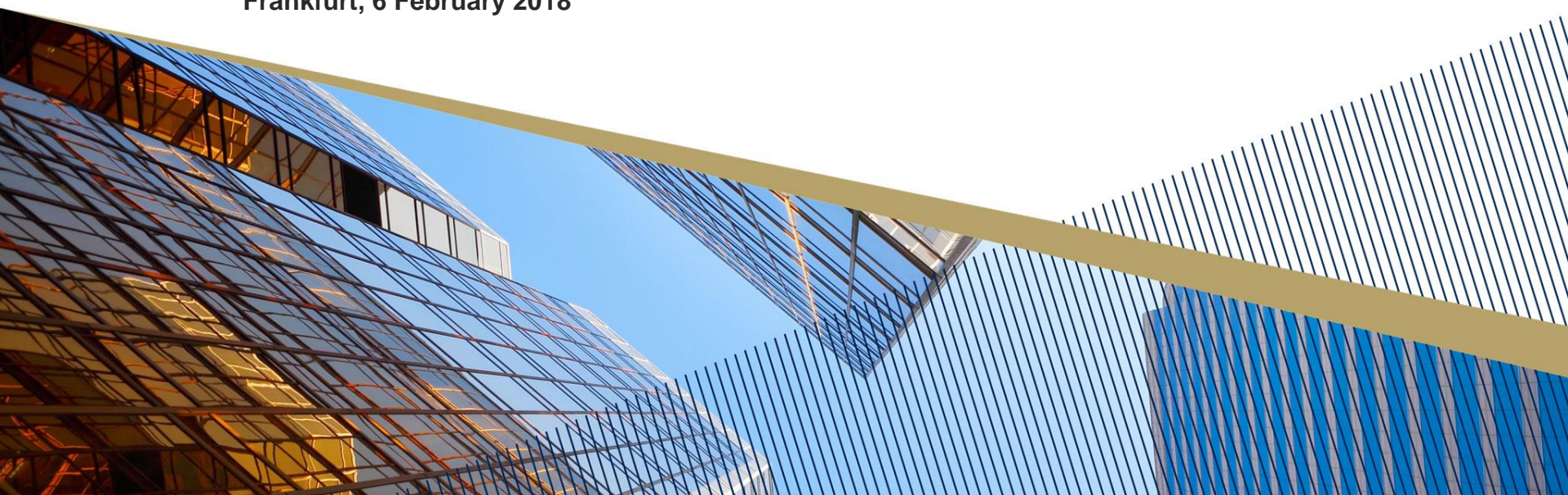


Green & Social Bond Market Update

Bond Market Contact Group

European Central Bank

Frankfurt, 6 February 2018



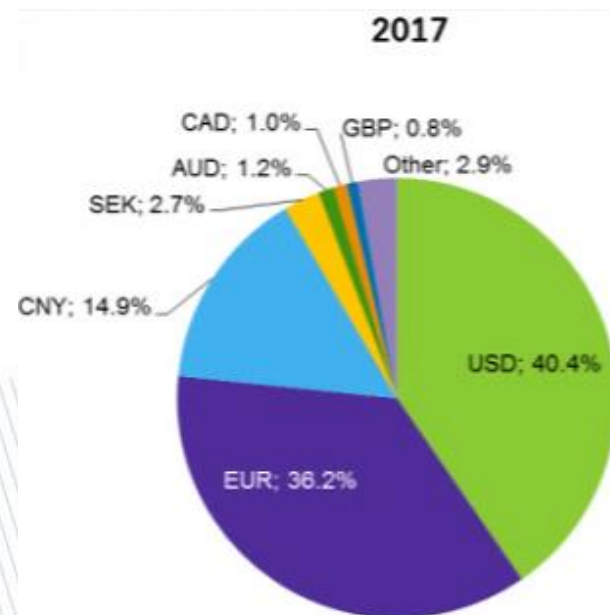
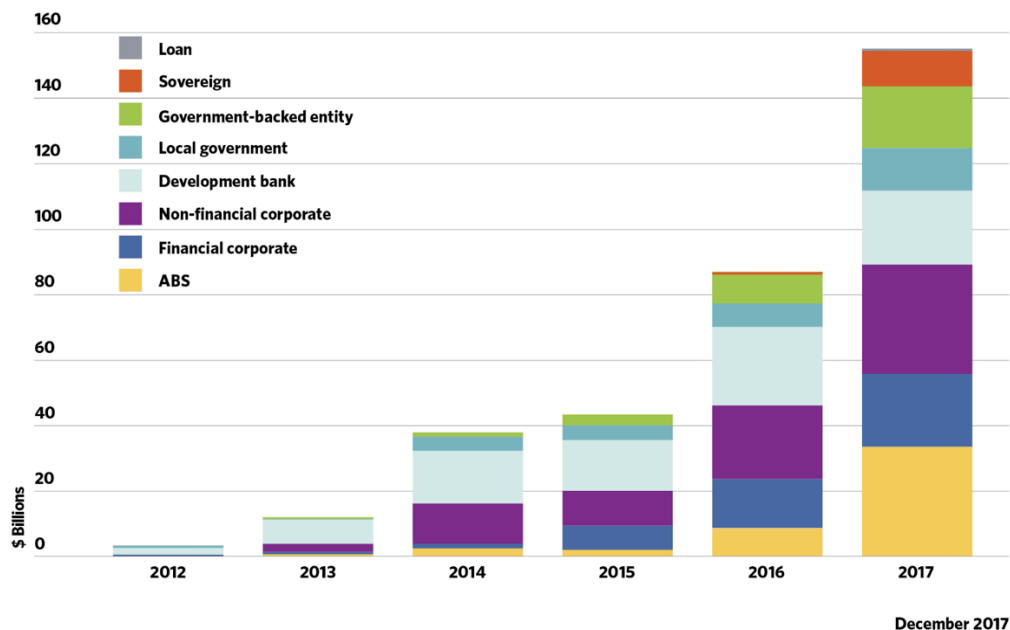
Green, Social and Sustainability Bonds

- A market has arisen for bond investors looking for opportunities that incorporate environmental, social and sustainability considerations. **Green, Social and Sustainability Bonds** have evolved out of this demand.
- Green, Social and Sustainability Bonds are **any type of bond instrument where the proceeds will be exclusively applied to eligible environmental and social projects.**
- ICMA's **Green Bond Principles (GBP)** and **Social Bond Principles (SBP)**, as well as the **Sustainability Bond Guidelines (SBG)**, referred to as the "**Principles**" have become the leading framework globally for issuance of green, social and sustainability bonds.
- Green, Social and Sustainability Bonds are regulated instruments subject to the same capital market and financial regulation as other listed fixed income securities.

Bond Type	Use of Proceeds
Green Bond	Finance projects with a clear environmental benefits (e.g. renewable energy, energy efficiency, climate change adaptation)
Social Bond	Finance projects that address social issues and/or seek to achieve positive social outcomes especially for a target population (e.g. poor, vulnerable, unemployed, uneducated etc.)
Sustainability Bond	Finance a mix of green and social projects

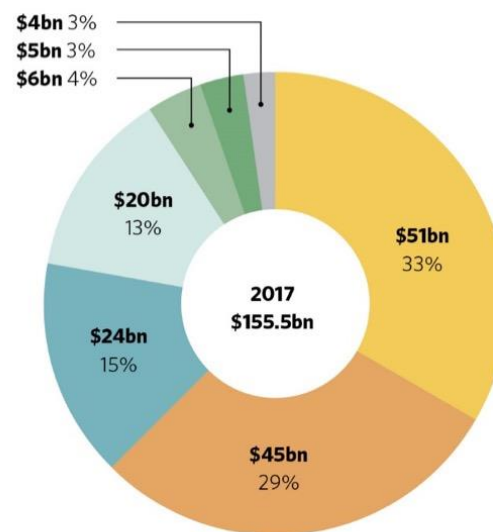
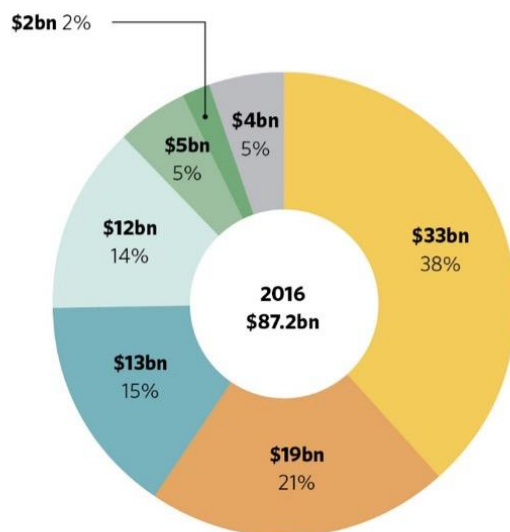
Green Bonds – Growth in Issuance in 2017

- **US\$155.5bn** total issuance
- **Over 1500** green bond issues
- **78%** growth on 2016
- **37** countries from all continents
- **239** issuers
- **146** new issuers
- **US\$10.7bn** – largest bond
- **3** sovereign Green Bonds from France, Fiji, Nigeria
- **3 regions account for over half (56%) of issuance:** United States (US\$ 37.8 bn, China (US\$ 30.7 bn), France (US\$ 19.4 bn)
- **Market shifted towards Euros** driven by a very active corporate EUR market and the French Green Sovereign OAT



Green Bonds – Use of Proceeds in 2017

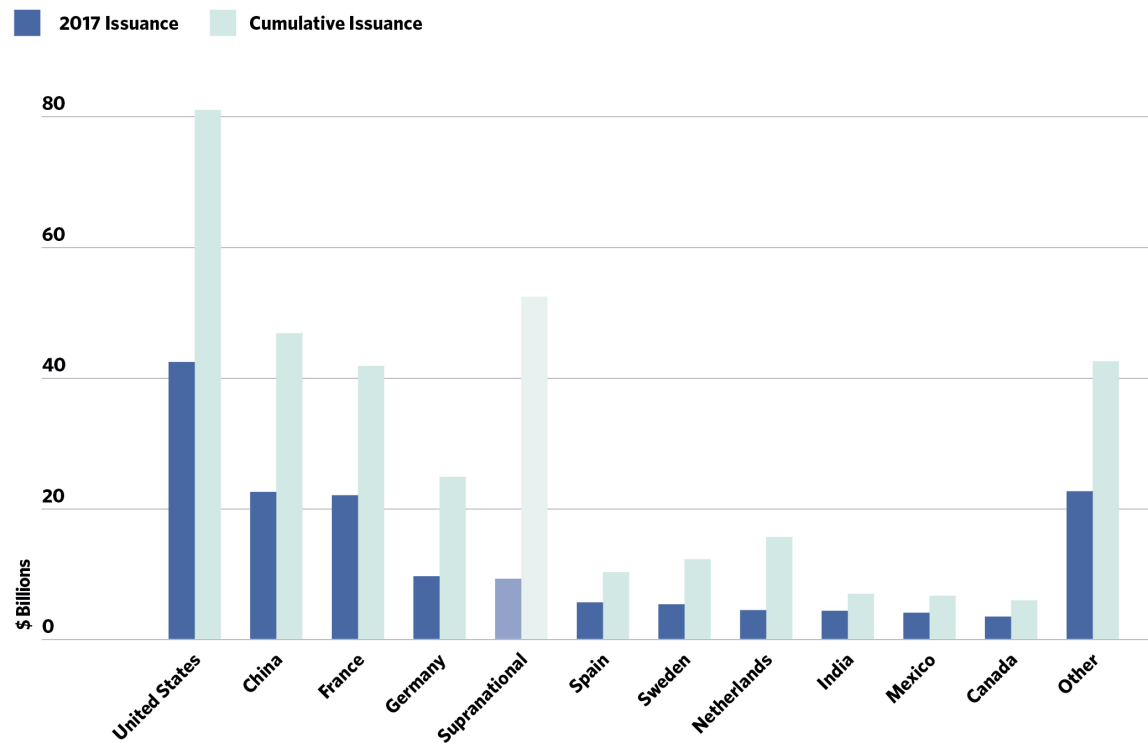
- Investments in **renewable energy** continue to be the most common use of proceeds.
- However their share has dropped considerably, while allocations to **low carbon buildings and energy efficiency** rose 2.4 times year-on-year.
- **Waste, Land Use & Adaptation** themes continue to be smallest, partly because of ongoing debate on what qualifies.



December 2017

Green Bonds – Geographic Diversity

- The **US, China** and **France** led the way accounting for **56%** of global issuance.
- **Germany, Spain, Sweden, Netherlands, Mexico and Canada** filled out the remaining top ten positions.
- Largest overall issuer was **Fannie Mae** with USD24.9bn from **green MBS** programme.



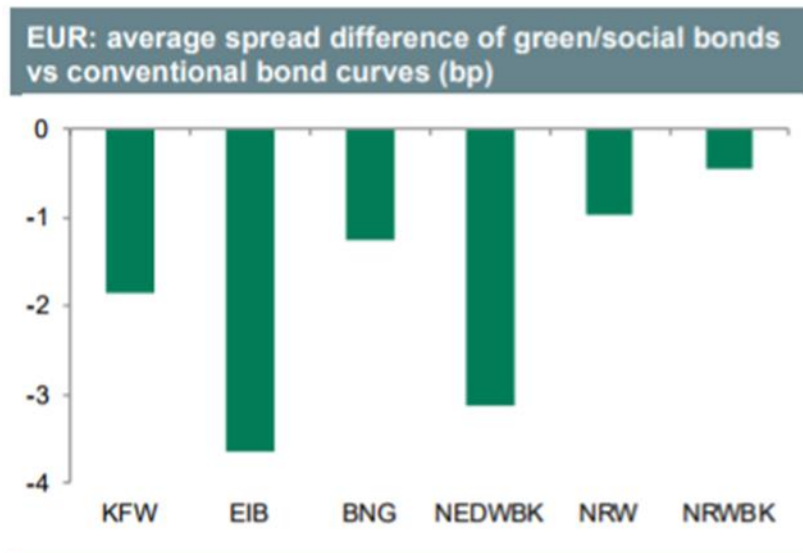
December 2017

Source: CBI

Green Bonds – Performance & Pricing

Based on the most recent green bond research (e.g. HSBC, CACIB), as well as work by CBI on the topic, an emerging consensus view on green bonds performance and pricing could be that:

- Data in developed markets showing that some green bonds trade inside non-green
- Insufficient data to support the view that green bonds price tighter than non-green in primary despite some individual cases
- Increasing data showing that green bonds can outperform non-green
- Green bonds appear less volatile than non-green bonds in stressed markets
- Green bonds trade somewhat less than non-green

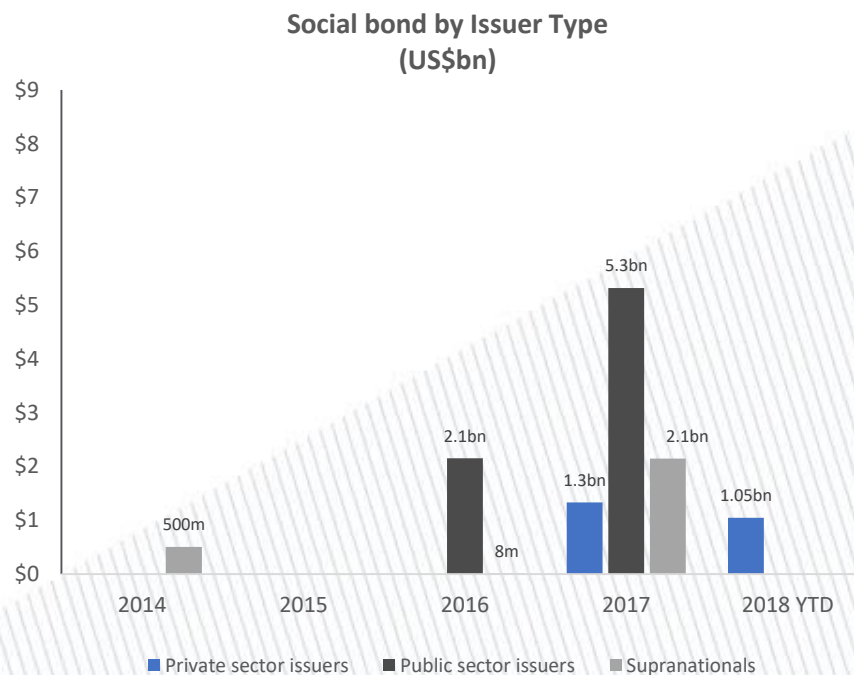
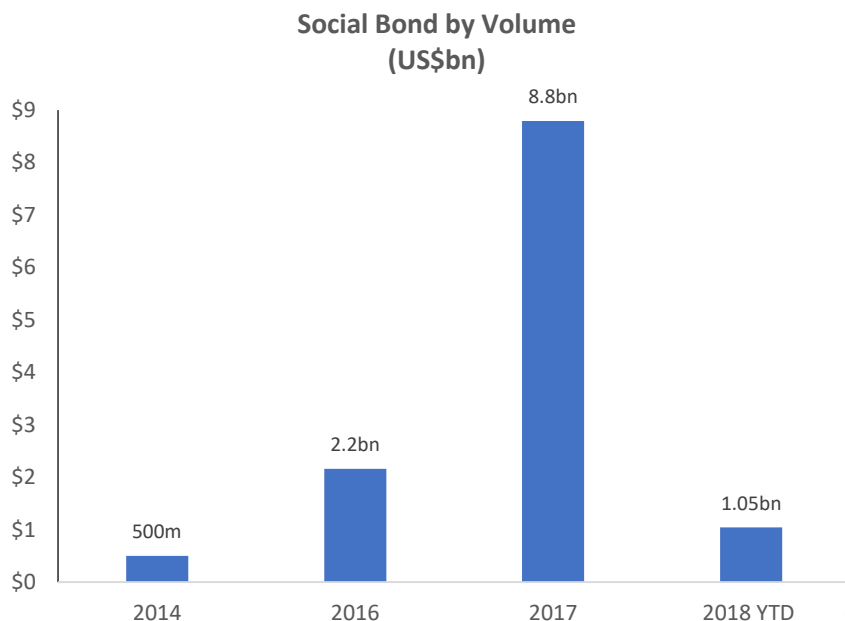


Source: Bloomberg, Crédit Agricole CIB

Comparison of green/social bonds issued between 2013-2017 to conventional bond curves of the same issuer in EUR

Social Bonds – Market Growth

- Since 2014, Social Bonds annual issuance volume has grown 17x as of 2017 with the majority of issuances based on the Social Bond principles.
- Issuers have also grown in diversity as more private sector issuers are coming to the market.



Green Bond and Social Bond Principles

The common feature of green bonds, social bonds and sustainability bonds is their predetermined use of proceeds and voluntary alignment with four core components of the GBP and SBP.*



The GBP and SBP are based on four pillars:

- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting



And External Review recommendations

Under the **Governance**, it is the Executive Committee that decides on updates of the GBP and the SBP with the input of members and observers through annual consultations that are organised by the Secretariat.

*Environmental Social and Governance (ESG) bonds also integrate governance criteria which are not featured in the GBP, SBP or SBG; and may refer to an issuers overall sustainability credentials rather than a specific use of proceeds.

Green Bond “Standards”

- The GBP is the market’s leading framework; CBI provides a green taxonomy, and a standard for the certification of green bonds
- International Organization for Standardization is currently developing Green Bonds Standards ISO 14030 expanding on the GBP

	Green Bond Principles	Climate Bonds Initiative
Recognition	<ul style="list-style-type: none"> • Global self-regulatory reference for international Green Bond market • Recognised and reflected in markets that have or are considering regulation e.g. China, EU, India and ASEAN countries 	<ul style="list-style-type: none"> • CBI standard and taxonomy is widely looked to by the official sector and the market • CBI has played key role in advising China on set-up of its GB market and is a full member of the EU’s HLEG on Sustainable Finance
Output	<ul style="list-style-type: none"> • GBP provides high level principles for GB issuers focused on transparency and reporting 	<ul style="list-style-type: none"> • CBI produces (i) a standard for GB certification, (ii) a green taxonomy and (iii) a GB list
Representativity	<ul style="list-style-type: none"> • Represents a consensus view based on input of entire market via GBP and its near 250 members and observers 	<ul style="list-style-type: none"> • CBI represents in particular a buy-side view as reflected by the composition of its Climate Bond Standard Board (CBSB)
Defining Green	<ul style="list-style-type: none"> • Provides only high level guidance on green through its Eligible Project Categories 	<ul style="list-style-type: none"> • Detailed guidance through a green taxonomy
Market Guidance	<ul style="list-style-type: none"> • The GBP is not involved in vetting individual GB issues • Provides broad market guidance through its online Questions & Answers 	<ul style="list-style-type: none"> • CBI manages a bond certification scheme that can be renewed post issuance and uses independent “accredited verifiers” • CBI’s GB list is largely used by the market and is a reference point for indices & database providers

Green Label Providers

Organisation	Product	Main characteristics
Climate Bond Initiative	Certification	<ul style="list-style-type: none"> • Pre issuance with post issuance option • Based on CBI standard and taxonomy • Supported by accredited external verifiers
Moody's	Green Bonds Assessment	<ul style="list-style-type: none"> • Focuses primarily on formal alignment with the GBP • May be updated periodically following issuer's reports (post issuance)
S&P Ratings	Green Evaluations	<ul style="list-style-type: none"> • Assessment of environmental impact and/or climate resilience of green bonds and green finance products • Incorporates the GBP
LuxFLAG	Green Bond Label	<ul style="list-style-type: none"> • Pre and post issuance • Reference to the GBP, CBI taxonomy and UN SDGs • Issuer to report every 2 years post issuance
CICERO	Shades of Green	<ul style="list-style-type: none"> • Pre issuance methodology to assess how green a bond is (from "dark green" to "brown") • Published in the Green Bond Second Opinion by CICERO

Examples of External Verifiers

Organisation	Description
Cicero	An independent, not-for-profit research institute, CICERO is a provider of second opinions on the frameworks for green bond investments since the market's inception in 2008
Sustainalytics	Sustainalytics is a global environmental, social and governance (ESG) and corporate governance research and analysis firm. It helps clients turn vast quantities of environmental, social and governance information into insightful, value-added analysis to enable more informed investment decisions.
Oekom	Oekom Research AG is a leading external reviewer in the segment of sustainable investments.
Vigeo Eiris	Vigeo Eiris is a global independent provider of ESG research and services for investors, public and private organisations and NGOs.

GBP & SBP - Recent Developments

2017 Update

- Expanded introduction restating GBP objectives
- Project and traceability language to facilitate sovereign and corporate issuance
- Issuer communication of environmental strategy and management of environmental & social risk factors
- Expanded and additional definitions of green categories

Other

- Revised “Q&A” in a more flexible format to provide market guidance
- New impact reporting metrics
- First publication of Social Bond Principles
- Sustainability Bond Guidelines published

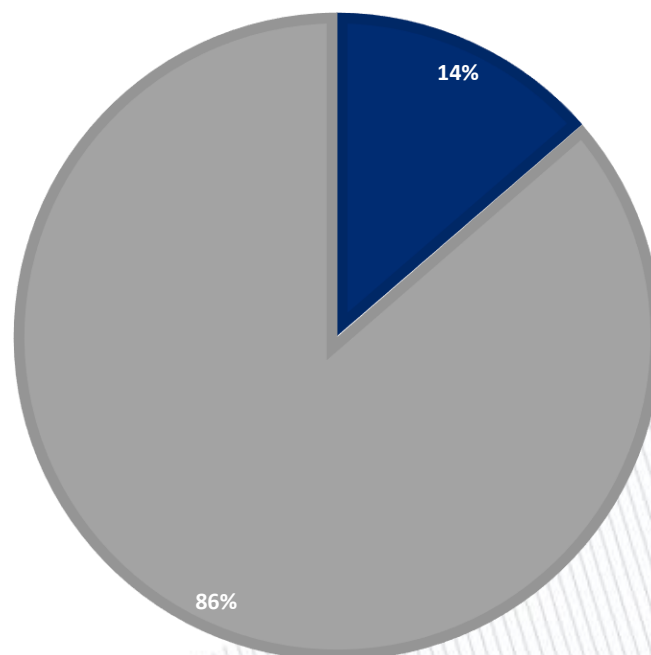


Green Bonds Principles Application

- An estimated 86% of the Green bonds issued in 2017 were aligned with the GBP and CBI's standards

GREEN BONDS ISSUED IN 2017

■ Other Green Bonds ■ Green Bonds aligned with GBP



GBP Regulatory Recognition

- **China** has released [Government guidelines](#) largely based on international market practices referring to the GBP and with an official green taxonomy
- **France** has released an [official label for green funds](#) which makes alignment with the GBP a requirement
- The Securities Exchange Board of **India** has released [listing disclosure requirements](#) for Green Bonds based on the GBP and international market practice
- Capital Market Regulators Launch ASEAN Green Bond Standards to drive Sustainable Investments for [ASEAN Green Bonds](#) aligned with the GBP (Nov 2017)
- **Japan** released [Green Bond guidelines](#) in March 2017
- The **European Union** has created a **High Level Expert Group (HLEG)** on sustainable finance that has made [recommendations](#) such as an EU sustainable taxonomy and a Green Bond standard

EU High Level Expert Group (HLEG)

- Created by the European Commission in December 2016.
- Its objective is to help develop an overarching and comprehensive EU strategy on sustainable finance to integrate sustainability into the EU financial policy.
- Members are individual experts representing European investors, stock exchanges, NGO, universities, trade associations, think tanks, rating agencies, consultancy firms and financial institutions.
- ICMA is participating as an observer, along with other associations, EU institutions, EIB, NIB and international organisations.
- The Group's recommendations were published in final report released 31 Jan 2018. A broad Action Plan is to follow in March 2018.



EU HLEG Final Report Recommendations for Green and Social Bonds

(January 2018)

- **Establish a Green Bonds Technical Committee in 2018**, in parallel with the Sustainability Taxonomy Technical Committee, to develop a long-term governance structure for the EU Green Bond Standard.
- Introduce in 2018 an **official European standard for green bonds**.
- Mandate the Green Bonds Technical Committee to develop in parallel, **accreditation criteria for providers of independent reviews and verification (external review providers)** for green bonds... (to) be managed by the national accreditation bodies in member states on a harmonised basis **or supervised by a competent ESA**
- In a second phase, explore the creation of an **EU Green Bond label** confirming alignment with the EU Green Bond standard and **the future EU Sustainability Taxonomy**.
- **Publish additional European sustainable product standards for other asset classes**. This could start with an EU Social Bond Standard and EU Sustainability Guidelines ...linking it to the future EU Sustainability Taxonomy, and building on other market best practice, such as the Social Bond Principles and the Sustainability Bond Guidelines.
- **Conduct an impact study of the EU Green Bond market** and design a R&D programme aiming to develop open-source methodologies, tools and technologies



Sovereign Green Bonds – Issuance

- **Five sovereign green bonds have been issued to date** including from France the largest issuance so far in the green bond market, the longest maturity date and the largest inaugural issuance in the market's history.
- Issuance has been from both developing and emerging markets with important symbolic issues from **Fiji and Nigeria**.
- Other Sovereigns expected to issue in the near term include **Belgium and Sweden** while **Indonesia** is in the process of issuing a green sukuk bond.

Issuer	Date	Bond Size/Coupon
Poland	<ul style="list-style-type: none">• Issue date:12 Dec 2016;• Maturity date:20 Dec 2021;	<ul style="list-style-type: none">• €750m• 0.500%
France	<ul style="list-style-type: none">• Issue date: 24 Jan 2017;• Maturity date: 25 June 2039;	<ul style="list-style-type: none">• €7bn up to €9.7bn following 2 taps• 1.75%
Fiji	<ul style="list-style-type: none">• Issue date: 1 November 2017/ May 2018;• Maturity date: 1 November 2022/ and 1 November 2030;	<ul style="list-style-type: none">• 100 million Fiji dollars (US\$50 million);• 5 years: 4.00%/ 13 years: 6.30%
Nigeria	<ul style="list-style-type: none">• Issue date: December 2017;• Maturity date: December 2022;	<ul style="list-style-type: none">• 10.69 billion Naira (US\$29.8 million)• 13.48% per year

Sovereign Green Bonds – Key Issues

Issues	Description	GBP Guidance	Market Status
Use of Proceeds	<ul style="list-style-type: none"> Desire for expanded definition of use of proceeds to cover all areas of governments support e.g. research funding, tax support, subsidies etc. 	<ul style="list-style-type: none"> 2017 GBP update expanded Green Project definition to “including other related and supporting expenditures, such as R&D” 	<ul style="list-style-type: none"> Mostly relevant to Developed Countries with full range of environmental policies in place
Tracking	<ul style="list-style-type: none"> National budgetary rules can preclude direct tracking of funds or segregated accounts 	<ul style="list-style-type: none"> 2017 communication to market on existing GBP flexibility that funds can be “otherwise tracked by the issuer in an appropriate manner” 	<ul style="list-style-type: none"> No common approach. Segregation, earmarking and tracking all being implemented
External Review	<ul style="list-style-type: none"> Governments often have expert environmental advice available within ministries/public agencies, as well as independent public auditing bodies, that could make external reviews seem superfluous 	<ul style="list-style-type: none"> GBP recommendation on External Reviews applies 	<ul style="list-style-type: none"> External reviews used in all cases to date
Reporting	<ul style="list-style-type: none"> Dedicated and exemplary reporting may be seen as requirement due to market expectation, civil society interest and general visibility 	<ul style="list-style-type: none"> GBP recommendation on Reporting applies 	<ul style="list-style-type: none"> Reporting in all cases, but no common approach. France has recently nominated an “Evaluation Council” to help develop best practice

Sovereign Green Bond - France Case Study

Details	Issue Date: 24 Jan 2017; Maturity Date: 25 June 2039; Amount: €7bn (order book of 23.5bn); Coupon: 1.75%
Use of Proceeds	<ul style="list-style-type: none">• Buildings: investment in energy efficient buildings, no efficiency targets stated• Transport: public transport, modal infrastructure, energy efficient transportation• Energy: renewable energy and its integration into power systems• Living resources and biodiversity: organic farming, sustainable forestry, biodiversity protection, protection of natural areas• Adaptation: observation systems, climate research, adaptation research• Pollution control and eco-efficiency: pollution monitoring, promotion of sustainable consumption, recycling.
Tracking	Tracking of allocation will be done by the Ministry of Finance. More than 50% allocated to current and future investments
External Review	Independent reviews provided by Vigeo Eiris
Reporting	<ul style="list-style-type: none">• An annual report on allocation of bond proceeds, reviewed by an audit firm.• An annual report on performance indicators of Eligible Green Expenditures• Ex-post environmental impacts of Eligible Green Expenditures, under the supervision of a high level Green Bond Evaluation Council.

Sovereign Green Bonds – Poland case Study

Details	Amount: €750m (books €1.5bn); Pricing date:12 Dec 2016; Maturity date:20 Dec 2021; Coupon: 0.500%
Use of Proceeds	<ul style="list-style-type: none">• Renewable Energy• Clean Transportation• Sustainable Agricultural operations• Afforestation• National Parks• Reclamation of Heaps
Tracking	Poland changed national law to specifically to allow earmarking of green funds through ministries to aid allocation/reporting/prevent double counting. There is also capacity to use on lending in the form of subsidies and budget allocation
External Review	Sustainalytics reviewed the State Treasury of the Republic of Poland Green Bond Framework and provided a Second Party Opinion
Reporting	The Ministry of Finance, Public Debt Department will report annually, or until proceeds are fully allocated, on: (i) aggregate amount allocated to the various Eligible Sectors (ii) remaining balance of funds which have not yet been utilized (iii) examples of Green Projects from each Eligible Sector(s) (subject to confidentiality disclosures) When feasible, the Ministry of Finance, Public Debt Department will also report on environmental and social impacts resulting from funded projects

Points for discussion

- Policy incentives needed to drive further green, social and sustainability bonds issuance?
- Right balance between regulation and market supported guidelines?
- What is the status of the green/sustainability initiatives in the respective institutions within the BMCG?

Contacts

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www.icmagroup.org/greenbonds

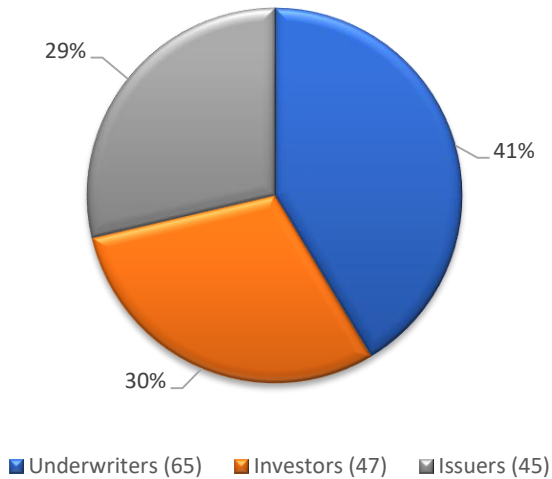
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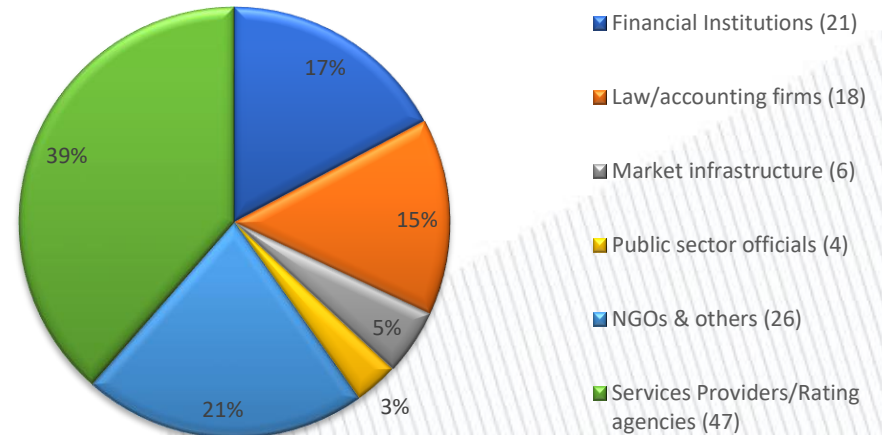
Green & Social Bond community

as of 23 January 2018

Members (157)



Observers (122)



- Financial Institutions (21)
- Law/accounting firms (18)
- Market infrastructure (6)
- Public sector officials (4)
- NGOs & others (26)
- Services Providers/Rating agencies (47)

GBP 2017 Executive Committee

Investors	Issuers	Underwriters
AMUNDI AM*	BANK OF CHINA*	BofA MERRILL LYNCH
AXA IM*	EDF*	BNP PARIBAS
BLACKROCK	EBRD	CREDIT AGRICOLE CIB
CaISTRs	EIB	HSBC
KFW	IFC	JP MORGAN
MIROVA	KBN*	NATIXIS*
TIAA-INVESTMENTS	NIB	RABOBANK
ZURICH INSURANCE GROUP	WORLD BANK	SEB

*newcomers

GBP Working Groups



Examples of topics covered in GBP Q&A

- Is there a definition of a Green Bonds?
- Can Green Bonds default?
- Is an external review required?
- Is the GBP a regulatory institution?
- Can « pure play » companies issue green bonds?
- Would a project be eligible if it were to improve energy efficiency on projects associated with fossil fuel production?
- Is there a difference between a social bond and a social impact bond?
- Are intangible assets or expenditures also eligible for green bonds?

ASEAN Green Bond Standards (November 2017)

The ASEAN GBS are aligned and guided by the four core components of the GBP. It includes the following key additional features :

- Eligible Issuers must have a geographical or economic connection to the Region
- Fossil fuel power generation projects are explicitly excluded from the ASEAN GBS
- Requirements on public and online availability of information on use of proceeds, project evaluation and selection, and management of proceeds
- External reviewers' credentials and scope of review conducted must be made publicly accessible
- Encouragement for more frequent reporting from issuers

Sovereign Green Bonds: Fiji

Details	Amount: 100 million Fiji dollars (US\$50 million); Pricing date: 1 November 2017, May 2018; Settlement date: 1 November 2017, May 2018; Maturity date: 1 November 2022 and 1 November 2030; Coupon: 5 years: 4.00%; 13 years: 6.30%
Use of Proceeds	Renewable Energy and Energy Efficiency; Resilience to Climate Change for Highly Vulnerable Areas and Sectors; Clean and Resilient Transport; Reducing Pollution and Greenhouse Gas Emissions; Water Efficiency and Wastewater Management; Sustainable Management of Natural Resources; and Eco-efficiency.
Tracking	The Ministry of Economy maintains designated 'ring-fenced' sub-account for Green Bond proceeds and tracks Eligible Expenditures. Any excess cash balances in the sub-account, Fiji may apply its usual liquidity management practices.
External Review	Sustainalytics evaluated Fiji Sovereign's green bond transaction and its alignment with the Green Bond Principles.
Reporting	Annual reporting of list of the projects to which the Green Bond proceeds have been allocated and impact reporting based on ex ante estimates of expected annual results for a representative year once a project is completed and operating at normal capacity.

Sovereign Green Bonds: Nigeria

Details	Issue Date: December 2017; Maturity Date: December 2022; Bond size: 10.69 billion NGN (\$29.8 million); Coupon: 13.48% per year
Use of Proceeds	<ul style="list-style-type: none">• Renewable Energy• Energizing Education: generation and provision of adequate power supply to 37 Federal Universities and 7 University Teaching Hospitals across the country.• Afforestation Program
Tracking	The Nigerian authorities have adopted a process to manage the segregation and tracking of green bond proceeds: creation of a centralized Green Bonds Proceeds Account held at the Central Bank of Nigeria, and individual sub-accounts for specific environmental projects. Any unallocated proceeds will be held in accordance with the government's normal liquidity management policy, which comprises of investments in cash, short-term deposits and other short-term liquidity instruments.
External Review	Moody's Assessment, Climate Bond Initiative Certified and pre-issuance assurance from an independent verifier (DNV GL)
Reporting	Bi-annual reporting, initially within one year of the issuance and subsequently until full allocation of the proceeds. Ongoing disclosure over the life of the bond, and potentially afterwards to track the annual performance of Nigeria's nationally determined contribution (NDC) under the Paris Agreement, which runs until 2030. NDC targets will be reported on an aggregated basis, the authorities have indicated that reporting on the green bonds will be provided at a project level.