	39.3	2-Oct-15	15-Oct-19	TRY	Diversified Banking Inst	Sr Unsecured
LW1899670	Credit Agricole Corporate & Investment Bank SA	46.4	46.4	19-May-16	2-Jun-21	AUD	Diversified Banking Inst	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
EK0567587	Credit Agricole Corporate & Investment Bank SA	68.7	68.7	28-Jan-14	14-Feb-18	TRY	Diversified Banking Inst	Sr Unsecured
EK6151519	Credit Agricole Corporate & Investment Bank SA	16.8	16.8	19-Nov-14	28-Nov-18	BRL	Diversified Banking Inst	Sr Unsecured
LW4075526	Credit Agricole Corporate & Investment Bank SA	36.7	36.7	10-Jun-16	18-Jun-20	AUD	Diversified Banking Inst	Sr Unsecured
EK2784214	Credit Agricole Corporate & Investment Bank SA	5.0	5.0	14-May-14	25-Sep-17	BRL	Diversified Banking Inst	Sr Unsecured
AM0684721	Credit Agricole Corporate & Investment Bank SA	1.0	1.0	5-Jan-17	30-Jan-20	BRL	Diversified Banking Inst	Sr Unsecured
AL3169722	Credit Agricole Corporate & Investment Bank SA	5.3	5.3	10-Nov-16	18-Nov-27	EUR	Diversified Banking Inst	Unsecured
EK7207948	Credit Agricole Corporate & Investment Bank SA	20.1	20.1	27-Jan-15	24-Feb-20	INR	Diversified Banking Inst	Sr Unsecured
EJ9997622	Credit Agricole Corporate & Investment Bank SA	53.6	53.6	18-Dec-13	18-Dec-18	AUD	Diversified Banking Inst	Sr Unsecured
EK5231171	Credit Agricole Corporate & Investment Bank SA	27.0	27.0	30-Sep-14	29-Oct-19	INR	Diversified Banking Inst	Sr Unsecured
EK6442918	Credit Agricole Corporate & Investment Bank SA	10.0	10.0	3-Dec-14	10-Dec-19	USD	Diversified Banking Inst	Sr Unsecured
EK5991618	Credit Agricole Corporate & Investment Bank SA	2.6	2.6	7-Nov-14	28-Nov-18	IDR	Diversified Banking Inst	Sr Unsecured
EK6152590	Credit Agricole Corporate & Investment Bank SA	49.3	49.3	19-Nov-14	28-May-19	AUD	Diversified Banking Inst	Sr Unsecured
EK9606840	Credit Agricole Corporate & Investment Bank SA	3.9	3.9	5-Jun-15	27-Jun-18	INR	Diversified Banking Inst	Sr Unsecured
EJ9997689	Credit Agricole Corporate & Investment Bank SA	52.0	52.0	18-Dec-13	18-Dec-18	USD	Diversified Banking Inst	Sr Unsecured
EK6452701	Credit Agricole Corporate & Investment Bank SA	4.2	4.2	25-Nov-14	28-Dec-18	IDR	Diversified Banking Inst	Sr Unsecured
JV6970885	Credit Agricole Corporate & Investment Bank SA	1.6	1.6	5-Jan-16	29-Jan-19	INR	Diversified Banking Inst	Sr Unsecured
QZ8276060	Credit Agricole Corporate & Investment Bank SA	1.0	1.0	5-Oct-16	18-Nov-20	INR	Diversified Banking Inst	Sr Unsecured
EK6151998	Credit Agricole Corporate & Investment Bank SA	18.0	18.0	19-Nov-14	27-Nov-19	NZD	Diversified Banking Inst	Sr Unsecured
EK2958115	Credit Agricole Corporate & Investment Bank SA	3.3	3.3	23-May-14	30-May-19	JPY	Diversified Banking Inst	Sr Unsecured
EK3525236	Credit Agricole Corporate & Investment Bank SA	42.7	42.7	18-Jun-14	20-Jun-18	AUD	Diversified Banking Inst	Sr Unsecured
EK6315635	Credit Agricole Corporate & Investment Bank SA	16.6	16.6	28-Nov-14	18-Dec-19	INR	Diversified Banking Inst	Sr Unsecured
EJ9132485	Credit Agricole Corporate & Investment Bank SA	20.0	20.0	31-Oct-13	26-Nov-18	MXN	Diversified Banking Inst	Sr Unsecured
LW1885091	Credit Agricole Corporate & Investment Bank SA	3.0	3.0	19-May-16	24-Jan-20	BRL	Diversified Banking Inst	Sr Unsecured
EK2824606	Credit Agricole Corporate & Investment Bank SA	74.9	74.9	15-May-14	4-Jun-18	JPY	Diversified Banking Inst	Sr Unsecured
LW3308753	Credit Agricole Corporate & Investment Bank SA	1.0	1.0	1-Jun-16	28-Jun-19	BRL	Diversified Banking Inst	Sr Unsecured
EK3821015	Credit Agricole Corporate & Investment Bank SA	1.0	1.0	11-Jul-14	30-Jul-19	JPY	Diversified Banking Inst	Sr Unsecured
EK4780368	Credit Agricole Corporate & Investment Bank SA	8.7	8.7	5-Sep-14	26-Sep-17	BRL	Diversified Banking Inst	Sr Unsecured
EJ8800934	Credit Agricole Corporate & Investment Bank SA	136.2	136.2	11-Oct-13	26-Oct-17	JPY	Diversified Banking Inst	Sr Unsecured
EJ7102126	Credit Agricole Corporate & Investment Bank SA	0.4	0.4	25-Jun-13	9-Jul-20	BRL	Diversified Banking Inst	Sr Unsecured
EJ7102027	Credit Agricole Corporate & Investment Bank SA	1.2	1.2	25-Jun-13	9-Jul-18	JPY	Diversified Banking Inst	Sr Unsecured
EK0205576	Credit Agricole Corporate & Investment Bank SA	103.7	103.7	10-Jan-14	25-Jan-18	JPY	Diversified Banking Inst	Sr Unsecured
EJ6772234	Credit Agricole Corporate & Investment Bank SA	5.5	5.5	14-May-13	18-Dec-17	MXN	Diversified Banking Inst	Sr Unsecured
EJ8319067	Credit Agricole Corporate & Investment Bank SA	54.7	54.7	12-Sep-13	24-Sep-20	JPY	Diversified Banking Inst	Sr Unsecured
LW4204936	Credit Agricole Corporate & Investment Bank SA	25.6	25.6	9-Jun-16	18-Jun-20	NZD	Diversified Banking Inst	Sr Unsecured
EK7193387	Credit Agricole Corporate & Investment Bank SA	2.5	2.5	20-Jan-15	27-Feb-19	IDR	Diversified Banking Inst	Sr Unsecured
EK9133761	Credit Agricole Corporate & Investment Bank SA	4.7	4.7	13-May-15	29-May-18	INR	Diversified Banking Inst	Sr Unsecured
EK3205524	Credit Agricole Corporate & Investment Bank SA	7.7	7.7	2-Jun-14	26-Jun-17	BRL	Diversified Banking Inst	Sr Unsecured
EK5909537	Credit Agricole Corporate & Investment Bank SA	25.6	25.6	7-Nov-14	21-Nov-19	MXN	Diversified Banking Inst	Sr Unsecured
LW4075922	Credit Agricole Corporate & Investment Bank SA	7.0	7.0	10-Jun-16	28-Jun-19	INR	Diversified Banking Inst	Sr Unsecured
EK7471890	DNB Bank ASA	132.9	132.9	10-Feb-15	17-Feb-20	NOK	Commer Banks Non-US	Sr Unsecured
EK5633731	Department of L'essonne France	50.2	50.2	22-Oct-14	4-May-29	EUR	Regional Authority	Sr Unsecured
LW0768645	Deutsche Kreditbank AG	570.0	570.0	1-Jun-16	8-Jun-21	EUR	Money Center Banks	Sr Unsecured
25389JAL0	Digital Realty Trust LP	500.0	500.0	18-Jun-15	1-Jul-22	USD	REITS-Diversified	Sr Unsecured
AL7978003	Dongjiang Environmental Co Ltd	86.9	86.9	8-Mar-17	10-Mar-20	CNY	Recycling	Unsecured
QZ8109931	Electricite de France SA	1,932.0	1,932.0	6-Oct-16	13-Oct-26	EUR	Electric-Generation	Sr Unsecured
QJ1388405	Electricite de France SA	1,250.0	1,250.0	7-Oct-15	13-Oct-25	USD	Electric-Generation	Sr Unsecured
EJ9330295	Electricite de France SA	1,899.8	1,899.8	20-Nov-13	27-Apr-21	EUR	Electric-Generation	Sr Unsecured
AM2350487	Electricite de France SA	171.0	171.0	20-Jan-17	26-Jan-29	JPY	Electric-Generation	Sr Unsecured
AM2350479	Electricite de France SA	55.8	55.8	20-Jan-17	26-Jan-32	JPY	Electric-Generation	Sr Unsecured
AM0720368	Enel Finance International NV	1,325.5	1,325.5	9-Jan-17	16-Sep-24	EUR	Electric-Integrated	Sr Unsecured
EK6606983	Energia Eolica SA	204.0	191.7	15-Dec-14	30-Aug-34	USD	Energy-Alternate Sources	1st lien
AM8700784	Engie SA	755.9	755.9	15-Mar-17	27-Mar-24	EUR	Electric-Integrated	Sr Unsecured
EK2515238	Engie SA	1,645.1	1,645.1	12-May-14	19-May-20	EUR	Electric-Integrated	Sr Unsecured
AM8702772	Engie SA	863.9	863.9	15-Mar-17	27-Mar-28	EUR	Electric-Integrated	Sr Unsecured
EK2700996	Engie SA	1,782.2	1,782.2	12-May-14	19-May-26	EUR	Electric-Integrated	Sr Unsecured
AM8687338	Entra ASA	88.5	88.5	15-Mar-17	20-Mar-24	NOK	Real Estate Mgmt/Service	Sr Unsecured
QZ5950949	Entra ASA	123.2	123.2	16-Sep-16	22-Sep-23	NOK	Real Estate Mgmt/Service	Sr Unsecured
AM6590567	Equity One Inc	100.0	100.0	20-Apr-16	11-May-26	USD	REITS-Shopping Centers	Sr Unsecured

Source: Bloomberg





## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
29874QCW2	European Bank for Reconstruction & Development	650.0	650.0	13-Jul-16	22-Jul-19	USD	Supranational Bank	Sr Unsecured
29874QCN2	European Bank for Reconstruction & Development	250.0	250.0	10-Sep-13	10-Apr-18	USD	Supranational Bank	Sr Unsecured
EK8050461	European Bank for Reconstruction & Development	15.3	15.3	18-Feb-15	27-Mar-19	IDR	Supranational Bank	Sr Unsecured
EK8153604	European Bank for Reconstruction & Development	20.9	20.9	18-Mar-15	24-Apr-19	IDR	Supranational Bank	Sr Unsecured
EK9861320	European Bank for Reconstruction & Development	17.1	17.1	16-Jun-15	28-Jan-19	INR	Supranational Bank	Sr Unsecured
EK8734429	European Bank for Reconstruction & Development	17.4	17.4	21-Apr-15	28-May-19	IDR	Supranational Bank	Sr Unsecured
EK9642043	European Bank for Reconstruction & Development	22.6	22.6	8-Jun-15	10-Jan-18	INR	Supranational Bank	Sr Unsecured
JK5016841	European Bank for Reconstruction & Development	13.3	13.3	15-Mar-16	15-Oct-18	INR	Supranational Bank	Sr Unsecured
AF1901590	European Bank for Reconstruction & Development	0.9	0.9	26-Jun-15	7-Aug-18	RUB	Supranational Bank	Sr Unsecured
JV8973655	European Bank for Reconstruction & Development	13.3	13.3	20-Jan-16	19-Feb-19	IDR	Supranational Bank	Sr Unsecured
JV0414666	European Bank for Reconstruction & Development	12.1	12.1	17-Nov-15	17-Dec-18	IDR	Supranational Bank	Sr Unsecured
EK0871583	European Bank for Reconstruction & Development	10.3	10.3	20-Feb-14	25-Sep-18	NZD	Supranational Bank	Sr Unsecured
LW1767877	European Bank for Reconstruction & Development	9.8	9.8	18-May-16	17-Jun-19	IDR	Supranational Bank	Sr Unsecured
EK4084597	European Bank for Reconstruction & Development	49.4	49.4	25-Jul-14	28-Jul-17	BRL	Supranational Bank	Sr Unsecured
EK3447506	European Bank for Reconstruction & Development	8.6	8.6	19-Jun-14	28-Jul-17	NZD	Supranational Bank	Sr Unsecured
EK9636169	European Bank for Reconstruction & Development	0.9	0.9	4-Jun-15	10-Jul-18	RUB	Supranational Bank	Sr Unsecured
EK8168917	European Bank for Reconstruction & Development	14.9	14.9	19-Mar-15	30-Oct-17	BRL	Supranational Bank	Sr Unsecured
EK9354367	European Bank for Reconstruction & Development	1.1	1.1	13-May-15	19-Jun-17	RUB	Supranational Bank	Sr Unsecured
JK5018235	European Bank for Reconstruction & Development	20.0	20.0	15-Mar-16	10-Oct-18	IDR	Supranational Bank	Sr Unsecured
EJ7847795	European Bank for Reconstruction & Development	67.9	67.9	6-Aug-13	26-May-17	BRL	Supranational Bank	Sr Unsecured
EK6690763	European Bank for Reconstruction & Development	17.0	17.0	18-Dec-14	28-Jun-17	BRL	Supranational Bank	Sr Unsecured
QZ7639987	European Bank for Reconstruction & Development	12.3	12.3	14-Sep-16	15-Apr-19	IDR	Supranational Bank	Sr Unsecured
EK1339226	European Bank for Reconstruction & Development	40.0	40.0	18-Mar-14	28-Sep-17	BRL	Supranational Bank	Sr Unsecured
EI6264101	European Bank for Reconstruction & Development	15.1	15.1	25-Mar-11	30-Mar-17	BRL	Supranational Bank	Sr Unsecured
EI6899625	European Bank for Reconstruction & Development	8.2	8.2	24-May-11	25-May-17	BRL	Supranational Bank	Sr Unsecured
EK3605277	European Bank for Reconstruction & Development	7.8	7.8	19-Jun-14	28-Jul-17	AUD	Supranational Bank	Sr Unsecured
EK8215031	European Bank for Reconstruction & Development	2.5	2.5	11-Mar-15	18-Apr-17	RUB	Supranational Bank	Sr Unsecured
EK0028036	European Bank for Reconstruction & Development	9.8	9.8	18-Dec-13	20-Jun-18	AUD	Supranational Bank	Sr Unsecured
EI7243252	European Bank for Reconstruction & Development	10.0	10.0	22-Jun-11	23-Jun-17	BRL	Supranational Bank	Sr Unsecured
QZ7160273	European Investment Bank	1,120.6	1,120.6	28-Sep-16	13-Nov-37	EUR	Supranational Bank	Sr Unsecured
EJ9276548	European Investment Bank	225.8	225.8	7-Nov-13	15-Sep-17	ZAR	Supranational Bank	Sr Unsecured
298785GQ3	European Investment Bank	1,000.0	1,000.0	7-Oct-14	15-Oct-24	USD	Supranational Bank	Sr Unsecured
298785HD1	European Investment Bank	1,500.0	1,500.0	6-Apr-16	13-Apr-26	USD	Supranational Bank	Sr Unsecured
EJ4271650	European Investment Bank	320.8	320.8	31-Oct-12	13-Nov-23	SEK	Supranational Bank	Sr Unsecured
EK4710878	European Investment Bank	2,322.3	2,322.3	3-Sep-14	13-Nov-26	EUR	Supranational Bank	Sr Unsecured
EJ7525862	European Investment Bank	3,925.4	3,925.4	11-Jul-13	15-Nov-19	EUR	Supranational Bank	Sr Unsecured
UV5766679	European Investment Bank	2,134.8	2,134.8	20-Aug-15	15-Nov-23	EUR	Supranational Bank	Sr Unsecured
EJ1271687	European Investment Bank	554.5	554.5	10-Apr-12	23-Apr-19	SEK	Supranational Bank	Sr Unsecured
AM1146993	European Investment Bank	334.2	334.2	11-Jan-17	19-Jul-22	SEK	Supranational Bank	Sr Unsecured
QJ4281714	European Investment Bank	380.0	380.0	27-Oct-15	5-Nov-20	CAD	Supranational Bank	Sr Unsecured
EK1494088	European Investment Bank	3,012.8	3,012.8	26-Mar-14	7-Mar-20	GBP	Supranational Bank	Sr Unsecured
AM6099163	European Investment Bank	82.6	82.6	21-Feb-17	2-Mar-27	SEK	Supranational Bank	Sr Unsecured
EK0981200	European Investment Bank	46.2	46.2	26-Feb-14	12-Mar-18	ZAR	Supranational Bank	Sr Unsecured
XS149097163	European Investment Bank	378.3	378.3	9-Sep-16	16-Sep-21	CAD	Supranational Bank	Sr Unsecured
EK0159625	European Investment Bank	387.0	387.0	8-Jan-14	4-Feb-25	CHF	Supranational Bank	Sr Unsecured
JV6111381	European Investment Bank	116.4	116.4	11-Jan-16	20-Jan-21	SEK	Supranational Bank	Sr Unsecured
EJ7611811	European Investment Bank	276.5	276.5	17-Jul-13	24-Jul-20	SEK	Supranational Bank	Sr Unsecured
EK1340133	European Investment Bank	48.9	48.9	18-Mar-14	25-Mar-39	JPY	Supranational Bank	Sr Unsecured
EK7771257	European Investment Bank	106.2	106.2	26-Feb-15	27-Mar-19	TRY	Supranational Bank	Sr Unsecured
302168FY3	Export Development Canada	300.0	300.0	1-Dec-15	10-Dec-18	USD	Sovereign Agency	Sr Unsecured
ALS180057	Export-Import Bank of China/The	145.3	145.3	1-Dec-16	7-Dec-21	CNY	Export/Import Bank	Unsecured
EK8072036	Export-Import Bank of India	500.0	500.0	24-Mar-15	1-Apr-20	USD	Export/Import Bank	Sr Unsecured
302154BG3	Export-Import Bank of Korea	500.0	500.0	20-Feb-13	27-Feb-18	USD	Export/Import Bank	Sr Unsecured
302154B21	Export-Import Bank of Korea	400.0	400.0	2-Feb-16	11-Feb-21	USD	Export/Import Bank	Sr Unsecured
AM4428299	Fabege AB	33.8	33.8	8-Feb-17	16-Sep-19	SEK	Real Estate Mgmt/Service	Sr Unsecured
LW1340816	Fabege AB	71.9	71.9	13-May-16	23-May-18	SEK	Real Estate Mgmt/Service	Sr Unsecured
AL3762906	Fabege AB	32.5	32.5	21-Nov-16	28-Nov-18	SEK	Real Estate Mgmt/Service	Unsecured
EK5285912	Fastighets AB Forvaltaren	55.4	55.4	2-Oct-14	10-Oct-19	SEK	Real Estate Mgmt/Service	Sr Unsecured
AF1270871	Fastighets AB Forvaltaren	23.7	23.7	26-Jun-15	10-Jul-20	SEK	Real Estate Mgmt/Service	Sr Unsecured
31572UAF3	Fibria Overseas Finance Ltd	700.0	700.0	11-Jan-17	17-Jan-27	USD	Paper&Related Products	Sr Unsecured
JK9255643	Fonciere Des Regions	560.6	560.6	9-May-16	20-May-26	EUR	REITS-Diversified	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
EK9010100	Fortum Varme Holding samagt med Stockholms stad AB	182.5	182.5	6-May-15	18-May-22	SEK	Electric-Integrated	Sr Unsecured
EK9009326	Fortum Varme Holding samagt med Stockholms stad AB	121.7	121.7	6-May-15	18-May-21	SEK	Electric-Integrated	Sr Unsecured
AL9974240	French Republic Government Bond OAT	7,548.5	7,548.5	3-Jan-17	25-Jun-39	EUR	Sovereign	Sr Unsecured
373334KE0	Georgia Power Co	325.0	325.0	2-Mar-16	1-Apr-26	USD	Electric-Integrated	Sr Unsecured
EK9852808	Goldwind New Energy HK Investment Ltd	300.0	300.0	16-Jul-15	24-Jul-18	USD	Energy-Alternate Sources	Sr Unsecured
EK3124519	Green Arrow 11 SRL	4.4	3.8	16-May-14	16-May-19	EUR	Energy-Alternate Sources	Sr Unsecured
39260XA8	Green Bancorp Inc	35.0	35.0	8-Dec-16	15-Dec-26	USD	Commer Banks-Southern US	Subordinated
39260XA6	Green Bancorp Inc	35.0	35.0	8-Dec-16	15-Dec-26	USD	Commer Banks-Southern US	Subordinated
QZ2149677	Greenko Investment Co	500.0	500.0	10-Aug-16	16-Aug-23	USD	Electric-Generation	1st lien
AL7476388	Guangdong Huaxing Bank Co Ltd	144.2	144.2	14-Dec-16	21-Dec-19	CNY	Commer Banks Non-US	Unsecured
QJ8834963	HSBC France SA	545.1	545.1	25-Nov-15	3-Dec-20	EUR	Commer Banks Non-US	Sr Unsecured
AM1711531	Hebei Financial Leasing Co Ltd	14.6	14.6	16-Jan-17	23-Jan-20	CNY	Finance-Leasing Compan	Unsecured
EK3444925	Hera SpA	679.6	679.6	26-Jun-14	4-Jul-24	EUR	Electric-Integrated	Sr Unsecured
JK5976846	Hero Wind Energy Pvt Ltd	19.1	19.1	15-Feb-16	15-Aug-19	INR	Energy-Alternate Sources	Secured
JK3795321	Hyundai Capital Services Inc	500.0	500.0	7-Mar-16	16-Mar-21	USD	Auto-Cars/Light Trucks	Sr Unsecured
QJ8924970	IDBI Bank Ltd/DIFC Dubai	350.0	350.0	23-Nov-15	30-Nov-20	USD	Commer Banks Non-US	Sr Unsecured
QJ6463138	ING Bank NV	532.3	532.3	17-Nov-15	24-Nov-20	EUR	Commer Banks Non-US	Sr Unsecured
44987DAJ5	ING Bank NV	800.0	800.0	17-Nov-15	26-Nov-18	USD	Commer Banks Non-US	Sr Unsecured
JV4075612	ING Bank NV	62.5	62.5	21-Dec-15	29-Dec-20	USD	Commer Banks Non-US	Unsecured
AL4333038	Iberdrola Finanzas SA	805.8	805.8	24-Nov-16	7-Mar-24	EUR	Electric-Integrated	Sr Unsecured
AM4156023	Iberdrola Finanzas SA	106.1	106.1	6-Feb-17	20-Feb-24	EUR	Electric-Integrated	Sr Unsecured
AM6773742	Iberdrola Finanzas SA	1,057.5	1,057.5	28-Feb-17	7-Mar-25	EUR	Electric-Integrated	Sr Unsecured
JK8056422	Iberdrola International BV	1,129.8	1,129.8	14-Apr-16	21-Apr-26	EUR	Electric-Integrated	Sr Unsecured
QZ4989443	Iberdrola International BV	786.9	786.9	8-Sep-16	15-Sep-25	EUR	Electric-Integrated	Sr Unsecured
EK1707232	Iberdrola International BV	1,036.8	1,036.8	8-Apr-14	24-Oct-22	EUR	Electric-Integrated	Sr Unsecured
LW8411461	Industrial Bank Co Ltd	2,985.6	2,985.6	11-Jul-16	18-Jul-19	CNY	Commer Banks Non-US	Unsecured
JV7889001	Industrial Bank Co Ltd	1,521.1	1,521.1	25-Jan-16	29-Jan-19	CNY	Commer Banks Non-US	Unsecured
AL1805566	Industrial Bank Co Ltd	2,907.4	2,907.4	10-Nov-16	17-Nov-21	CNY	Commer Banks Non-US	Unsecured
EK5547113	Innovatec SpA	12.7	12.7	17-Oct-14	21-Oct-20	EUR	Energy-Alternate Sources	Sr Unsecured
QJ4393550	International Bank for Reconstruction & Development	46.1	46.1	27-Oct-15	4-Nov-20	BRL	Supranational Bank	Sr Unsecured
EI1567623	International Bank for Reconstruction & Development	165.9	147.7	19-Feb-10	5-Mar-20	MXN	Supranational Bank	Sr Unsecured
EJ7036423	International Bank for Reconstruction & Development	40.0	40.0	31-May-13	7-Jun-23	ZAR	Supranational Bank	Sr Unsecured
EK7748933	International Bank for Reconstruction & Development	29.2	29.2	25-Feb-15	4-Mar-22	TRY	Supranational Bank	Sr Unsecured
45905URL0	International Bank for Reconstruction & Development	600.0	600.0	19-Feb-15	3-Mar-25	USD	Supranational Bank	Sr Unsecured
EJ2920373	International Bank for Reconstruction & Development	23.2	23.2	18-Jul-12	26-Jul-19	RUB	Supranational Bank	Sr Unsecured
EK9064537	International Bank for Reconstruction & Development	17.4	17.4	8-May-15	18-May-25	MXN	Supranational Bank	Sr Unsecured
EK3295160	International Bank for Reconstruction & Development	522.4	522.4	11-Jun-14	23-Jun-19	SEK	Supranational Bank	Sr Unsecured
EI1569744	International Bank for Reconstruction & Development	122.6	61.4	19-Feb-10	2-Mar-20	COP	Supranational Bank	Sr Unsecured
45905UWL4	International Bank for Reconstruction & Development	5.0	5.0	23-May-16	31-May-36	USD	Supranational Bank	Sr Unsecured
EJ7191152	International Bank for Reconstruction & Development	16.1	16.1	13-Jun-13	20-Jun-23	RUB	Supranational Bank	Sr Unsecured
45905UQU1	International Bank for Reconstruction & Development	20.0	20.0	3-Nov-14	28-Nov-34	USD	Supranational Bank	Sr Unsecured
EK8890221	International Bank for Reconstruction & Development	103.3	103.3	9-Mar-15	12-May-23	USD	Supranational Bank	Sr Unsecured
EK1822395	International Bank for Reconstruction & Development	278.0	278.0	16-Apr-14	29-Apr-19	AUD	Supranational Bank	Sr Unsecured
EI9993862	International Bank for Reconstruction & Development	27.8	19.9	24-Jan-12	31-Jan-19	PLN	Supranational Bank	Sr Unsecured
EK5583159	International Bank for Reconstruction & Development	91.0	91.0	17-Oct-14	12-Jan-22	USD	Supranational Bank	Sr Unsecured
EK9187114	International Bank for Reconstruction & Development	150.0	150.0	15-Jun-15	5-Jul-23	USD	Supranational Bank	Sr Unsecured
EI1356837	International Bank for Reconstruction & Development	218.6	207.6	2-Feb-10	15-Dec-17	SEK	Supranational Bank	Sr Unsecured
EJ4683086	International Bank for Reconstruction & Development	7.5	7.5	3-Dec-12	10-Dec-19	MYR	Supranational Bank	Sr Unsecured
JK0120903	International Bank for Reconstruction & Development	1.9	1.9	22-Jan-16	11-Mar-21	BRL	Supranational Bank	Sr Unsecured
JK5970955	International Bank for Reconstruction & Development	4.5	4.5	24-Mar-16	26-Apr-19	BRL	Supranational Bank	Sr Unsecured
45905UZT4	International Bank for Reconstruction & Development	500.0	500.0	31-Oct-16	22-Nov-21	USD	Supranational Bank	Unsecured
EK8196660	International Bank for Reconstruction & Development	1.0	1.0	9-Mar-15	21-Apr-20	INR	Supranational Bank	Sr Unsecured
EK7247811	International Bank for Reconstruction & Development	7.1	7.1	27-Jan-15	27-Feb-20	INR	Supranational Bank	Sr Unsecured
45905UWE0	International Bank for Reconstruction & Development	280.0	280.0	14-Apr-16	1-Oct-18	USD	Supranational Bank	Sr Unsecured
EI1566864	International Bank for Reconstruction & Development	67.5	67.5	19-Feb-10	19-May-17	NOK	Supranational Bank	Sr Unsecured
EK2740786	International Bank for Reconstruction & Development	159.7	159.7	12-May-14	21-May-18	TRY	Supranational Bank	Sr Unsecured
QJ0257544	International Bank for Reconstruction & Development	1.0	1.0	24-Sep-15	4-Nov-20	USD	Supranational Bank	Sr Unsecured
EI1688569	International Bank for Reconstruction & Development	1.4	1.4	25-Feb-10	9-Mar-20	JPY	Supranational Bank	Sr Unsecured
EK2735083	International Bank for Reconstruction & Development	210.4	210.4	12-May-14	21-May-18	BRL	Supranational Bank	Sr Unsecured
45905UHT4	International Bank for Reconstruction & Development	2.1	2.1	19-May-11	24-May-21	USD	Supranational Bank	Sr Unsecured
EI1572185	International Bank for Reconstruction & Development	40.6	11.1	19-Feb-10	19-May-17	HUF	Supranational Bank	Sr Unsecured

Source: Bloomberg





## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
QJ0257528	International Bank for Reconstruction & Development	1.0	1.0	24-Sep-15	4-Nov-25	USD	Supranational Bank	Sr Unsecured
EK8175870	International Bank for Reconstruction & Development	1.8	1.8	5-Mar-15	27-Mar-20	INR	Supranational Bank	Unsecured
EI4477481	International Bank for Reconstruction & Development	15.1	15.1	22-Oct-10	2-Nov-20	SEK	Supranational Bank	Sr Unsecured
EI1692041	International Bank for Reconstruction & Development	2.7	2.7	25-Feb-10	19-May-17	EUR	Supranational Bank	Sr Unsecured
EK7810246	International Bank for Reconstruction & Development	4.0	4.0	23-Jan-15	26-Feb-20	INR	Supranational Bank	Unsecured
EJ5728567	International Bank for Reconstruction & Development	3.9	3.9	1-Feb-13	28-Feb-19	MXN	Supranational Bank	Sr Unsecured
LW5299018	International Bank for Reconstruction & Development	2.1	2.1	6-Jun-16	29-Jun-21	INR	Supranational Bank	Unsecured
45905ULF9	International Bank for Reconstruction & Development	5.0	5.0	5-Jul-12	12-Jul-22	USD	Supranational Bank	Sr Unsecured
EK9996787	International Bank for Reconstruction & Development	4.1	4.1	26-May-15	25-Jun-20	INR	Supranational Bank	Unsecured
EK6959358	International Bank for Reconstruction & Development	5.6	5.6	22-Dec-14	30-Jan-20	INR	Supranational Bank	Sr Unsecured
EJ3920026	International Bank for Reconstruction & Development	43.7	43.7	4-Oct-12	24-Oct-22	AUD	Supranational Bank	Sr Unsecured
JK5925819	International Bank for Reconstruction & Development	1.7	1.7	23-Mar-16	28-Apr-21	BRL	Supranational Bank	Sr Unsecured
LW0597184	International Bank for Reconstruction & Development	12.5	12.5	9-May-16	2-Jun-21	INR	Supranational Bank	Sr Unsecured
EJ3903311	International Bank for Reconstruction & Development	97.0	97.0	2-Oct-12	24-Oct-17	AUD	Supranational Bank	Sr Unsecured
AL1243370	International Bank for Reconstruction & Development	100.0	100.0	4-Nov-16	15-Dec-19	USD	Supranational Bank	Sr Unsecured
JK4449324	International Bank for Reconstruction & Development	4.9	4.9	8-Mar-16	30-Mar-21	INR	Supranational Bank	Sr Unsecured
JK6709220	International Bank for Reconstruction & Development	4.5	4.5	4-Apr-16	28-Apr-21	INR	Supranational Bank	Sr Unsecured
JV6128823	International Bank for Reconstruction & Development	8.9	8.9	5-Jan-16	29-Jan-21	INR	Supranational Bank	Sr Unsecured
LW5451338	International Bank for Reconstruction & Development	100.0	100.0	13-Jun-16	29-Jun-26	USD	Supranational Bank	Sr Unsecured
LW5079386	International Bank for Reconstruction & Development	3.0	3.0	20-Jun-16	28-Jun-21	INR	Supranational Bank	Sr Unsecured
EK7899397	International Bank for Reconstruction & Development	1.0	1.0	23-Feb-15	30-Mar-20	INR	Supranational Bank	Sr Unsecured
QJ0257510	International Bank for Reconstruction & Development	1.0	1.0	24-Sep-15	4-Nov-22	USD	Supranational Bank	Sr Unsecured
45905ULE2	International Bank for Reconstruction & Development	10.0	6.6	5-Jul-12	12-Jul-17	USD	Supranational Bank	Sr Unsecured
EK5164539	International Bank for Reconstruction & Development	12.7	12.7	23-Sep-14	7-Oct-26	EUR	Supranational Bank	Sr Unsecured
UV5882336	International Bank for Reconstruction & Development	83.5	83.5	15-Jun-15	5-Jul-23	USD	Supranational Bank	Unsecured
EI7757095	International Bank for Reconstruction & Development	10.1	10.1	25-Jul-11	9-Aug-21	CAD	Supranational Bank	Sr Unsecured
EI8257970	International Bank for Reconstruction & Development	9.6	9.6	26-Sep-11	6-Oct-21	AUD	Supranational Bank	Sr Unsecured
EK8789076	International Bank for Reconstruction & Development	80.0	80.0	22-Apr-15	8-May-25	USD	Supranational Bank	Sr Unsecured
AF1226279	International Bank for Reconstruction & Development	50.0	50.0	12-Jun-15	3-Jul-25	USD	Supranational Bank	Sr Unsecured
EJ5262690	International Bank for Reconstruction & Development	9.2	9.2	4-Jan-13	31-Jan-18	ZAR	Supranational Bank	Sr Unsecured
EK7561823	International Bank for Reconstruction & Development	34.1	34.1	13-Feb-15	25-Feb-45	EUR	Supranational Bank	Sr Unsecured
45905UVR2	International Bank for Reconstruction & Development	45.0	45.0	18-Mar-16	29-Jan-19	USD	Supranational Bank	Sr Unsecured
EK4153392	International Bank for Reconstruction & Development	66.8	66.8	23-Jul-14	7-Aug-24	EUR	Supranational Bank	Sr Unsecured
EK8752462	International Bank for Reconstruction & Development	1.0	1.0	9-Apr-15	22-May-20	INR	Supranational Bank	Sr Unsecured
EK3354868	International Bank for Reconstruction & Development	22.4	22.4	16-May-14	3-Jun-19	AUD	Supranational Bank	Sr Unsecured
45950VHX7	International Finance Corp	1,200.0	1,200.0	30-Mar-16	7-Apr-26	USD	Supranational Bank	Sr Unsecured
EK3399277	International Finance Corp	80.3	80.3	17-Jun-14	26-Jun-17	CNY	Supranational Bank	Sr Unsecured
45950VGQ3	International Finance Corp	49.4	49.4	31-Jul-15	10-Aug-20	INR	Supranational Bank	Sr Unsecured
45950VHE9	International Finance Corp	500.0	500.0	16-Nov-15	27-Nov-18	USD	Supranational Bank	Sr Unsecured
JK8968626	International Finance Corp	43.6	43.6	22-Apr-16	29-Apr-21	MXN	Supranational Bank	Sr Unsecured
EK5208609	International Finance Corp	9.4	9.4	1-Sep-14	26-Sep-19	NZD	Supranational Bank	Sr Unsecured
45950VJV9	International Finance Corp	5.3	5.3	19-Sep-16	15-Sep-26	USD	Supranational Bank	Sr Unsecured
AM9785537	International Finance Corp	90.6	90.6	22-Mar-17	5-Apr-27	SEK	Supranational Bank	Sr Unsecured
45950VEC6	International Finance Corp	5.6	5.6	15-Sep-14	15-Sep-24	USD	Supranational Bank	Sr Unsecured
JV2082685	International Finance Corp	65.5	65.5	25-Nov-15	10-Dec-24	ZAR	Supranational Bank	Sr Unsecured
45950VJS6	International Finance Corp	5.7	5.7	15-Aug-16	15-Aug-21	USD	Supranational Bank	Sr Unsecured
EK4409083	International Finance Corp	41.9	41.9	11-Aug-14	19-Aug-34	PEN	Supranational Bank	Sr Unsecured
UV6345713	International Finance Corp	0.8	0.8	18-Aug-15	25-Sep-18	BRL	Supranational Bank	Sr Unsecured
JV5422144	International Finance Corp	4.8	4.8	20-Nov-15	22-Dec-17	NZD	Supranational Bank	Sr Unsecured
EK4041977	International Finance Corp	92.6	92.6	22-Jul-14	27-Jul-17	BRL	Supranational Bank	Sr Unsecured
EK4196953	International Finance Corp	100.0	100.0	1-Aug-14	20-Aug-24	USD	Supranational Bank	Sr Unsecured
QJ6541503	International Finance Corp	2.5	2.5	9-Oct-15	30-Nov-17	TRY	Supranational Bank	Sr Unsecured
45950VFK7	International Finance Corp	3.0	3.0	17-Feb-15	15-Feb-25	USD	Supranational Bank	Sr Unsecured
45950VJT4	International Finance Corp	3.3	3.3	29-Aug-16	15-Sep-21	USD	Supranational Bank	Sr Unsecured
EJ5423458	International Finance Corp	10.0	10.0	4-Feb-13	15-Feb-23	USD	Supranational Bank	Sr Unsecured
45950VFX9	International Finance Corp	0.7	0.7	13-Apr-15	15-Apr-20	USD	Supranational Bank	Sr Unsecured
45950VGJ9	International Finance Corp	3.1	3.1	8-Jun-15	15-Jun-20	USD	Supranational Bank	Sr Unsecured
EJ8740387	International Finance Corp	20.9	20.9	8-Oct-13	16-Oct-18	AUD	Supranational Bank	Unsecured
45950VEV4	International Finance Corp	1.2	1.2	8-Dec-14	15-Dec-20	USD	Supranational Bank	Sr Unsecured
45950VVF3	International Finance Corp	11.4	11.4	30-Mar-15	15-Apr-20	USD	Supranational Bank	Sr Unsecured

Source: Bloomberg



Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
AL3766071	International Finance Corp	6.2	6.2	18-Nov-16	19-Dec-19	BRL	Supranational Bank	Sr Unsecured
JK7714674	International Finance Corp	0.9	0.9	12-Apr-16	25-May-18	TRY	Supranational Bank	Unsecured
45950VGT7	International Finance Corp	1.2	1.2	14-Sep-15	15-Sep-20	USD	Supranational Bank	Sr Unsecured
45950VGM2	International Finance Corp	0.9	0.9	13-Jul-15	15-Jul-20	USD	Supranational Bank	Sr Unsecured
EK8287303	International Finance Corp	4.4	4.4	26-Mar-15	2-Apr-20	BRL	Supranational Bank	Sr Unsecured
45950VHF6	International Finance Corp	1.2	1.2	14-Dec-15	15-Dec-20	USD	Supranational Bank	Sr Unsecured
45950VFM3	International Finance Corp	3.2	3.2	2-Mar-15	15-Mar-25	USD	Supranational Bank	Sr Unsecured
45950VKF2	International Finance Corp	1.0	1.0	7-Nov-16	15-Nov-21	USD	Supranational Bank	Sr Unsecured
JK0871851	International Finance Corp	2.4	2.4	8-Feb-16	23-Mar-18	TRY	Supranational Bank	Unsecured
45950VKD7	International Finance Corp	4.6	4.6	24-Oct-16	15-Oct-26	USD	Supranational Bank	Sr Unsecured
45950VKK1	International Finance Corp	1.1	1.1	7-Nov-16	15-Nov-26	USD	Supranational Bank	Sr Unsecured
45950VGC4	International Finance Corp	0.8	0.8	27-Apr-15	15-May-25	USD	Supranational Bank	Sr Unsecured
45950VET9	International Finance Corp	1.9	1.9	24-Nov-14	15-Dec-24	USD	Supranational Bank	Sr Unsecured
JV5422151	International Finance Corp	2.3	2.3	7-Dec-15	25-Jan-18	TRY	Supranational Bank	Unsecured
45950VHV5	International Finance Corp	2.4	2.4	11-Apr-16	15-Apr-26	USD	Supranational Bank	Sr Unsecured
45950VGK6	International Finance Corp	1.5	1.5	22-Jun-15	15-Jun-25	USD	Supranational Bank	Sr Unsecured
AM2769637	Jain International Trading BV	200.0	200.0	25-Jan-17	1-Feb-22	USD	Machinery-Farm	Sr Unsecured
AL5884401	Jiangsu Nantong Rural Commercial Bank Co Ltd	72.7	72.7	6-Dec-16	14-Dec-21	CNY	Commer Banks Non-US	Unsecured
LW7954560	Jiangxi Bank Co Ltd	523.6	523.6	7-Jul-16	14-Jul-19	CNY	Commer Banks Non-US	Unsecured
QZ0915236	Jiangxi Bank Co Ltd	225.2	225.2	1-Aug-16	8-Aug-21	CNY	Commer Banks Non-US	Unsecured
LW7954693	Jiangxi Bank Co Ltd	224.4	224.4	7-Jul-16	14-Jul-21	CNY	Commer Banks Non-US	Unsecured
QZ0915129	Jiangxi Bank Co Ltd	225.2	225.2	1-Aug-16	8-Aug-19	CNY	Commer Banks Non-US	Unsecured
EK7347975	Kommunalbanken AS	500.0	500.0	4-Feb-15	11-Feb-25	USD	Sovereign Agency	Sr Unsecured
QZ9254967	Kommunalbanken AS	500.0	500.0	19-Oct-16	26-Oct-20	USD	Sovereign Agency	Sr Unsecured
JK4780793	Kommuninvest I Sverige AB	600.0	600.0	14-Mar-16	23-Apr-19	USD	Regional Agencies	Sr Unsecured
QZ9298485	Kommuninvest I Sverige AB	559.8	559.8	18-Oct-16	5-May-20	SEK	Regional Agencies	Sr Unsecured
UV3388856	Kreditanstalt fuer Wiederaufbau	1,558.5	1,558.5	23-Jul-15	5-Jun-20	GBP	Special Purpose Banks	Sr Unsecured
500769GF5	Kreditanstalt fuer Wiederaufbau	1,500.0	1,500.0	7-Oct-14	15-Oct-19	USD	Special Purpose Banks	Sr Unsecured
EK3739316	Kreditanstalt fuer Wiederaufbau	2,020.1	2,020.1	15-Jul-14	22-Jul-19	EUR	Special Purpose Banks	Sr Unsecured
EK8265135	Kreditanstalt fuer Wiederaufbau	454.4	454.4	26-Mar-15	2-Jul-20	AUD	Special Purpose Banks	Sr Unsecured
LW1038972	Kreditanstalt fuer Wiederaufbau	1,121.3	1,121.3	11-May-16	30-May-24	EUR	Special Purpose Banks	Sr Unsecured
500769GU2	Kreditanstalt fuer Wiederaufbau	1,000.0	1,000.0	10-Nov-15	30-Nov-20	USD	Special Purpose Banks	Sr Unsecured
JV7628425	Kreditanstalt fuer Wiederaufbau	117.4	117.4	20-Jan-16	27-Jan-21	SEK	Special Purpose Banks	Sr Unsecured
QJ2223320	Kreditanstalt fuer Wiederaufbau	1,655.7	1,655.7	19-Oct-15	27-Oct-20	EUR	Special Purpose Banks	Sr Unsecured
JV2027870	Kreditanstalt fuer Wiederaufbau	117.9	117.9	7-Dec-15	14-Dec-20	SEK	Special Purpose Banks	Sr Unsecured
500769HD9	Kreditanstalt fuer Wiederaufbau	1,500.0	1,500.0	22-Nov-16	30-Nov-21	USD	Special Purpose Banks	Sr Unsecured
LW1711453	LTC GB Ltd	400.0	400.0	19-May-16	26-May-21	USD	Auto-Cars/Light Trucks	Sr Unsecured
EJ7897147	Landwirtschaftliche Rentenbank	67.1	67.1	12-Aug-13	20-Aug-20	EUR	Special Purpose Banks	Sr Unsecured
EK1645291	Landwirtschaftliche Rentenbank	20.8	20.8	3-Apr-14	10-Apr-24	EUR	Special Purpose Banks	Sr Unsecured
EK9522468	Latvenergo AS	113.0	113.0	2-Jun-15	10-Jun-22	EUR	Electric-Integrated	Sr Unsecured
LW8907633	Link Finance Cayman 2009 Ltd/The	500.0	500.0	14-Jul-16	21-Jul-26	USD	REITS-Shopping Centers	Sr Unsecured
QJ0476581	Lm Group Holding A/S	58.3	58.3	29-Sep-15	8-Oct-20	NOK	Miscellaneous Manufactur	Secured
QZ9785317	MTR Corp CI Ltd	600.0	600.0	24-Oct-16	2-Nov-26	USD	Transport-Services	Sr Unsecured
575718AE1	Massachusetts Institute of Technology	370.0	370.0	22-Sep-14	1-Jul-38	USD	Schools	Unsecured
QZ6601384	Mexico City Airport Trust	1,000.0	1,000.0	22-Sep-16	31-Oct-26	USD	Airport Develop/Maint	Secured
QZ6601400	Mexico City Airport Trust	1,000.0	1,000.0	22-Sep-16	31-Oct-46	USD	Airport Develop/Maint	Secured
595620AR6	MidAmerican Energy Co	475.0	475.0	23-Jan-17	1-Aug-47	USD	Electric-Integrated	Secured
595620AQ8	MidAmerican Energy Co	375.0	375.0	23-Jan-17	1-May-27	USD	Electric-Integrated	Secured
606822AH7	Mitsubishi UFJ Financial Group Inc	500.0	500.0	6-Sep-16	13-Sep-23	USD	Diversified Banking Inst	Sr Unsecured
QZ8848793	Modern Land China Co Ltd	500.0	500.0	13-Oct-16	20-Oct-19	USD	Bldg-Residential/Commer	Sr Unsecured
617446888	Morgan Stanley	500.0	500.0	3-Jun-15	7-Dec-18	USD	Diversified Banking Inst	Sr Unsecured
QZ7132306	Municipality Finance PLC	500.0	500.0	26-Sep-16	21-Sep-21	USD	Regional Agencies	Sr Unsecured
62943WAB5	NRG Yield Operating LLC	500.0	500.0	22-Jun-15	15-Aug-24	USD	Independ Power Producer	Sr Unsecured
QZ8588290	NRW Bank	531.8	531.8	10-Nov-16	17-Nov-26	EUR	Special Purpose Banks	Sr Unsecured
QJ1445692	NRW Bank	535.2	535.2	3-Nov-15	10-Nov-25	EUR	Special Purpose Banks	Sr Unsecured
EJ9478268	NRW Bank	339.9	339.9	19-Nov-13	28-Nov-17	EUR	Special Purpose Banks	Sr Unsecured
EK5698064	NRW Bank	627.3	627.3	27-Oct-14	5-Nov-18	EUR	Special Purpose Banks	Sr Unsecured
LW9937118	NTPC Ltd	299.6	299.6	3-Aug-16	10-Aug-21	INR	Electric-Generation	Sr Unsecured
QJ5292348	Nacional Financiera SNC	500.0	500.0	29-Oct-15	5-Nov-20	USD	Sovereign Agency	Sr Unsecured
QZ4790148	Nacional Financiera SNC	106.4	106.4	30-Aug-16	1-Sep-23	MXN	Sovereign Agency	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
EK6420021	National Australia Bank Ltd	246.5	246.5	4-Dec-14	16-Dec-21	AUD	Commer Banks Non-US	Sr Unsecured
AM5981536	National Australia Bank Ltd	528.7	528.7	28-Feb-17	7-Sep-22	EUR	Commer Banks Non-US	Sr Unsecured
UV6506033	Nederlandse Waterschapsbank NV	1,111.7	1,111.7	25-Aug-15	3-Sep-25	EUR	Special Purpose Banks	Sr Unsecured
AM2017888	Nederlandse Waterschapsbank NV	339.7	339.7	17-Jan-17	25-Jan-23	SEK	Special Purpose Banks	Sr Unsecured
EK3569374	Nederlandse Waterschapsbank NV	680.1	680.1	26-Jun-14	3-Jul-19	EUR	Special Purpose Banks	Sr Unsecured
JK5297045	Nederlandse Waterschapsbank NV	1,250.0	1,250.0	18-Mar-16	24-Mar-26	USD	Special Purpose Banks	Sr Unsecured
EK9346835	Nelja Energia AS	55.9	55.9	22-May-15	2-Jun-21	EUR	Energy-Alternate Sources	Sr Unsecured
LW7218800	New Development Bank BRICS/The	447.9	447.9	13-Jul-16	19-Jul-21	CNY	Supranational Bank	Unsecured
LW5079394	Nomura Research Institute Ltd	97.7	97.7	9-Sep-16	16-Sep-26	JPY	Computer Services	Sr Unsecured
EK5849188	Nord-Troendelag Elektrisitetsverk Holding AS	59.0	59.0	4-Nov-14	13-Nov-19	NOK	Electric-Integrated	Sr Unsecured
EK5849725	Nord-Troendelag Elektrisitetsverk Holding AS	36.8	36.8	4-Nov-14	13-Nov-17	NOK	Electric-Integrated	Sr Unsecured
EK5849303	Nord-Troendelag Elektrisitetsverk Holding AS	14.7	14.7	4-Nov-14	12-Nov-21	NOK	Electric-Integrated	Sr Unsecured
65562QAW5	Nordic Investment Bank	500.0	500.0	22-Sep-14	30-Sep-21	USD	Supranational Bank	Sr Unsecured
LW2846365	Nordic Investment Bank	563.9	563.9	3-Jun-16	10-Jun-24	EUR	Supranational Bank	Sr Unsecured
UV8338070	Nordic Investment Bank	565.2	565.2	10-Sep-15	19-Sep-22	EUR	Supranational Bank	Unsecured
QZ5904250	Nordic Investment Bank	175.8	175.8	16-Sep-16	22-Sep-23	SEK	Supranational Bank	Sr Unsecured
EK8660863	Nordic Investment Bank	115.8	115.8	16-Apr-15	23-Apr-20	SEK	Supranational Bank	Sr Unsecured
JV6516704	Nordic Investment Bank	116.4	116.4	13-Jan-16	20-Jan-21	SEK	Supranational Bank	Sr Unsecured
EJ3429168	Nordic Investment Bank	75.5	75.5	28-Aug-12	7-Sep-32	SEK	Supranational Bank	Sr Unsecured
EJ8486791	Nordic Investment Bank	77.8	77.8	20-Sep-13	27-Sep-18	SEK	Supranational Bank	Sr Unsecured
AM1692798	Nordic Investment Bank	1.8	1.8	12-Jan-17	24-Feb-21	BRL	Supranational Bank	Sr Unsecured
EK0618927	Nordic Investment Bank	54.6	54.6	4-Feb-14	11-Feb-19	EUR	Supranational Bank	Sr Unsecured
690353S81	Overseas Private Investment Corp	10.0	10.0	30-Jan-17	15-Feb-28	USD	Sovereign Agency	Sr Unsecured
690353S57	Overseas Private Investment Corp	31.1	31.1	12-Dec-16	7-Jul-40	USD	Sovereign Agency	Unsecured
690353P92	Overseas Private Investment Corp	2.0	2.0	15-Aug-16	15-Aug-26	USD	Sovereign Agency	Sr Unsecured
690353D95	Overseas Private Investment Corp	46.5	43.0	9-Mar-15	10-Oct-25	USD	Sovereign Agency	Unsecured
690353N52	Overseas Private Investment Corp	15.0	14.8	13-Jun-16	15-Dec-33	USD	Sovereign Agency	Unsecured
690353N78	Overseas Private Investment Corp	30.2	30.2	20-Jun-16	15-Oct-33	USD	Sovereign Agency	Sr Unsecured
690353L88	Overseas Private Investment Corp	19.7	19.0	26-Feb-16	15-Jul-26	USD	Sovereign Agency	Unsecured
690353P76	Overseas Private Investment Corp	49.3	49.3	22-Aug-16	7-Jul-40	USD	Sovereign Agency	Sr Unsecured
690353K22	Overseas Private Investment Corp	37.6	36.8	2-Nov-15	15-Aug-26	USD	Sovereign Agency	Unsecured
690353H75	Overseas Private Investment Corp	11.8	11.8	16-Nov-15	7-Jul-40	USD	Sovereign Agency	Unsecured
690353Q67	Overseas Private Investment Corp	8.3	8.2	19-Sep-16	15-Dec-33	USD	Sovereign Agency	Unsecured
690353H26	Overseas Private Investment Corp	10.0	9.8	6-Jul-15	15-Aug-26	USD	Sovereign Agency	Unsecured
690353S65	Overseas Private Investment Corp	25.3	25.3	12-Dec-16	15-Feb-28	USD	Sovereign Agency	Unsecured
690353Q59	Overseas Private Investment Corp	44.9	44.9	3-Oct-16	7-Jul-40	USD	Sovereign Agency	Sr Unsecured
690353L21	Overseas Private Investment Corp	31.4	30.9	15-Dec-15	15-Dec-33	USD	Sovereign Agency	Unsecured
690353C88	Overseas Private Investment Corp	2.1	2.0	17-Nov-14	1-Jun-33	USD	Sovereign Agency	Unsecured
690353L70	Overseas Private Investment Corp	9.1	8.4	1-Feb-16	10-Oct-25	USD	Sovereign Agency	Unsecured
690353K48	Overseas Private Investment Corp	12.0	12.0	16-Nov-15	15-Oct-33	USD	Sovereign Agency	Unsecured
690353H42	Overseas Private Investment Corp	2.1	2.1	20-Jul-15	15-Oct-33	USD	Sovereign Agency	Unsecured
690353M38	Overseas Private Investment Corp	26.2	26.2	30-Mar-16	15-Oct-33	USD	Sovereign Agency	Sr Unsecured
690353E52	Overseas Private Investment Corp	37.4	37.4	24-Mar-15	15-Sep-29	USD	Sovereign Agency	Unsecured
690353F93	Overseas Private Investment Corp	5.0	4.9	4-May-15	15-Dec-33	USD	Sovereign Agency	Sr Unsecured
690353C70	Overseas Private Investment Corp	24.4	23.6	13-Nov-14	1-Jun-33	USD	Sovereign Agency	Unsecured
690353K71	Overseas Private Investment Corp	10.0	9.6	14-Dec-15	15-Jul-26	USD	Sovereign Agency	Unsecured
690353D87	Overseas Private Investment Corp	4.9	4.9	26-Jan-15	15-Oct-33	USD	Sovereign Agency	Unsecured
690353G76	Overseas Private Investment Corp	14.3	13.8	24-Jul-15	15-Jul-26	USD	Sovereign Agency	Unsecured
690353J57	Overseas Private Investment Corp	10.0	9.9	21-Sep-15	15-Dec-33	USD	Sovereign Agency	Unsecured
690353L62	Overseas Private Investment Corp	5.0	4.9	25-Jan-16	15-Dec-33	USD	Sovereign Agency	Sr Unsecured
690353J32	Overseas Private Investment Corp	13.8	13.8	14-Sep-15	1-Jun-33	USD	Sovereign Agency	Sr Unsecured
690353M46	Overseas Private Investment Corp	6.2	6.1	21-Mar-16	15-Dec-33	USD	Sovereign Agency	Sr Unsecured
690353K30	Overseas Private Investment Corp	11.7	10.8	9-Nov-15	10-Oct-25	USD	Sovereign Agency	Unsecured
EK8500044	Overseas Private Investment Corp	37.4	37.4	24-Mar-15	15-Sep-29	USD	Sovereign Agency	Unsecured
690353C21	Overseas Private Investment Corp	47.3	47.3	18-Sep-14	15-Sep-29	USD	Sovereign Agency	Unsecured
690353G50	Overseas Private Investment Corp	40.4	40.4	22-Jun-15	15-Sep-29	USD	Sovereign Agency	Unsecured
EK8076177	Paprec Holding SA	321.6	321.6	20-Mar-15	1-Apr-22	EUR	Recycling	1st lien
AM8538234	Paprec Holding SA	242.6	242.6	16-Mar-17	1-Apr-22	EUR	Recycling	Secured
EK8076474	Paprec Holding SA	201.7	201.7	20-Mar-15	1-Apr-23	EUR	Recycling	2nd lien
QZ7459519	Poten Environment Group Co Ltd	44.6	44.6	30-Sep-16	12-Oct-21	CNY	Building-Heavy Construct	Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
68323ADL5	Province of Ontario Canada	1,104.5	1,104.5	21-Jan-16	27-Jan-23	CAD	Regional Authority	Sr Unsecured
68323ACW2	Province of Ontario Canada	447.9	447.9	2-Oct-14	9-Oct-18	CAD	Regional Authority	Sr Unsecured
748148RW5	Province of Quebec Canada	372.9	372.9	23-Feb-17	3-Mar-22	CAD	Regional Authority	Sr Unsecured
AM5399796	Provincia de la Rioja	200.0	200.0	16-Feb-17	24-Feb-25	USD	Regional Authority	Sr Unsecured
QZ9789178	ReNew Power Ventures Pvt Ltd	30.1	30.1	28-Sep-16	28-Sep-22	INR	Electric-Generation	1st lien
75884RAT0	Regency Centers LP	250.0	250.0	13-May-14	15-Jun-24	USD	REITS-Shopping Centers	Sr Unsecured
EJ3676487	Region Hauts-de-France	103.2	103.2	17-Sep-12	1-Oct-24	EUR	Regional Authority	Sr Unsecured
QZ8532280	Region Skane	48.2	48.2	10-Oct-16	18-Oct-21	SEK	Regional Authority	Sr Unsecured
QZ8520780	Region Skane	87.9	87.9	10-Oct-16	18-Oct-21	SEK	Regional Authority	Sr Unsecured
EK9348153	Renewi PLC	112.4	112.4	26-May-15	16-Jun-22	EUR	Non-hazardous Waste Disp	Sr Unsecured
AL7042594	Republic of Poland Government International Bond	779.8	779.8	12-Dec-16	20-Dec-21	EUR	Sovereign	Sr Unsecured
AL2451303	Rikshem AB	38.0	38.0	15-Nov-16	22-Feb-22	SEK	Real Estate Mgmt/Servic	Sr Unsecured
EK8860372	Rikshem AB	42.3	42.3	28-Apr-15	7-May-18	SEK	Real Estate Mgmt/Servic	Sr Unsecured
AL2903329	Rikshem AB	16.3	16.3	15-Nov-16	22-Feb-22	SEK	Real Estate Mgmt/Servic	Sr Unsecured
EK6327812	Rikshem AB	33.1	33.1	28-Nov-14	5-Jun-17	SEK	Real Estate Mgmt/Servic	Unsecured
EK8860430	Rikshem AB	48.4	48.4	28-Apr-15	7-May-18	SEK	Real Estate Mgmt/Servic	Sr Unsecured
JK8665800	Rikshem AB	31.1	31.1	20-Apr-16	29-Apr-19	SEK	Real Estate Mgmt/Servic	Sr Unsecured
EK2966514	Rodamco Sverige AB	97.3	97.3	23-May-14	3-Jun-19	SEK	Diversified Finan Serv	Sr Unsecured
EK2966274	Rodamco Sverige AB	127.2	127.2	23-May-14	3-Jun-19	SEK	Diversified Finan Serv	Sr Unsecured
LW4818560	SBAB Bank AB	122.1	122.1	16-Jun-16	23-Jun-21	SEK	Commer Banks Non-US	Sr Unsecured
LW4829229	SBAB Bank AB	122.1	122.1	16-Jun-16	23-Jun-21	SEK	Commer Banks Non-US	Sr Unsecured
EK1475673	SCA Hygiene AB	154.2	154.2	25-Mar-14	2-Apr-19	SEK	Cosmetics&Toiletries	Sr Unsecured
EK1475376	SCA Hygiene AB	77.1	77.1	25-Mar-14	2-Apr-19	SEK	Cosmetics&Toiletries	Sr Unsecured
QZ7962769	SNCF Reseau	984.5	984.5	27-Oct-16	9-Nov-31	EUR	Public Thoroughfares	Sr Unsecured
QJ1387233	Schneider Electric SE	341.7	341.7	7-Oct-15	13-Oct-25	EUR	Power Conv/Supply Equip	Sr Unsecured
EK8701923	Senvion Holding GmbH	445.7	445.7	24-Apr-15	15-Nov-20	EUR	Power Conv/Supply Equip	1st lien
JV7432612	Shanghai Pudong Development Bank Co Ltd	3,042.2	3,042.2	20-Jan-16	29-Jan-19	CNY	Commer Banks Non-US	Unsecured
JK5501586	Shanghai Pudong Development Bank Co Ltd	2,305.9	2,305.9	22-Mar-16	29-Mar-21	CNY	Commer Banks Non-US	Sr Unsecured
LW8579192	Shanghai Pudong Development Bank Co Ltd	2,239.2	2,239.2	11-Jul-16	18-Jul-21	CNY	Commer Banks Non-US	Sr Unsecured
AM4830171	Skandinaviska Enskilda Banken AB	530.7	530.7	10-Feb-17	17-Feb-22	EUR	Commer Banks Non-US	Sr Unsecured
EK1591453	Skanska Financial Services AB	130.9	130.9	1-Apr-14	8-Apr-19	SEK	Building-Heavy Construct	Sr Unsecured
QZ6050657	Societe Generale SA	560.3	560.3	28-Sep-16	5-Oct-21	EUR	Diversified Banking Inst	Sr Unsecured
QJ6597604	Societe Generale SA	531.2	531.2	18-Nov-15	25-Nov-20	EUR	Diversified Banking Inst	Sr Unsecured
LW2809249	Sodra Skogsagarna Ekonomisk Forening	122.9	122.9	30-May-16	7-Jun-21	SEK	Forestry	Sr Unsecured
83417KBQ0	SolarCity Corp	10.0	10.0	26-May-15	29-May-20	USD	Energy-Alternate Sources	Sr Unsecured
EK5931739	SolarCity Corp	10.0	10.0	15-Oct-14	15-Oct-17	USD	Energy-Alternate Sources	Sr Unsecured
83417KBR8	SolarCity Corp	10.0	10.0	26-May-15	29-May-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KFP8	SolarCity Corp	5.0	5.0	11-Jan-16	14-Jan-19	USD	Energy-Alternate Sources	Sr Unsecured
83417KAB4	SolarCity Corp	0.1	0.1	16-Mar-15	19-Mar-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KFS2	SolarCity Corp	5.0	5.0	11-Jan-16	14-Jan-31	USD	Energy-Alternate Sources	Sr Unsecured
EK5931796	SolarCity Corp	10.0	10.0	15-Oct-14	15-Oct-21	USD	Energy-Alternate Sources	Sr Unsecured
83417KA8	SolarCity Corp	0.3	0.3	16-Mar-15	19-Mar-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KDY1	SolarCity Corp	5.0	5.0	14-Sep-15	17-Sep-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KAY4	SolarCity Corp	10.0	10.0	20-Apr-15	23-Apr-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBF4	SolarCity Corp	10.0	10.0	11-May-15	14-May-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KCX4	SolarCity Corp	5.0	5.0	3-Aug-15	6-Aug-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KCW6	SolarCity Corp	5.0	5.0	3-Aug-15	6-Aug-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KDX3	SolarCity Corp	5.0	5.0	14-Sep-15	17-Sep-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KBK3	SolarCity Corp	10.0	10.0	18-May-15	21-May-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KAJ7	SolarCity Corp	0.1	0.1	23-Mar-15	26-Mar-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KFQ6	SolarCity Corp	5.0	5.0	11-Jan-16	14-Jan-21	USD	Energy-Alternate Sources	Sr Unsecured
83417KBA5	SolarCity Corp	10.0	10.0	20-Apr-15	23-Apr-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KBG2	SolarCity Corp	10.0	10.0	11-May-15	14-May-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KAD0	SolarCity Corp	0.4	0.4	16-Mar-15	19-Mar-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCA4	SolarCity Corp	5.0	5.0	15-Jun-15	18-Jun-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFR4	SolarCity Corp	5.0	5.0	11-Jan-16	14-Jan-26	USD	Energy-Alternate Sources	Sr Unsecured
83417KBJ6	SolarCity Corp	10.0	10.0	11-May-15	14-May-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KDM7	SolarCity Corp	5.0	5.0	24-Aug-15	27-Aug-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KAM0	SolarCity Corp	0.2	0.2	30-Mar-15	2-Apr-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KAX6	SolarCity Corp	10.0	10.0	20-Apr-15	23-Apr-18	USD	Energy-Alternate Sources	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
83417KCM8	SolarCity Corp	10.0	10.0	13-Jul-15	16-Jul-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDZ8	SolarCity Corp	5.0	5.0	14-Sep-15	17-Sep-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KEL8	SolarCity Corp	5.0	5.0	13-Oct-15	16-Oct-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KBT4	SolarCity Corp	10.0	10.0	8-Jun-15	11-Jun-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KBU1	SolarCity Corp	10.0	10.0	8-Jun-15	11-Jun-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KC55	SolarCity Corp	5.0	5.0	20-Jul-15	23-Jul-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDGO	SolarCity Corp	5.0	5.0	17-Aug-15	20-Aug-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KDT2	SolarCity Corp	5.0	5.0	31-Aug-15	3-Sep-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KEU8	SolarCity Corp	5.0	5.0	16-Nov-15	19-Nov-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KAZ1	SolarCity Corp	10.0	10.0	20-Apr-15	23-Apr-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KDN5	SolarCity Corp	5.0	5.0	24-Aug-15	27-Aug-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KCG1	SolarCity Corp	10.0	10.0	29-Jun-15	2-Jul-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KEC8	SolarCity Corp	5.0	5.0	28-Sep-15	1-Oct-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KEZ7	SolarCity Corp	5.0	5.0	30-Nov-15	3-Dec-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDS4	SolarCity Corp	5.0	5.0	31-Aug-15	3-Sep-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KEW4	SolarCity Corp	5.0	5.0	16-Nov-15	19-Nov-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFK9	SolarCity Corp	5.0	5.0	28-Dec-15	31-Dec-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBM9	SolarCity Corp	10.0	10.0	18-May-15	21-May-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCY2	SolarCity Corp	5.0	5.0	3-Aug-15	6-Aug-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCP1	SolarCity Corp	5.0	5.0	13-Jul-15	16-Jul-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KCN6	SolarCity Corp	10.0	10.0	13-Jul-15	16-Jul-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCB2	SolarCity Corp	10.0	10.0	22-Jun-15	25-Jun-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KDH8	SolarCity Corp	5.0	5.0	17-Aug-15	20-Aug-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDU9	SolarCity Corp	5.0	5.0	31-Aug-15	3-Sep-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCF3	SolarCity Corp	10.0	10.0	29-Jun-15	2-Jul-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KED6	SolarCity Corp	5.0	5.0	28-Sep-15	1-Oct-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBP2	SolarCity Corp	10.0	10.0	26-May-15	29-May-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KBS6	SolarCity Corp	10.0	10.0	26-May-15	29-May-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KBL1	SolarCity Corp	10.0	10.0	18-May-15	21-May-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBV9	SolarCity Corp	10.0	10.0	8-Jun-15	11-Jun-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KEN4	SolarCity Corp	5.0	5.0	2-Nov-15	5-Nov-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KBK1	SolarCity Corp	10.0	10.0	27-Apr-15	30-Apr-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KAC2	SolarCity Corp	2.8	2.8	16-Mar-15	19-Mar-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDB1	SolarCity Corp	5.0	5.0	10-Aug-15	13-Aug-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KEH7	SolarCity Corp	5.0	5.0	13-Oct-15	16-Oct-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KCZ9	SolarCity Corp	5.0	5.0	3-Aug-15	6-Aug-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFG8	SolarCity Corp	5.0	5.0	14-Dec-15	17-Dec-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KBX5	SolarCity Corp	10.0	10.0	15-Jun-15	18-Jun-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KBY3	SolarCity Corp	10.0	10.0	15-Jun-15	18-Jun-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KDP0	SolarCity Corp	5.0	5.0	24-Aug-15	27-Aug-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCJ5	SolarCity Corp	5.0	5.0	29-Jun-15	2-Jul-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KET1	SolarCity Corp	5.0	5.0	16-Nov-15	19-Nov-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KFM5	SolarCity Corp	5.0	5.0	28-Dec-15	31-Dec-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KDC9	SolarCity Corp	5.0	5.0	10-Aug-15	13-Aug-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KEJ3	SolarCity Corp	5.0	5.0	13-Oct-15	16-Oct-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KCL0	SolarCity Corp	10.0	10.0	13-Jul-15	16-Jul-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KEV6	SolarCity Corp	5.0	5.0	16-Nov-15	19-Nov-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KBN7	SolarCity Corp	10.0	10.0	18-May-15	21-May-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KCR7	SolarCity Corp	5.0	5.0	20-Jul-15	23-Jul-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KFD5	SolarCity Corp	5.0	5.0	14-Dec-15	17-Dec-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KFF0	SolarCity Corp	5.0	5.0	14-Dec-15	17-Dec-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCD8	SolarCity Corp	10.0	10.0	22-Jun-15	25-Jun-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KDK1	SolarCity Corp	5.0	5.0	17-Aug-15	20-Aug-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KEF1	SolarCity Corp	5.0	5.0	28-Sep-15	1-Oct-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KEV0	SolarCity Corp	5.0	5.0	30-Nov-15	3-Dec-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KFJ2	SolarCity Corp	5.0	5.0	28-Dec-15	31-Dec-18	USD	Energy-Alternate Sources	Sr Unsecured
83417KEK0	SolarCity Corp	5.0	5.0	13-Oct-15	16-Oct-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KBW7	SolarCity Corp	5.0	5.0	8-Jun-15	11-Jun-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KEQ7	SolarCity Corp	5.0	5.0	2-Nov-15	5-Nov-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KBZ0	SolarCity Corp	10.0	10.0	15-Jun-15	18-Jun-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KAK4	SolarCity Corp	0.3	0.3	23-Mar-15	26-Mar-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KAH1	SolarCity Corp	0.2	0.2	23-Mar-15	26-Mar-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBH0	SolarCity Corp	10.0	10.0	11-May-15	14-May-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KEP9	SolarCity Corp	5.0	5.0	2-Nov-15	5-Nov-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KER5	SolarCity Corp	5.0	5.0	2-Nov-15	5-Nov-30	USD	Energy-Alternate Sources	Sr Unsecured

Source: Bloomberg





## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
83417KDE5	SolarCity Corp	5.0	5.0	10-Aug-15	13-Aug-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KDD7	SolarCity Corp	5.0	5.0	10-Aug-15	13-Aug-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCT3	SolarCity Corp	5.0	5.0	20-Jul-15	23-Jul-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KCU0	SolarCity Corp	5.0	5.0	20-Jul-15	23-Jul-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFE3	SolarCity Corp	5.0	5.0	14-Dec-15	17-Dec-20	USD	Energy-Alternate Sources	Sr Unsecured
83417KBD9	SolarCity Corp	10.0	10.0	27-Apr-15	30-Apr-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KCE6	SolarCity Corp	5.0	5.0	22-Jun-15	25-Jun-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KD14	SolarCity Corp	5.0	5.0	17-Aug-15	20-Aug-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KDD8	SolarCity Corp	5.0	5.0	24-Aug-15	27-Aug-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KEA2	SolarCity Corp	5.0	5.0	14-Sep-15	17-Sep-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFA1	SolarCity Corp	5.0	5.0	30-Nov-15	3-Dec-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KDV7	SolarCity Corp	5.0	5.0	31-Aug-15	3-Sep-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KFB9	SolarCity Corp	5.0	5.0	30-Nov-15	3-Dec-30	USD	Energy-Alternate Sources	Sr Unsecured
83417KCH9	SolarCity Corp	10.0	10.0	29-Jun-15	2-Jul-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KEE4	SolarCity Corp	5.0	5.0	28-Sep-15	1-Oct-25	USD	Energy-Alternate Sources	Sr Unsecured
83417KFL7	SolarCity Corp	5.0	5.0	28-Dec-15	31-Dec-25	USD	Energy-Alternate Sources	Sr Unsecured
843646AS9	Southern Power Co	600.0	600.0	10-Nov-16	15-Dec-19	USD	Electric-Integrated	Sr Unsecured
843646AM2	Southern Power Co	500.0	500.0	12-Nov-15	1-Dec-25	USD	Electric-Integrated	Sr Unsecured
LW2549118	Southern Power Co	678.9	678.9	13-Jun-16	20-Jun-22	EUR	Electric-Integrated	Sr Unsecured
LW4237233	Southern Power Co	565.7	565.7	13-Jun-16	20-Jun-26	EUR	Electric-Integrated	Sr Unsecured
843646AT7	Southern Power Co	300.0	300.0	10-Nov-16	15-Dec-21	USD	Electric-Integrated	Sr Unsecured
843646AN0	Southern Power Co	500.0	500.0	12-Nov-15	1-Dec-17	USD	Electric-Integrated	Sr Unsecured
UV6700172	Stangastaden AB	59.4	59.4	26-Aug-15	9-Sep-20	SEK	Real Estate Oper/Develop	Sr Unsecured
QZ6663806	Stangastaden AB	43.3	43.3	23-Sep-16	7-Oct-21	SEK	Real Estate Oper/Develop	Sr Unsecured
QZ6665199	Stangastaden AB	23.1	23.1	23-Sep-16	7-Oct-21	SEK	Real Estate Oper/Develop	Sr Unsecured
QZ8704137	State Grid Corp of China	741.9	741.9	12-Oct-16	20-Oct-21	CNY	Electric-Distribution	Unsecured
QZ8704129	State Grid Corp of China	741.9	741.9	12-Oct-16	20-Oct-19	CNY	Electric-Distribution	Unsecured
QZ8703980	State Grid Corp of China	741.9	741.9	12-Oct-16	20-Oct-21	CNY	Electric-Distribution	Unsecured
QZ8703949	State Grid Corp of China	741.9	741.9	12-Oct-16	20-Oct-19	CNY	Electric-Distribution	Unsecured
AL3719567	Stockholms Kooperativa Bostadsforening	32.5	32.5	21-Nov-16	30-Nov-21	SEK	Real Estate Oper/Develop	Sr Unsecured
LW1620308	Stockholms Lans Landsting	180.2	180.2	19-May-16	27-Sep-21	SEK	Municipal-County	Sr Unsecured
EK2715879	Stockholms Lans Landsting	34.9	34.9	12-May-14	19-May-20	SEK	Municipal-County	Sr Unsecured
EK9316317	Stockholms Lans Landsting	176.8	176.8	21-May-15	28-May-21	SEK	Municipal-County	Sr Unsecured
EK9317158	Stockholms Lans Landsting	35.4	35.4	21-May-15	28-May-21	SEK	Municipal-County	Sr Unsecured
EK2717438	Stockholms Lans Landsting	132.0	132.0	12-May-14	19-May-20	SEK	Municipal-County	Sr Unsecured
EK5645834	Stockland Trust	374.6	374.6	23-Oct-14	3-Nov-21	EUR	REITS-Mortgage	Sr Unsecured
865622BY9	Sumitomo Mitsui Banking Corp	500.0	500.0	14-Oct-15	20-Oct-20	USD	Commer Banks Non-US	Sr Unsecured
LW8108463	Suzano Austria GmbH	500.0	500.0	7-Jul-16	14-Jul-26	USD	Paper&Related Products	Sr Unsecured
JK2136949	Sveaskog AB	34.8	34.8	22-Feb-16	1-Mar-21	SEK	Forestry	Sr Unsecured
JK2128615	Sveaskog AB	81.1	81.1	22-Feb-16	1-Mar-21	SEK	Forestry	Sr Unsecured
00254EMD1	Svensk Exportkredit AB	500.0	500.0	16-Jun-15	23-Jun-20	USD	Export/Import Bank	Sr Unsecured
AM4154432	Svensk FastighetsFinansiering AB	33.6	33.6	6-Feb-17	20-Feb-22	SEK	Real Estate Mgmt/Servic	Secured
AM2736412	Svensk FastighetsFinansiering AB	33.8	33.8	24-Jan-17	29-May-20	SEK	Real Estate Mgmt/Servic	Secured
QZ3381733	Svensk FastighetsFinansiering AB	108.9	108.9	24-Aug-16	7-Sep-18	SEK	Real Estate Mgmt/Servic	Secured
AL3351932	Svensk FastighetsFinansiering AB	75.6	75.6	17-Nov-16	3-Dec-18	SEK	Real Estate Mgmt/Servic	Secured
QZ9283024	Svensk FastighetsFinansiering AB	55.4	55.4	18-Oct-16	28-Feb-19	SEK	Real Estate Mgmt/Servic	Secured
QJ6828843	Svensk FastighetsFinansiering AB	129.3	129.3	5-Nov-15	20-Nov-17	SEK	Real Estate Mgmt/Servic	Secured
872442AA6	THP Partnership	217.1	217.1	25-Jun-14	31-Oct-46	CAD	Special Purpose Entity	Secured
EK9119182	TenneT Holding BV	564.4	564.4	28-May-15	4-Jun-21	EUR	Electric-Transmission	Sr Unsecured
LW1933883	TenneT Holding BV	564.2	564.2	6-Jun-16	13-Jun-26	EUR	Electric-Transmission	Sr Unsecured
QZ8444593	TenneT Holding BV	543.9	543.9	10-Oct-16	24-Oct-33	EUR	Electric-Transmission	Sr Unsecured

Source: Bloomberg



## Appendix I: Green bonds (labeled) outstanding (cont'd)

CUSIP	Issuer	AMT Issued	AMT O/S	Announce Date	Maturity Date	Currency	Industry Sub-Group	Collateral Type
LW3449110	TenneT Holding BV	564.2	564.2	6-Jun-16	13-Jun-36	EUR	Electric-Transmission	Sr Unsecured
EK9436693	TenneT Holding BV	564.4	564.4	28-May-15	4-Jun-27	EUR	Electric-Transmission	Sr Unsecured
EK7183735	TerraForm Power Operating LLC	950.0	950.0	23-Jan-15	1-Feb-23	USD	Energy-Alternate Sources	Sr Unsecured
AF2793665	TerraForm Power Operating LLC	300.0	300.0	14-Jul-15	15-Jun-25	USD	Energy-Alternate Sources	Sr Unsecured
UV4263736	Terraform Global Operating LLC	810.0	760.4	31-Jul-15	15-Aug-22	USD	Electric-Generation	Sr Unsecured
891145N34	Toronto-Dominion Bank/The	453.4	453.4	28-Mar-14	3-Apr-17	CAD	Commer Banks Non-US	Sr Unsecured
EK8488224	Transport for London	606.6	606.6	16-Apr-15	24-Apr-25	GBP	Regional Authority	Sr Unsecured
LW9205136	Treasury Corp of Victoria	223.9	223.9	19-Jul-16	27-Jul-21	AUD	Regional Agencies	Sr Unsecured
LW0616299	Turkiye Sinai Kalkinma Bankasi AS	300.0	300.0	12-May-16	18-May-21	USD	Finance-Invest Bnkr/Brkr	Sr Unsecured
EK8481864	Unibail-Rodamco SE	530.9	530.9	8-Apr-15	14-Mar-25	EUR	REITS-Diversified	Sr Unsecured
EK0810946	Unibail-Rodamco SE	1,025.4	1,025.4	19-Feb-14	26-Feb-24	EUR	REITS-Diversified	Sr Unsecured
EK1269761	Unilever PLC	414.2	414.2	19-Mar-14	19-Dec-18	GBP	Cosmetics&Toiletries	Sr Unsecured
UV6921661	Uppsalahe AB	59.7	59.7	27-Aug-15	10-Sep-20	SEK	Real Estate Oper/Develop	Sr Unsecured
EK6465000	Vardar AS	41.2	41.2	5-Dec-14	11-Dec-19	NOK	Real Estate Oper/Develop	Sr Unsecured
QZ8694973	Vasakronan AB	11.3	11.3	11-Oct-16	18-Oct-21	SEK	Real Estate Oper/Develop	Sr Unsecured
QZ8695046	Vasakronan AB	45.3	45.3	11-Oct-16	18-Oct-21	SEK	Real Estate Oper/Develop	Sr Unsecured
QJ2105105	Vasakronan AB	39.5	39.5	15-Oct-15	22-Oct-20	SEK	Real Estate Oper/Develop	Sr Unsecured
AM4317609	Vasakronan AB	54.8	54.8	7-Feb-17	28-Aug-19	SEK	Real Estate Oper/Develop	Sr Unsecured
EK1273128	Vasakronan AB	118.0	118.0	15-Mar-14	19-Mar-19	SEK	Real Estate Oper/Develop	Sr Unsecured
EK5947495	Vasakronan AB	67.9	67.9	7-Nov-14	18-Nov-19	SEK	Real Estate Oper/Develop	Sr Unsecured
EK7559421	Vasakronan AB	77.7	25.1	13-Feb-15	20-Feb-18	SEK	Real Estate Oper/Develop	Sr Unsecured
JK6215236	Vasakronan AB	67.4	67.4	30-Mar-16	7-Jun-18	SEK	Real Estate Oper/Develop	Unsecured
QJ2099373	Vasakronan AB	31.6	31.6	15-Oct-15	22-Oct-20	SEK	Real Estate Oper/Develop	Unsecured
UV5222871	Vasakronan AB	18.6	18.6	13-Aug-15	21-Aug-18	SEK	Real Estate Oper/Develop	Sr Unsecured
QZ9161097	Vasakronan AB	112.1	112.1	17-Oct-16	24-Apr-19	SEK	Real Estate Oper/Develop	Sr Unsecured
EK1272823	Vasakronan AB	78.7	78.7	13-Mar-14	19-Mar-19	SEK	Real Estate Oper/Develop	Sr Unsecured
EK5865325	Verbund AG	626.9	626.9	13-Nov-14	20-Nov-24	EUR	Electric-Integrated	Sr Unsecured
EK7661144	Vestas Wind Systems A/S	526.6	526.6	4-Mar-15	11-Mar-22	EUR	Energy-Alternate Sources	Sr Unsecured
929043AH0	Vornado Realty LP	450.0	450.0	9-Jun-14	30-Jun-19	USD	REITS-Diversified	Sr Unsecured
EK8157449	Wallenstam AB	58.9	58.9	18-Mar-15	25-Mar-19	SEK	Real Estate Mgmt/Servic	Sr Unsecured
LW1836938	Wallenstam AB	48.0	48.0	20-May-16	30-May-18	SEK	Real Estate Mgmt/Servic	Sr Unsecured
95709TAN0	Westar Energy Inc	350.0	350.0	13-Jun-16	1-Jul-26	USD	Electric-Integrated	Secured
LW1908208	Westpac Banking Corp	366.8	366.8	25-May-16	3-Jun-21	AUD	Commer Banks Non-US	Sr Unsecured
AM5134854	Wuhai Bank Co Ltd	72.6	72.6	14-Feb-17	21-Feb-20	CNY	Commer Banks Non-US	Unsecured
LW1806014	Xinjiang Goldwind Science & Technology Co Ltd	152.7	152.7	20-May-16	#VALUE!	CNY	Power Conv/Supply Equip	Unsecured
QZ4978511	Xinjiang Goldwind Science & Technology Co Ltd	74.9	74.9	30-Aug-16	#VALUE!	CNY	Power Conv/Supply Equip	Unsecured
EK7571822	Yes Bank Ltd	160.7	160.7	16-Feb-15	24-Feb-25	INR	Commer Banks Non-US	Sr Unsecured
AM0221219	Yes Bank Ltd	48.6	48.6	29-Dec-16	29-Dec-23	INR	Commer Banks Non-US	Sr Unsecured

Source: Bloomberg



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