

# The Green Bond



## SPECIAL EDITION: SCENARIOS FOR 2019

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### Letter to the Reader

*"We have done our annual review and are confident to see growth in 2019. Especially Europe will see growth but also the U.S. and many other countries - and at last we expect to see both banks and corporates become more frequent issuers!"*

*(Continues, pg. 2)*

**Christopher Flensburg**  
Head of Climate & Sustainable Finance, SEB

### Executive Summary

November 2018 set a **monthly record** for green bond issuance, with a Thanksgiving Feast of **USD 31.5 bn** served, up by 21% YoY. Chinese issuance was decisive this year and last, accounting for 43% of volume this November (with the majority coming from Industrial Bank's USD 9.6 bn equiv. contribution). The November haul was larger than the entire amount of issuance in **3Q18 (USD 30.5 bn)** and helped to overcome lethargy left over from a weaker summer autumn, lifting the green bond market up **6% YoY to USD 168 bn** and taking cumulative issuance to **USD 563 bn**.

Despite the energetic November, our earlier characterizations appear to remain accurate and it looks that the market will end 2018 in line with our previously described expectations of a "move sideways", with issuance levels more on par with the USD 173 bn seen in 2017.

We expected 2018 to be a year of "*healthy consolidation with more modest growth*", because we are **bullish** in terms of 2019 (and medium-to-long-term prospects) on account of growing refinancing backlogs intermingled with a relentlessly strengthening investment proposition across a wide range of green infrastructure projects and activities.

This development has unfolded right across the debt capital markets in 2018; with increasing volumes of green loans, green mortgages, green commercial paper (as discussed by Vasakronan in the last edition) and green derivatives. The most striking development in the loan markets of 2018 has been the issuance of **USD 35.5 bn of sustainability and ESG-linked corporate loans**.

The outcome of SEB's annual **sector-by-sector analysis**, informed by these fundamentals, suggests that 2019 has bright growth prospects for the green bond market, with our base-case "**Organic Evolution**" scenario, constructed country-by-country showing the market having the potential to grow to **USD 210 bn** in 2019. We also see the green bond market having the possibility to surprise to the upside in 2019 to **USD 240 bn** in our "**Green Growth**" scenario.

Intra-sector, we see the potential in 2019 for USD 67-72 bn from **financials**; USD 45-50 bn from non-financial **corporates**; USD 25-30 bn in **securitisations**; USD 23-28 bn from **sovereigns**; USD 20-22 bn from **agencies**; USD 16-18 bn from **supranationals**; USD 12-14 bn from **municipals**; and USD 4-6 bn of **project bonds**. We also expect to see the first **Green Collateralized Loan Obligations (CLOs)** launched in 2019. SEB co-authored a **white paper** on the potential for this asset class for the G20 Sustainable Finance Study Group.

When viewed alongside **social** and **sustainability** bonds, which have emerged strongly in 2018, the combined market for these labelled *sustainable bonds* has exceeded **USD 190 bn** of issuance YTD. Taking into account these new cousins of the green bond, we expect the overall sustainable bond market to feature growth this year. In addition to our green bond scenarios, we see the potential for a further **USD 38-45 bn of social and sustainability** bonds issued in 2019, latching on to the momentum that pushes forward the green bond market.

### SEB Climate & Sustainable Finance Review

*Guest contributors welcomed in this edition:*

SEB's EC TEG member **Marie Baumgarts**, December update on EC Sustainable Finance Work;  
**The World Bank**, Green Bonds: From evolution to revolution in 10 years;  
**EIB and CUF**: Progress towards a common language in green finance;  
**Dr. Ma Jun, G20 Co-Chair**: Green Investment Principles for the Belt and Road;  
**Michael Sheren, G20 Co-Chair**: Meeting the challenge of financing sustainable infrastructure



**Letter to the Reader (full text):**

Back to growth: After a year of consolidation the market is ready to grow again. We have done our annual review and are confident to see growth in 2019. Especially Europe will see growth but also the U.S. and many other countries - and at last we expect to see both banks and corporates become more frequent issuers!

Alongside green bond growth, we are beginning to see early adopters move into social and sustainable bonds, a trend we expect to continue - especially since this is a strong trend on the loan side as well.

Inside this edition we have contributions from:

1) Heike Reichelt from The World Bank who shares her reflections in connection with The World Bank's 10-year Green Bond anniversary (including a link to a short film with insights from key stakeholders);

2) Aldo Romani from EIB, who discusses their recent Sustainability Awareness Bond and the important work EIB has done with the Central University of Finance and Economics to drive Green taxonomies in Europe and align the structure with the Chinese taxonomies to allow harmonization over time;

3) Michael Sheren, Co-Chair of the G20 Sustainable Finance Study Group, who describes the contribution SEB and others made to the G20 on Green CLOs which potentially can be (if we find the right Governance model) a milestone in re-introducing this field to investors;

4) Dr. Ma Jun, Co-Chair of the G20 Sustainable Finance Study Group who reflects on China's recent principles for Greening the Belt & Road Initiative; which we see as a major announcement since this is the first time (to our knowledge) that a cross-region, cross-shareholder, infrastructure plan, which is not driven by MDBs, gives clear directions on high environmental standards - and will have a direct impact on procurement processes.

So - in short - many reasons to be bullish on 2019 - the only thing we continue to stress - is that alongside building a financial system which understands and supports societal matters, most of what we do is to build capacity to understand long term financial stability factors. And the further we get and the more we understand, the faster we will price these factors in.

Enjoy your reading,

Christopher Flensburg

Head of Climate & Sustainable Finance, SEB



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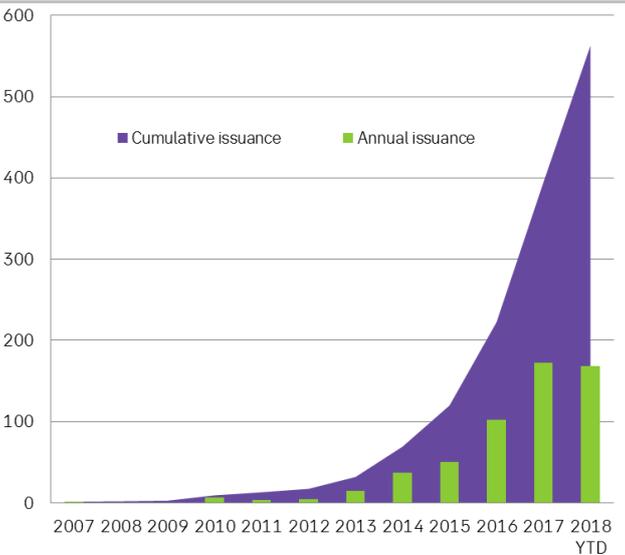
## 1. Green Bond Market Review and 2018 Outlook

November 2018 set a **monthly record** for green bond issuance, with a veritable Thanksgiving Feast of **USD 31.5 billion** served, up by 21% Year-over-Year (YoY) as seen in Figure 2. This result was made all the more notable since November 2017 had held the previous record for green bond issuance in a single month. Chinese issuance was decisive this year and last, accounting for 43% of volume this November (with the majority coming from Industrial Bank's USD 9.6 billion equiv. contribution). This single month's haul was larger than the entire amount of issuance in 3Q18 (USD 30.5 billion) and helped to overcome lethargy left over from a weaker summer autumn, lifting the green bond market up 6% YoY to **USD 168 billion** and taking cumulative issuance to USD 563 billion (Figure 1).

However, in our January green bond market outlook, we posited that prospects for 2018 can be expected to be balanced by issuers and investors taking time to absorb the acceleration that has occurred in the market over the last years, while calibrating their strategies and also considering opportunities via burgeoning social and sustainability bond financing channels (Figures 7 and 8). Despite the energetic November, this characterization appears to remain accurate and it looks that the market will end 2018 in line with our previously described expectations of a "move sideways", with issuance levels more on par with the USD 173 billion seen in 2017. Indeed, as this publication went to press issuance in the first week of December had already fallen back to level off Year-to-Date (YTD)<sup>1</sup>.

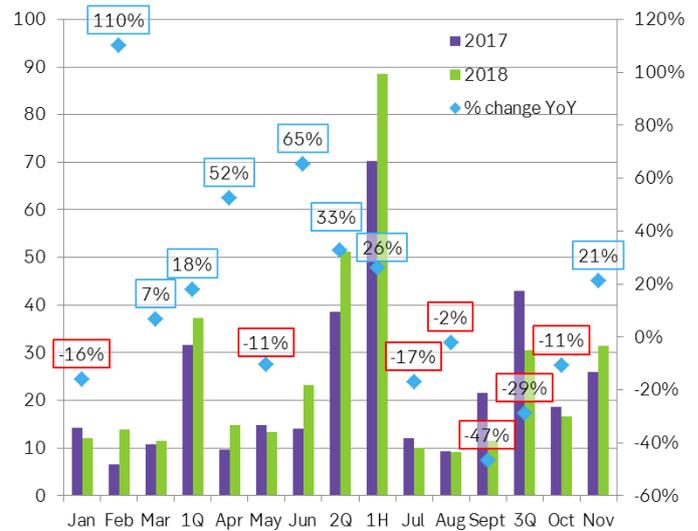
Even so, a handful of transactions that remained for December keep the door open for a year of very modest growth, coupled with the fact that it takes time to account for the full volume of green bonds that have come to market. In particular, domestic issuance in China and private placements, project bonds and securitisations; with Fannie Mae Green MBS volumes only known through October.<sup>2</sup>

**Figure 1. Total Cumulative Issuance (USD Bn)**



Source: SEB analysis based on Bloomberg and SEB data

**Figure 2. Periodic issuance (USD Bn) and % change YoY**



Source: SEB analysis based on Bloomberg and SEB data

We also wrote that we expected 2018 to be a year of "healthy consolidation with more modest growth", because we are bullish in terms of 2019 (and medium-to-long-term prospects) on account of growing refinancing backlogs interwoven with a relentlessly strengthening investment proposition across a wide range of low-carbon and resource-efficient infrastructure projects and activities. These drivers of green investment draw their strength from fundamentals on both risk and opportunity sides of the equation, as well as supportive policy attention. Combined, these underpinnings look set to bolster green (as well as social and sustainability) bond issuance in 2019 as issuers across sectors find attractive sustainable

<sup>1</sup> Henceforth, YTD will refer to the period of 1 January 2018 – 28 November 2018

<sup>2</sup> SEB uses Bloomberg (BNEF) data that includes self-labelled green bonds as well as those tagged by Bloomberg as green bonds. For methodologies used to qualify green bonds, see Bloomberg (2018) *Guide to Green Bonds on the Bloomberg Terminal*. Asset-level bonds, schuldscheine and private placements are included and pure plays excluded. The data are supplemented by SEB from other sources to provide a more current assessment of issuance, since there is a lag for some green bonds being uploaded to the Bloomberg Terminal.

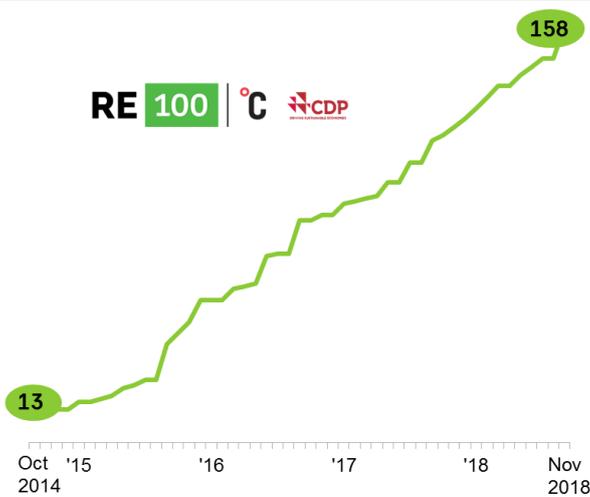
infrastructure projects to fund on their balance sheets. This development has unfolded right across the debt capital markets, with the emergence of green loans, green mortgages, green commercial paper (as discussed by Vasakronan in the last edition), green derivatives. The most striking development in the loan markets of 2018 has been the issuance of USD 35.5 billion of sustainability and ESG-linked corporate loans.

As the world's climate negotiators descended on Katowice for COP24 (the 24th annual UNFCCC conference on climate change), climate change policy was in the news. Michael Liebreich reminded in his [annual letter](#): "Climate economics precede climate diplomacy, not the other way around, and the economics keep looking better and better."

This adage captures an overarching megatrend that we inspected in detail in our [November edition](#), where many types of green infrastructure projects, from renewable energy to batteries continue to be the benefit from persistent cost-down curves that are increasingly enabling them to compete against alternatives on economics alone. In the second half of 2018, the BNEF global benchmark levelised cost for solar fell by 14% and the wind benchmark by 6%. Despite reducing policy support for solar power mid-year, China looks set to install another 40GW by year-end, down 25% YoY, but with the entire shortfall looking set to be absorbed by growth in other markets. At the same time, electric vehicles reached 5% of sales in China in 2018; with China's internal combustion car market demand now flat and all growth being absorbed by electric vehicles.

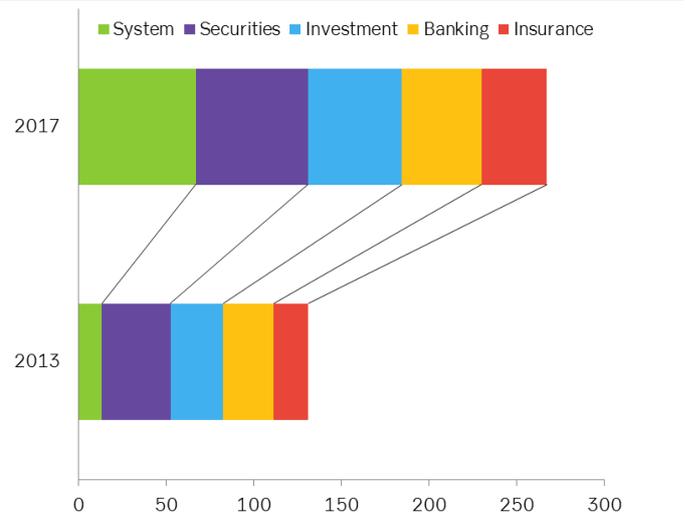
From the corporate side, Figure 3 shows how the continually improving economics of renewables over the last four years have allowed 158 influential companies in more than 140 markets across the globe to [commit to powering themselves with 100% renewable electricity](#). This trend has coincided with a surge in corporate green bond issuance (with a majority of proceeds being used for renewables and green buildings).

**Figure 3. Companies committed to 100% renewable power under the RE100 initiative**



Source: CDP, The Climate Group

**Figure 4. Global Green & Sustainable Finance Policy and Regulatory Measures by Asset Class, end-2013 vs. end-2017**



Source: UN Environment

While related to climate policies, a suite of newer regulatory measures has emerged in recent years targeted specifically at green and sustainable finance. UN Environment found in a recent [report](#) that over the past four years, a 'quiet revolution' has taken place with concrete measures taken by financial policymakers and regulators to promote green and sustainable finance having doubled from 131 in 43 jurisdictions to 267 in 53 jurisdictions (Figure 4). These sustainable finance regulatory measures implemented by national and sub-national authorities have been steadily increasing across four main asset class categories since 2009 – with a Compound Annual Growth Rates of 39% for Financial System-wide focused measures; 20% for the Banking sector; 15% targeted at types of Securities e.g. Bonds/Equities; and 14% for Insurance or Investment actors. There has been significant uptake at the international level as well, and the work of the G20 in this area is surveyed by Michael Sheren, co-chair of the G20 Sustainable Finance Study Group in a [contribution](#) in this publication.

Over a similar period, 990 institutions (with USD 7.2 trillion under management) have declared some form of fossil fuel divestment; signatories to the Principles for Responsible Investment

have reached 2,400 major asset owners and asset managers (with USD 82 trillion under management). In half this period, institutions with over USD 100 trillion of assets under management have indicated support for the recommendations of the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD).

**Green Bond Market Outlook for 2019**

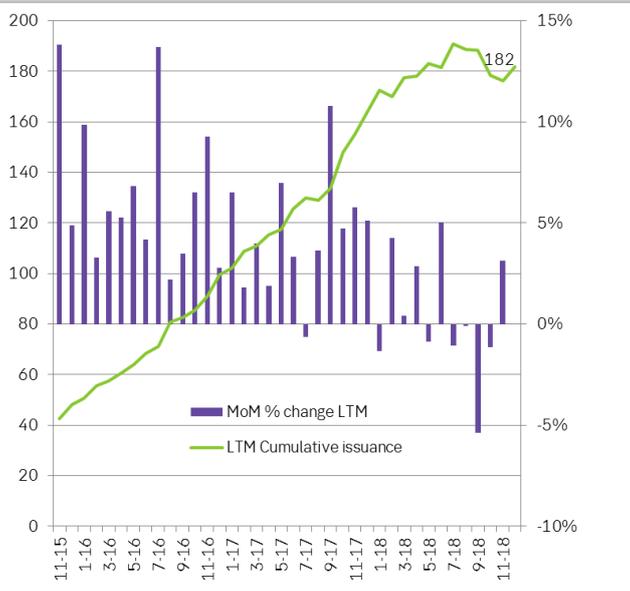
So it comes to pass that the outcome of SEB’s annual [sector-by-sector analysis](#), informed by these fundamentals, suggests that 2019 has bright growth prospects for the green bond market, after having stabilised at around USD 180 billion of issuance on a moving Last Twelve Months (LTM) basis (Figure 5). As shown in Figure 6, our base-case “**Organic Evolution**” scenario, constructed [country-by-country](#) shows the market having the potential to grow to **USD 210 billion in 2019**. This is our reference scenario because it sees the green bond market continuing its now familiar quest of organically evolving across geographies and sectors.

The main drivers of green bond issuance in this scenario remain steadily increasing investor demand and issuers innovating to tap into it and financially articulate their sustainability strategies. Issuers continue to use the green bond market to offer fixed income investors risk-adjusted return with environmental impact, while also expressing how they are seeking out compelling opportunities in green investment, which are becoming more plentiful and profitable due to economic, technological, market, policy, and other forces at work. At the same time, issuers use the green bond market to signal their awareness of environmental and climate risks, increasingly entering the radar screens of the ratings agencies and regulators (as discussed at length in the previous edition).

We also see the green bond market having the possibility to surprise to the upside in 2019 to **USD 240 billion** in our “**Green Growth**” scenario. In this scenario, the same drivers are at work but our assumptions are bolder in terms of the prospective scale of the green infrastructure investment pipeline, and more issuers across new sectors and geographies find deeper pools of projects and activities to fund on their balance sheets. In this scenario, we also assume that the modest policy incentives offered and proposed by a handful of governments stimulate additional issuance.

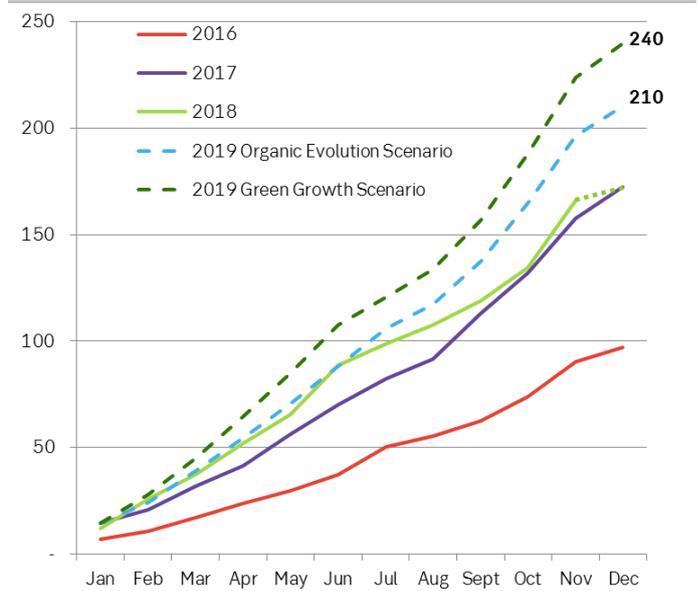
While a counterfactual is indefinable, our view supported by issuance data is that the work of the European Commission on Sustainable Finance has supported green bond market confidence for both European issuers and investors so far. Therefore, both scenarios assume that enduring transparency on the timeline and contents, along with the solicitation of active feedback from the market during public consultation periods (such as the [one released in November for the draft Taxonomy](#)), will continue to contribute positive momentum for the European market in 2019.

**Figure 5. Green Bond Issuance Last Twelve Months Analysis (USD Bn, LHS) with % change (RHS)**



Source: SEB analysis based on Bloomberg and SEB data.

**Figure 6. Cumulative Annual Green Bond Issuance with SEB 2019 Scenarios**

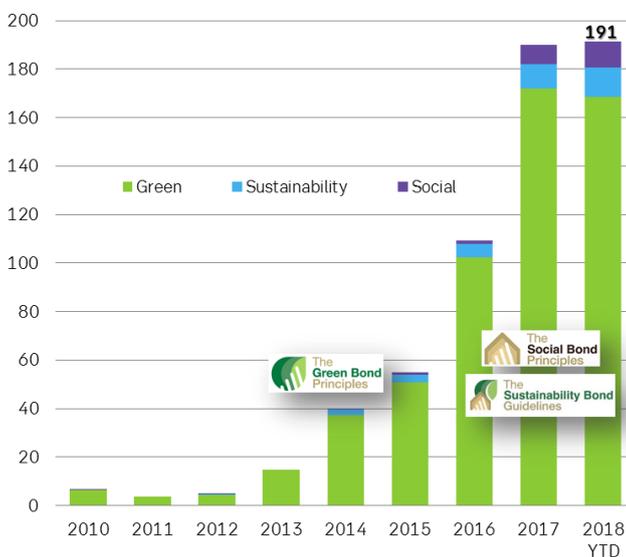


Source: SEB analysis based on Bloomberg and SEB data.

It is also increasingly apparent that as the green bond market enters the mainstream (while still making up only 0.2% of all bond issuance YTD); it integrates closer into the overall bond market, which has slowed throughout 2018 as a result of tempestuous market conditions, and myriad macroeconomic and geopolitical distresses. Accordingly, if macroeconomic troubles intensify, and if the global economy falls into recession in 2019, green infrastructure investment as well as prospects for green bond financing could also be negatively affected. It is therefore prudent to note that a situation such as this could jeopardize our scenarios. However, while [SEB's recent economic outlook](#) sees that slower growth tendencies in Western Europe and Asia, plus ever-tighter resource use and rising US interest rates, have increased downside risks to the global economy, and we have lowered our GDP outlook slightly, we still expect global growth to stay a bit above trend in 2019-2020, providing support for corporate earnings, borrowing and equities, though we expect heightened volatility to endure.

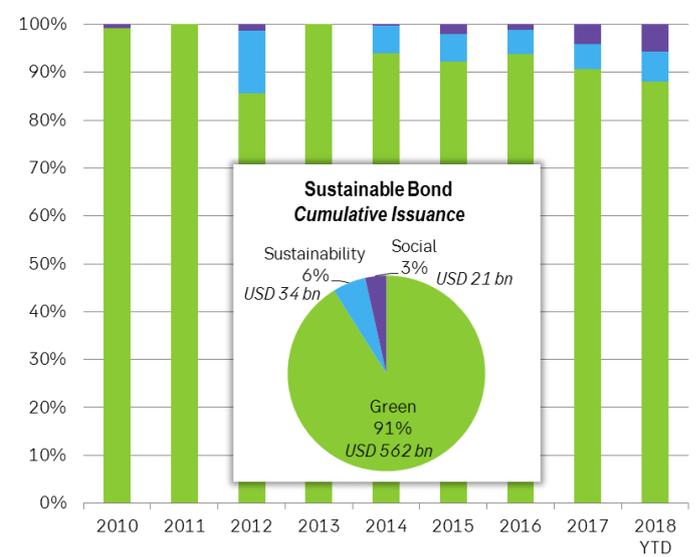
Vitaly, there were several occasions in recent months where green bonds showed their potential to raise debt capital when other types of bonds could not. Over the last two months, green bonds helped to keep the overall primary bond market open as stocks sold off around the world, with a particularly tough day in "Red October" seeing more green bonds out in the primary market than traditional bonds<sup>3</sup>, and La Poste's inaugural green bond very successfully and notably keeping the entire European corporate syndicated primary bond market open (in the third week of November).<sup>4</sup> These instances highlight the ability of green bonds to serve as valuable funding options during periods of market volatility.

Figure 7. Sustainable Bond issuance by type (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data.

Figure 8. Sustainable Bond issuance by type (% Share)



Source: SEB analysis based on Bloomberg and SEB data.

In addition to our green bond scenarios, we see the potential for a further **USD 38-45 billion of social and sustainability** bonds issued in 2019, latching on to the momentum that pushes forward the green bond market. These other thematic bonds have emerged in force since the adoption of the UN Sustainable Development Goals and the elaboration of the Social Bond Principles<sup>5</sup> and Sustainability Guidelines last summer (as seen in Figures 5 and 6). The combined market for such labelled sustainable bonds has exceeded USD 190 billion of issuance YTD. Sustainability bonds have added USD 12.2 billion and social bonds USD 10.7 billion to claim a combined 12% market share YTD (and 9% out of cumulative issuance). As an exemplar of this trend, as well as market action around the EC's Sustainable Finance Agenda, the EIB (which provides a [contribution](#) to this edition) launched its inaugural [Sustainability Awareness Bond](#) in the autumn, where SEB was honoured to act as Joint Lead Manager.

Returning to the green bond market and why its growth rate tapered this year, there are a number of areas that can be pointed to where issuance is down significantly when compared YoY and can be attributable to distinct factors.

<sup>3</sup> See for instance Bloomberg Story {NSN PGF91W6S9729 <GO>}

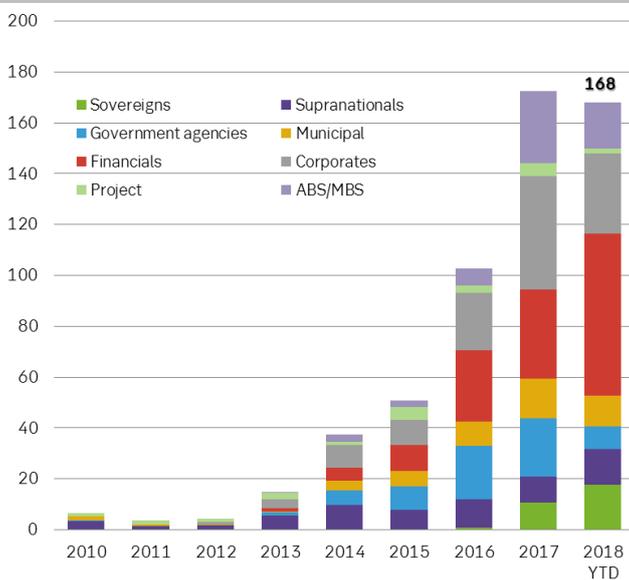
<sup>4</sup> See for instance Global Capital Story <https://www.globalcapital.com/article/b1byjbfz2dbt/la-poste-delivers-green-gift-on-black-friday-to-lift-the-gloom>

<sup>5</sup> <https://www.icmagroup.org/green-social-and-sustainability-bonds/social-bond-principles-sbp/>

A waterfall diagram presented in Figure 11 shows how USD 168 billion of issuance by the first of December can be broken down by classical public (SSA) and private (corporate and asset level) splits. Most significantly, **government agencies** (such as national development banks, local funding authorities, export credit agencies, etc.) are down -60% YoY with USD 9 billion. **Municipalities** languished much of the year, although returned very strongly in November, with New South Wales' AUD 1.8 billion trade helping municipalities up +12% YoY to USD 12 billion. Both sectors appear to have green infrastructure project pipelines that are in need of replenishing and both also exemplify smaller issuers which may not have the capacity to issue green bonds every year. We expect them to return to form in 2019, with the potential for **USD 20-22 billion from agencies** and **USD 12-14 billion from municipalities**.

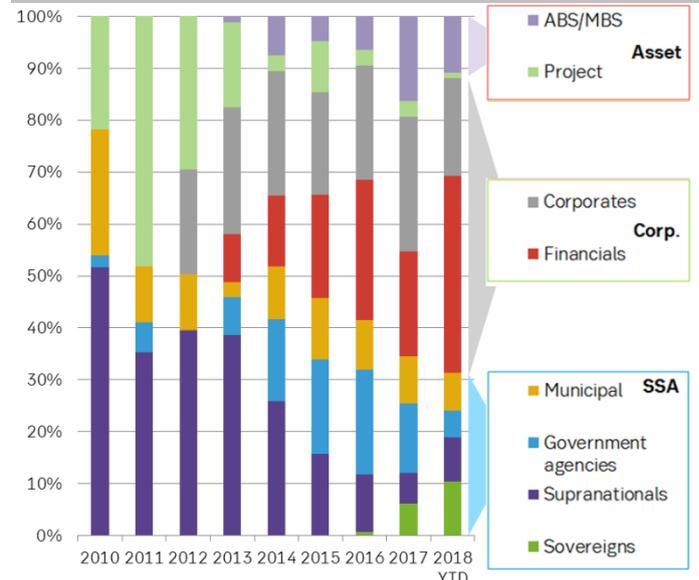
**Non-financial sector corporates** were the other underperformer in 2018 with a seemingly formidable USD 31 billion of issuance actually coming in down -25% YoY. While EU corporates carried this segment of the market in 2018, green bond uptake has been underwhelming elsewhere, especially in the U.S., compared to the vast potential for this class of issuer. Although a stylized illustration, whereas 16% of Swedish OMX and 14% of the French CAC stock exchange members have issued green bonds, only 3% of the American S&P500 and 4% of the German DAX members have followed suit. With this as a backdrop, we see the potential for **USD 45-50 billion** of issuance in 2019 from non-financial corporates.

Figure 9. Green bond market growth (USD Bn) by sector



Source: SEB analysis based on Bloomberg and SEB data.

Figure 10. Sectoral evolution (% share of annual issuance)



Source: SEB analysis based on Bloomberg and SEB data. SSA: Sovereign, sub-sovereign (municipal/regional), Supranational and Agency

Conversely as can be seen in Figures 9 and 10 there a number of areas of genuine dynamism so far this year that have carried the market; in particular the contributions made by **sovereigns** (+87% YoY), **financial sector issuers** (+92% YoY), **supranationals** (as The World Bank celebrates its [10 Year Green Bond Anniversary](#)) and **European issuers** as a whole across sectors (+35% compared to -6% for all EU bonds YoY) and all issuers bringing Euro bonds (+21% compared to -8% for all EUR bonds YoY).

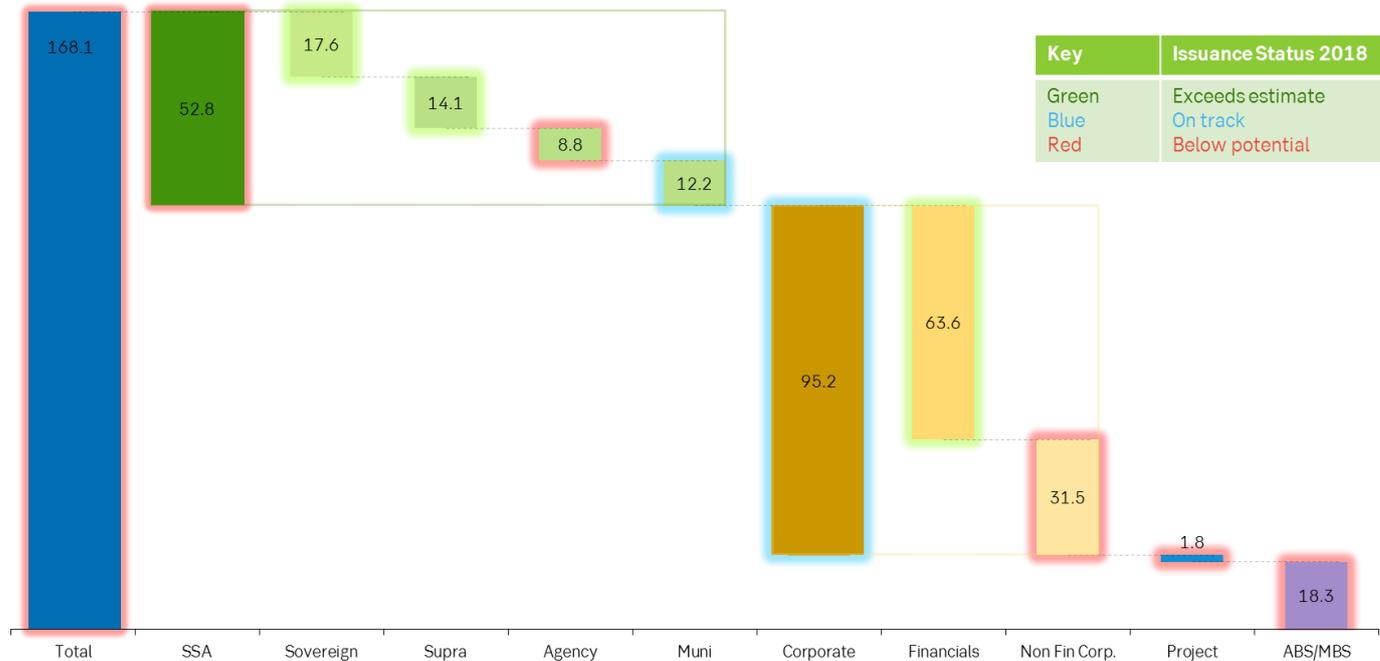
Sovereign issuance exceeded our expectations in 2018 with seven active issuers. Levels surpassed even our upgraded year-end potential figure of USD 17 billion, with a further half dozen countries mulling sovereign issues for 2018/19, notably the Netherlands which would be the first AAA-rated green sovereign. In 2019, we see the potential for USD 23-28 billion from sovereigns.

Financials have been the driving force behind the green bond market all year, almost doubling their levels YoY to USD 63 billion. This vitality comes from jumbo-sized issues, in many cases from repeat issuers e.g. HSBC, ING, Credit Agricole; and a resurgence of activity from Chinese banks in 2H18. China Industrial Bank set a record for the market with a mammoth USD 9 billion (equiv) trade comprised of two CNY green bonds plus a Euro and Dollar in November. We are bullish on this sector for 2019 for many reasons, covered bonds included, and see the potential for USD 67-72 billion of issuance from financials (including real estate) in 2019.

With regards to other types of green bond issuers, project bonds appear below their potential, although it takes time to track them down. We see potential for around USD 4-6 billion of green project bonds refinancing renewable energy in 2019.

Securitisations fell back below their potential lagging -27% YoY, but with Fannie Mae in the vanguard and yet to catalogue 4Q18 issuance, and other elusive green ABS perhaps not tagged on the Bloomberg Terminal yet, levels could still rise in 2018. There is plenty of room for growth in this sector, with the potential for at least USD 25-30 billion in 2019 of green ABS and MBS. We also expect to see the first Green Collateralised Loan Obligations (CLO) emerge in 2019; and SEB was honoured to co-author [a White Paper](#) on this topic along with White & Case and S&P Global Ratings (with contributions from APG, Och Ziff and ICMA) for the G20 Sustainable Finance Study Group.

Figure 11. Green bond issuance in 2018 by sector and sub-sector (USD Billion)



Notes: ABS/MBS = Asset Backed Securities/Mortgage Backed Securities; SSA = Sovereign, Supranational, Agency and Municipal, Regional and other sub-sovereign; Financials include Real Estate and Insurance; N-F Corp. = Non-Financial Corporates. SEB uses the BICS sector classification system with some adjustments using Bloomberg/MSCI green bond sector classifications. Bloomberg (see Guide to Green Bonds on the Bloomberg Terminal) methodologies used to qualify green bonds, including Schuldscheine and private placements, and excluding pure plays.

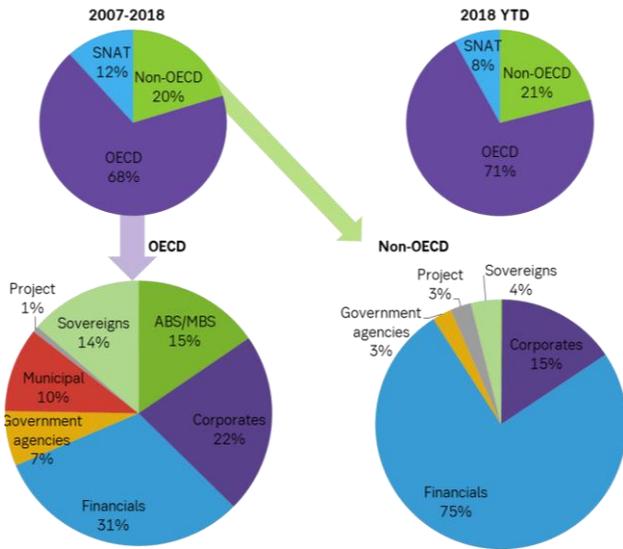
Source: SEB analysis based on Bloomberg/BNEF and SEB data.

From a geographic perspective, activity in the green bond market is broad and dispersed; with 45 jurisdictions<sup>6</sup> (excluding Supranationals) featuring green bond issuance in 2018, compared to 42 in 2017 (and 53 in total since 2007). The markets also look quite different in terms of their sectoral composition when split into OECD vs Non-OECD jurisdictions (Figure 12).

The center of gravity shifted towards **Europe** in 2018, taking 41% of the market compared to 34% in 2017. An analysis of moving Last Twelve Months (LTM) of green bond issuance shown in Figure 13 visualises North American LTM numbers that have been declining since their peak in May; crossing in the opposite direction of European issuance in June. European issuance has been steadily climbing to surpass USD 70 billion, when including the dynamic Nordic market shown separately in Figure 13. Chinese LTM numbers dropped by almost USD 10 billion from their peak at USD 34 billion before bouncing back to USD 30 billion on the strength of financials resuming their traditional activity in 2H, and Japan has boosted Asia-ex China issuance to surpass the Nordics in October.

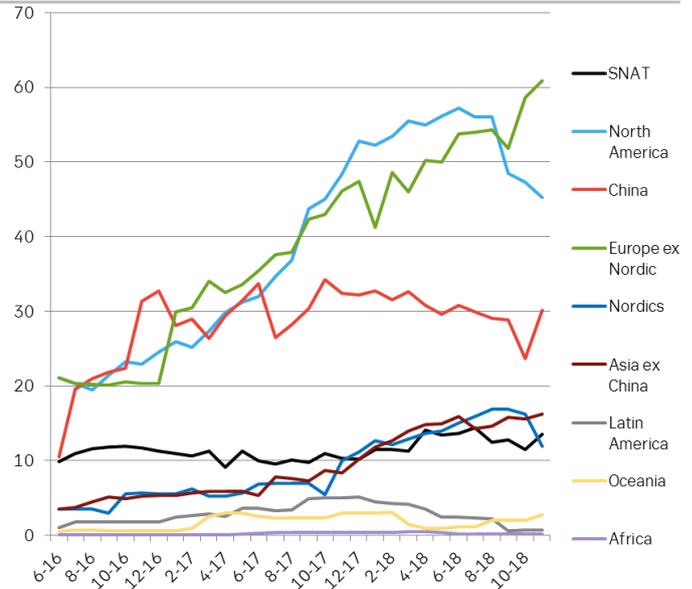
<sup>6</sup> Classified by Ultimate Parent Country of Risk.

Figure 12. OECD/Non-OECD green bonds and sectors regions



Source: SEB analysis based on Bloomberg and SEB data

Figure 13. Last Twelve Months Analysis by Region (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data.

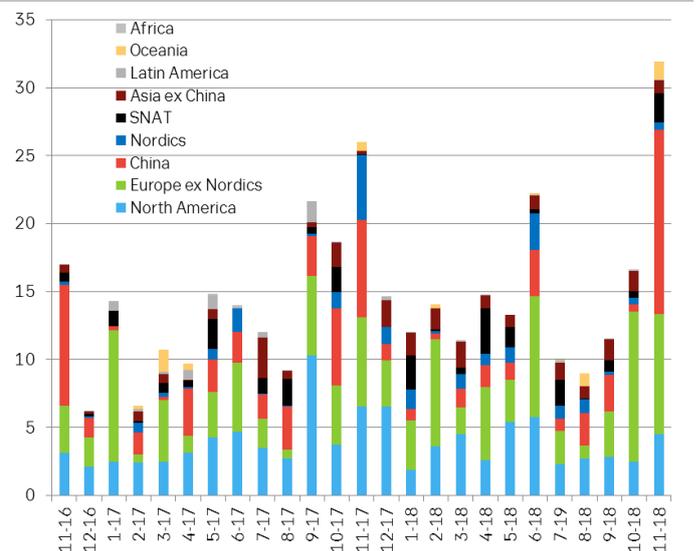
In terms of country rank (Figure 14) the Top 5 are unexcitingly in precisely the same order as last year. With USD 33.6 billion of issuance YTD the United States rested in familiar first place which it had held all throughout 2017; however issuance levels were down 13% YoY. As usual, green securitisations from 10 issuers account for 54% of US issuance; with Fannie Mae cataloguing their market leading USD 16.2 billion of green MBS issued through 3Q18. The remainder of the U.S. market came from the corporate bond market (USD 9 billion from 12 issuers, split evenly between corporates and financials, mostly in real estate) and USD 6 billion from 53 individual municipal entities, including San Francisco PUC, California Infrastructure & Economic Development Bank, New York MTA and D.C. Water. We see the potential for issuance to rise significantly in the U.S: in 2019, to around USD 45 billion, with much stronger contributions from corporates next year.

Figure 14. Top 15 geography by issuance in 2018, incl. Supras

Rank	Geography	YTD 10/2018 (\$ Bn)	Rank Change YoY	Issuance Volume Δ YoY
1	UNITED STATES	33.6	=	-13%
2	CHINA	30.7	=	-1%
3	FRANCE	18.8	=	3%
4	SNAT	13.5	=	33%
5	GERMANY	7.5	=	-22%
6	NETHERLANDS	6.9	+2	60%
7	BELGIUM	6.7	NEW	∞
8	SWEDEN	6.0	-1	27%
9	SPAIN	4.9	-3	-7%
10	CANADA	4.8	+1	39%
11	JAPAN	3.8	+6	87%
12	NORWAY	3.5	+10	428%
13	IRELAND	3.5	NEW	∞
14	AUSTRALIA	3.3	=	14%
15	ITALY	3.0	=	21%

Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

Figure 15. Regional distribution of green bond issuance



Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

The Chinese market held on to second place just below the U.S. and returning to last year's issuance levels, with at least USD 30.7 billion YTD according to Bloomberg figures. The distribution is dominated by financial borrowers (USD 24.6 billion) and non-financial corporates (USD 4.7 billion); the remainder comes from agencies (such as Agricultural Development Bank

of China and China Export-Import Bank) along with a handful of green securitisations. We see the potential for similar levels of issuance next year of around USD 30 billion.

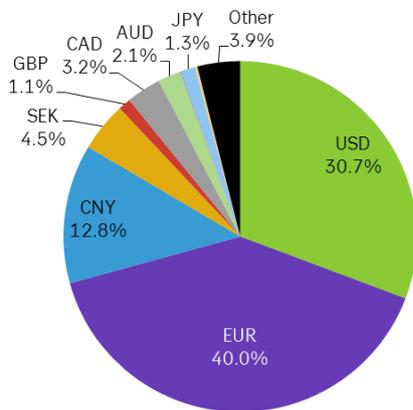
The French green bond market, returned to third place, split roughly in thirds between Agence France Tresor's sovereign OAT, non-financial corporates and financials, with a few agencies and municipalities active as well. Société du Grand, which is developing a rail project in Paris launched an inaugural EUR 1.75 billion green bond while announcing a gargantuan green bond program with a potential magnitude of EUR 31.5 billion over several years. We see the potential for EUR 20 billion in France in 2019.

Supranationals come in fourth place by rank but by issuance volumes were up by a third YoY, with nine multilateral and regional development banks active in a wide variety of currencies and maturities through taps as well as new lines, totaling USD 11.2 billion, well past the full year 2017 total. As described in a contribution in this edition by Heike Reichelt, November marked the 10 year anniversary of The World Bank's inaugural green bond, where SEB was the lead manager. To mark the occasion, the World Bank raised USD 1.5 billion equiv. through benchmark green bonds in AUD, EUR and USD, including the first dual-currency supranational green bond that was placed with over 60 orders investors committed to following socially and environmentally responsible principles, where SEB was once again honoured to act as joint lead manager.

Elevated activity in corporate and financials helped lift Germany to round out the top 5, with USD 7.5 billion of issuance, but with levels down -22% YoY in key example of a geography that is running significantly below its potential, but with some very encouraging signs. We see the largest potential geographic issuance increase in 2019 in Germany and Japan with the potential for USD 17 billion and USD 12 billion, respectively. Japan already featured doubled green bond issuance levels on the back of a hot corporate green bond market following official sector clarification on green bonds. The Netherlands came in with a strong finish of almost USD 7 billion and has the potential for double this amount in 2019.

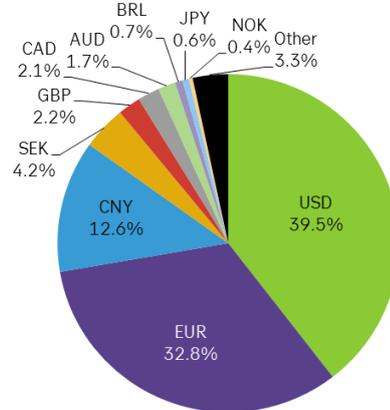
Other notable geographic hotspots include Sweden (+27%) which could have USD 8.5 billion of issuance in 2019 and Canada (+39% - with potential for USD 10 billion in 2019). Hong Kong, South Korea, Spain, the UK, Italy and Belgium all have potential for over USD 5 billion in 2019.

**Figure 16. 2018 YTD green bond issuance by currency**



Source: SEB analysis based on Bloomberg and SEB data

**Figure 17. Cumulative green bond issuance by currency 2007-2018**



Source: SEB analysis based on Bloomberg and SEB data.

In terms of currencies (Figures 16-17), the key takeaway through November remained that the market maintained its distinct shift towards Euros, reaching 46% at one point before falling back to 40%, while CNY issuance doubled its contribution in the last two months to approach 13%. The EUR trend is driven by strength in the corporate market, with financials as well as non-financial corporates, such as utilities, alongside sovereigns favouring EUR. The USD green bond market (31%) made its return to the stage with the retrospective integration of Fannie Mae's green MBS and U.S. corporates and municipalities, and an increasing number of dual jumbo-sized currency deals. CAD, AUD, and SEK also proved popular currencies to target for issuers raising green capital in 2018. The percentage of all SEK denominated bond issuance in green format surged to a world record of 16% in 1H 2018 before settling back to 12%; double the 6% seen over the course of 2017.

#### 4. Prospective publicly announced green, social & sustainability bond pipeline<sup>7</sup>

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- Banco Nacion Argentina
- Bank Australia
- Enercity EUR Green Schuldschein
- Gussing Renewable Energy International
- IREDA (Green Masala)
- Korea East-West Power
- MA Clean Water Trust
- Macquarie University
- Monash University
- Nigeria Green Sovereign
- OP Corporate Bank EUR Green Bond
- State of Netherlands EUR Sovereign Green Bond
- Walloon Region
- FS Italiane
- Hong Kong Green Sovereign
- UBI Banca
- Ontario Power
- GLP J-REIT
- Digital Realty Trust
- KEB HANA
- City of Bloomington
- Pepper Group
- Baseload Capital
- Snam
- Ence Energia
- Invesco Office J-REIT

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<sup>7</sup> As of 7 December 2018; includes issuers that have published frameworks online but have not announced mandates.



## 5. European Commission Technical Expert Group on Sustainable Finance (TEG) – State of Play, December 2018

The Commission set up a Technical expert group on sustainable finance (TEG) to assist it in developing, in line with the [Commission's legislative proposals of May 2018](#)

### Marie Baumgarts

Head of Group Sustainability, & SEB delegate elected to the EC-TEG

### Christopher R. Kaminker, PhD

Head of Research, SEB Climate & Sustainable Finance

- an EU classification system – the so-called **taxonomy** – to determine whether an economic activity is environmentally sustainable;
- an **EU Green Bond Standard**;
- **benchmarks** for low-carbon investment strategies; and
- **guidance** to improve corporate disclosure of climate-related information.

The TEG will operate until June 2019, with a possible extension until year-end 2019. The TEG commenced its work in July 2018. Its 35 members from civil society, academia, business and the finance sector, as well as additional members and observers from EU and international public bodies work both through formal plenaries and sub group meetings for each work stream. The members of the TEG and the Commission recognise the importance of transparency and stakeholder outreach throughout this process. You can find the [outreach plans for each subgroup here](#). They will be updated on a constant regular basis.

In terms of the first task, developing an EU taxonomy, the group is inviting feedback on the first proposed activities that contribute substantially to climate change mitigation and on the usability of this first list of activities. The group has also identified areas where additional technical expertise is needed. The Commission will therefore host several workshops with the purpose of gathering this expertise. Please [find all necessary information here](#).

All meeting documents of the Technical working group on sustainable finance are available in the [Register of Commission expert groups](#).

Four progress reports from each of the subgroups have been released at the beginning of December 2018:

- [Benchmarks subgroup - Progress report](#)
- [Disclosures subgroup - Progress report](#)
- [EU green bond standard \(GBS\) subgroup - Progress report](#)
- [Taxonomy subgroup - Progress report](#)

For more information regarding the work of the Technical expert group on sustainable finance (TEG) and the legislative proposals that frame their work see also the [frequently asked questions](#).


**THE WORLD BANK**

Treasury

**Heike Reichelt**

 Head of Investor Relations and New  
Products

The World Bank Treasury

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## 6. Green Bonds: From evolution to revolution in 10 years

The capital markets have evolved over the last 10 years from a market where investors knew - and cared - little about what their investments were supporting, to one where purpose matters more than ever. [There's a revolution in the bond markets that was sparked by green bonds](#)



The green bond market has grown from a market dominated by issuers like the World Bank, an international organization owned by 189 countries with the sole purpose of eradicating extreme poverty and boosting shared prosperity, to one that includes a broad range of issuers - from private companies and banks, to utilities and governments. The simple concept behind green bonds has expanded to other labeled bonds, including social bonds and blue bonds.

Last month, the Seychelles—an archipelago of 115 islands known for beautiful beaches and coral reefs—[issued the first blue bond of its kind to support sustainable marine and fisheries projects](#). The Seychelles raised US\$15 million from investors like Calvert Impact Capital, Nuveen and Prudential and will report back on how funds are being used to achieve a positive impact.

That bond is the most recent in a series of innovations in the fixed income market that raise funding from the capital markets dedicated to a defined social purpose, with issuers engaging with investors around purpose and offering more transparency on the financing. These types of products allow issuers and investors to benefit from standardized debt products that support investments at scale, while at the same time connecting investments to their social purpose.

Estimates for the volume of these purpose-related bonds vary, depending on how narrowly the market is defined. Looking only at the labeled bond market, the volume is over US\$500 billion for the last 10 years. Considering issuers - even just municipalities and development banks - that support social projects financed through the bond markets, the number quickly goes up to several trillions of US\$ per year.

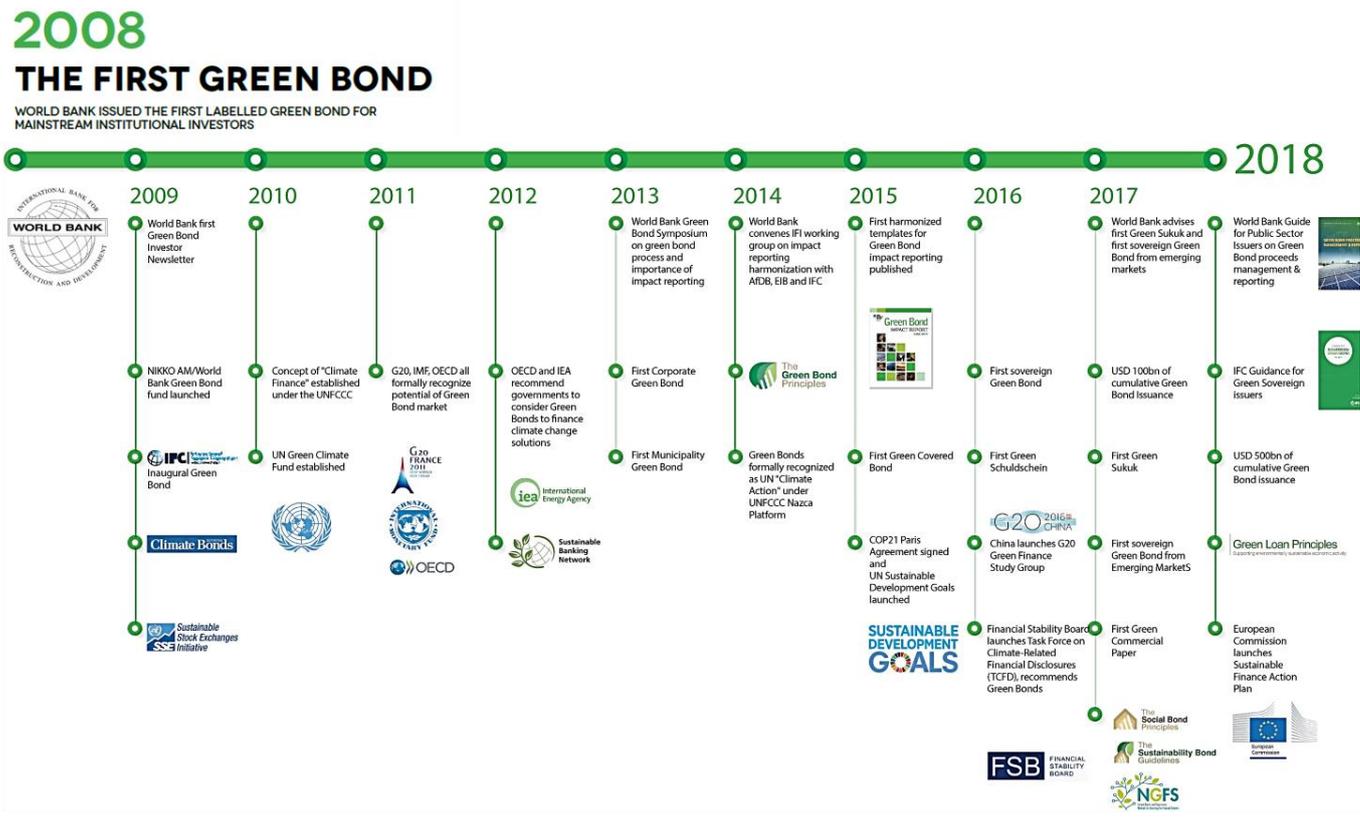
Investors' interest in the social and environmental purpose of their investments reflects a fundamental shift in the bond market. Investors want data that shows not only how they can reduce environmental, social and governance risks in their portfolios, but also how their investments are helping to contribute to society. They recognize the power they have to support initiatives their stakeholders care about, and the ability to do so without giving up return. Issuers are responding. Issuers are engaging with investors to show how their bonds present opportunities to achieve both financial and social returns.

Ten years ago, concerned that climate change posed a significant risk to their portfolios, a group of Swedish pension funds - through Skandinaviska Enskilda Banken (SEB) - looked for opportunities that support climate-friendly solutions. They wanted high quality, liquid products that would not carry additional project risk. And they wanted information about how their investments would achieve impact. They approached the World Bank and we worked together to design a new product. The green bond was born.

Issued in 2008 by the World Bank, this bond created the blueprint for today's green bond market. It defined the criteria for projects eligible for green bond support, included a recognized climate research institution, CICERO, as a second opinion provider, and added impact reporting as an integral part of the process, highlighting the importance of transparency.

The World Bank's first green bond received strong support from the market and interest from others, including climate policymakers, Ceres and the Climate Bond Initiative. They raised awareness for the challenges of climate change and demonstrated the potential for institutional investors to support climate-smart investments through liquid instruments without giving up financial returns. It formed the basis for the green bond principles coordinated by ICMA, the International Capital Markets Association. It highlighted the social value of fixed income investments and need for a sharper focus on transparency. And – starting with the first green bond issued in 2008 - investors have been publishing their names and providing quotes when they buy green or other labeled bonds.

Figure 6.1. The World Bank Green Bonds Timeline: From evolution to revolution in 10 years



Source: The World Bank Treasury

In November 2018, the World Bank raised US\$eq.1.5 billion through benchmark green bonds in AUD, EUR and US\$, including the first dual-currency supranational green bond that was placed with over 60 orders investors committed to following socially and environmentally responsible principles. The issuances mark the ten-year anniversary of the green bond market and were heavily oversubscribed. In the last decade, [the World Bank has raised about US\\$13 billion through more than 150 green bonds in 20 currencies for institutional and retail investors all over the globe](#). Other green bond issuers now include companies and banks of all sizes and several countries. All issuers are measuring, tracking and reporting on the social and environmental impact of their investments. Fannie Mae is the largest issuer of green bonds by volume in a single year. Fiji last year issued the first emerging market sovereign green bond. Every bank active in the international capital markets has staff dedicated to green or sustainable bond financing. Green lending criteria are being incorporated in loans. There's an industry of second opinion providers and verifiers - including rating firms and others providing information to investors and supporting issuers. And the green bond concept has been expanded to other labels – social, sustainable, blue, etc.

Green bonds have sparked a revolution in thinking about sustainability, purpose and potential for liquid bond investments to achieve a positive impact. If fixed income instruments can support financing for climate solutions, they can do so for other social purposes as well. The green bond process—with its model for project selection, second party opinion, and impact reporting—is already being applied to other areas. The Sustainable Development Goals (SDGs) are a collection of 17 global goals agreed by 193 countries in 2015 that range from education to health and sustainable cities. They are a helpful framework for investors and issuers to focus on areas beyond climate. The World Bank has started to engage investors around specific SDGs through a series of bonds to raise awareness for specific development challenges through its sustainable development bonds. Others are following.

The challenge now is to ensure that we harness the revolution and momentum towards achieving the SDGs. In the future, for every investment, investors will be asking "how is this making a positive impact to society?" and will expect solid impact data as a response. There's a long way to go. But recognizing the urgency for action and the power of investment, collaboration, technology and innovation will get us there.

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## 7. Progress towards a common language in green finance

Impact investing China and the EU consider climate action and the clean energy transition an imperative and have confirmed their commitments under the Paris Agreement. They share the global vision to make financial flows consistent with a pathway towards low greenhouse gas emission and climate-resilient development. They agree on the need for sustainable investment and green finance to drive the transition. They are increasingly coordinating their actions to implement the 2016 recommendations of the G20 on Green Finance.

The 2016 G20 Green Finance Synthesis Report<sup>8</sup> stated that:

- *the lack of clarity as to what constitutes green finance activities and products (such as green loans and green bonds) can be an obstacle for investors, companies and banks seeking to identify opportunities for green investing; and*
- *more clarity about green finance definitions is demanded from the market and policy makers, although it does not require a 'one size fits all' approach. Some internationally comparable indicators are also useful in facilitating cross-border and cross-market green investment.*

In March 2017, at a conference co-arranged by People's Bank of China (PBOC) and the National Association of Financial Market Institutional Investors (NAFMII), the Green Finance Committee of China Society for Finance and Banking (CGFC) and the European Investment Bank (EIB) addressed this challenge and announced that they would cooperate to provide a logical framework for initiatives that could create momentum for harmonizing green finance standards.

During COP 23, EIB and CGFC published a first joint White Paper on the need for a common language in green finance, laying the practical and conceptual foundations of their initiative. During COP 24, they announced the second edition of the White Paper, which entails a progress report, in both policy and capital markets space, and puts in perspective concrete new steps for 2019.

With regard to policy:

- In China, harmonization of existing green bond standards is already underway: PBOC, China Banking and Insurance Regulatory Commission (CBIRC) and China Securities Regulatory Commission (CSRC) are working together on a Green Finance Standardization Program under the umbrella of the 'Development Plan for Building the Standardization System for the Finance Sector (2016-2020)', launched in June 2017. PBOC, NAFMII and other stakeholders have come forth with clear and detailed regulations on issuance, duration management, and third-party certification of green bonds. Meanwhile, they have set up the Green Bond Standard Committee. Most importantly, together with PBOC and other Central Ministries, the National Development and Reform Commission (NDRC) is about to publish a 'Green Industry Catalogue' that will provide a single reference platform for the classification of the activities eligible for allocations from the Chinese green bonds, leading to a closer integration of green finance and green economy.
- In Europe, the EC has adopted an action plan on financing sustainable growth, which recognizes that the establishment of a unified EU classification system is the most important and urgent action. A technical expert group has been formed by the EC to establish how to assess whether an economic activity is environmentally sustainable in order to determine the environmental sustainability of an investment. The EU sustainability taxonomy will be made binding on member states via regulation<sup>E</sup> and thus immediately apply in national space. A first EU taxonomy for climate change mitigation and adaptation is due by June 2019.

With regard to capital markets:

- CGFC, under coordination of PBOC's Research Bureau, has continued to shape the debate on green finance in China with the arrangement of a number of research outputs and stakeholders' events related to green bonds. At the same time, it has worked to establish an active interface between national and international thought-leadership, both via the organization of high-level events and *ad hoc* research reports. China's green bond market has expanded rapidly, and both by number of issuances and total scale, China remains one of the world's largest bond markets. Furthermore, we are seeing an increasing number of Chinese organizations issuing green bonds outside China, and

<sup>8</sup> [http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis\\_Report\\_Full\\_EN.pdf](http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf)

simultaneously an increasing interest from non-Chinese organizations in issuing green panda bonds.

- EIB, under leadership of its capital market experts, has ensured synergy across its cooperation with CGFC, its sustainability advice to the European Commission (EC) within the High-Level Expert Group on Sustainable Finance (HLEG) and Technical Expert Group (TEG), its coordination of the MDB-expert group on climate mitigation finance tracking, its coordination of the Green Bond Principles Working Group on Green Projects Eligibility, and its green bond issuance. In September 2018, the Bank put in place a new Sustainability Funding Team, which issued the first Sustainability Awareness Bond (SAB), extending green bond transparency to a broader spectrum of sustainability objectives and activities, and linking SAB-eligibility with the TEG-criteria to be established.

Unless followed by actions, the Paris Agreement will not deliver on its target. The pragmatic objective of the CGFC-EIB ongoing work on taxonomy is the establishment of a reference platform that facilitates Chinese green bond issuance in the EU and European green bond issuance in China.

Once both the NDRC's 'Green Industry Catalogue' and the EU TEG's 'Taxonomy' have been published, it will be possible to establish a solid platform for transparent comparison between the two, taking forward the work already performed on the PBOC- and MDB-IDFC standards last year. On this basis, the comparison should produce clearer, more comprehensive, and more readily usable results.

The core recommendation of this second edition of the White Paper, therefore, is that the third edition of the CGFC-EIB joint research project develops a clear framework for the mutual translation of China and EU climate mitigation standards by COP25.

Mindful of this objective, EIB has decided to redraft the Use of Proceeds section in the Climate Awareness Bond (CAB) documentation to include, in addition to renewable energy and energy efficiency (so far the focus of CABs), also other activities contributing substantially to climate change mitigation. In the future, allocations will be to *'EIB's lending to activities contributing to this purpose through means in line with evolving EU sustainable finance legislation and the related technical expert group conclusions'*.

As for the SAB, the new CABs will thus:

- link the use of proceeds with an objective, rather than activities;
- take an open-ended approach to the eligibility of activities;
- link such eligibility with the developments of EU legislation on sustainable finance.

In addition to mirroring the logic adopted by the European Commission, this approach has material practical advantages, notably:

1. The possibility to extend allocations to new objectives and activities over time, as the required EIB procedures and IT-infrastructure are established and tested on the ground<sup>9</sup>;
2. Ongoing fungibility of new and old tranches of CABs despite allocation extensions over time.

The new documentation will be inaugurated in early 2019. CAB-issuance in China would then offer Chinese and EU Regulators the opportunity to establish an effective and cooperative framework for cross-border green bond issuance, putting CGFC-EIB work on a tangible footing and extending its reference value for the benefit of both Chinese and European capital market participants.

<sup>9</sup> EIB, for example, has decided to focus its inaugural SAB on four objectives (conservation of natural resources, pollution prevention and control, access to water and sanitation, natural disaster risks management) and three activities (water supply, wastewater collection and treatment, flood protection).

**Dr. Ma Jun**

Chairman, Green Finance Committee, China Society for Finance and Banking; Special Advisor to PBoC Governor; Director of Center for Finance & Development, Tsinghua University; Co-chair, G20 Sustainable Finance Study Group

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## 8. Green Investment Principles for the Belt and Road

The world is facing serious environmental and climate challenges. Most of the world's infrastructure investments in the coming decades will be in Belt & Road countries, and these projects will have a significant impact on environment and climate. The Green Finance Committee (GFC) of China Society for Finance and Banking, in partnership with the City of London's Green Finance Initiative (GFI), published a set of principles on green investments for the Belt and Road (B&R) on November 30, 2018 in London. The Green Investment Principles for the Belt & Road aim to ensure that environmental consciousness, climate resilience, and social inclusiveness are built into new investment projects in the B&R, so that the goals of the United Nations 2030 Agenda for Sustainable Development and the Paris Agreement are met.

Building on existing responsible investment initiatives and set to be published in seven languages, the Green Investment Principles for the Belt and Road aim to incorporate low-carbon and sustainable development into the Belt and Road Initiative by encouraging financial institutions and corporates involved and invested in B&R projects to sign up to a voluntary code of practice. The announcement was made in London at the 3rd meeting of the UK-China Green Finance Taskforce, chaired by Dr. Ma Jun, Chairman of the GFC and who sits on the People's Bank of China Monetary Policy Committee and Sir Roger Gifford, Senior Banker at SEB and Chairman of the GFI.

The Principles, a project first proposed in the 9th China-UK Economic and Financial Dialogue (EFD), were drafted by a group of organisations led by the GFC and the GFI, including the Belt & Road Bankers Roundtable, Green Belt and Road Investor Alliance, International Finance Corporation, PRI, Paulson Institute and World Economic Forum.

The Principles consolidate seven principles at three different levels: strategy, operations, and innovation. It calls for top-down implementation of the incorporated strategy, communication among stakeholders, and utilization of green financial instruments and green supply chain practices, as well as knowledge sharing and capacity building.

A perspective Secretariat for the Principles will be established, to expand membership, review and report progress, and develop guidance and operational tools. Trainings will also be provided to facilitate the adoption and implementation of the principles.

### GREEN INVESTMENT PRINCIPLES FOR THE BELT AND ROAD

#### Principle 1: Embedding sustainability into corporate governance

We will embed sustainability into our corporate strategy and organisational culture. Our boards and senior management will exercise oversight of sustainability-related risks and opportunities, set up robust systems, designate competent personnel, and maintain acute awareness of potential impacts of our investments and operations on climate, environment and society in the B&R region.

#### Principle 2: Understanding Environmental, Social and Governance Risks

We will strive to better understand the environmental laws, regulations, and standards of the business sectors in which we operate as well as the cultural and social norms of our host countries. We will incorporate environmental, social and governance (ESG) risk factors into our decision-making processes, conduct in-depth environmental and social due diligence, and develop risk mitigation and management plans, with the help of independent third-party service providers, when appropriate.

#### Principle 3: Disclosing environmental information

We will conduct analysis of the environmental impact of our investments and operations, which should cover energy consumption, greenhouse gas (GHG) emissions, pollutants discharge, water use and deforestation, and explore ways to conduct environmental stress test of investment decisions. We will continually improve our environmental/ climate information disclosure and do our best to practice the recommendations of the Task Force on climate-related Financial Disclosure.

**Principle 4: Enhancing communication with stakeholders**

We will institute stakeholder information sharing mechanism to improve communication with stakeholders, such as government departments, environmental protection organizations, the media, affected communities and civil society organizations, and set up conflict resolution mechanism to resolve disputes with communities, suppliers and clients in a timely and appropriate manner.

**Principle 5: Utilizing green financial instruments**

We will more actively utilize green financial instruments, such as green bonds, green asset backed securities (ABS), Yield Co, emission rights based financing, and green investment funds, in financing green projects. We will also actively explore the utilisation of green insurance, such as environmental liability insurance and catastrophe insurance, to mitigate environmental risks in our operations.

**Principle 6: Adopting green supply chain management**

We will integrate ESG factors into supply chain management and utilize international best practices such as life cycle accounting on GHG emissions and water use, supplier whitelists, performance indices, information disclosure and data sharing, in our investment, procurement and operations.

**Principle 7: Building capacity through collective action**

We will allocate funds and designate personnel to proactively work with multilateral organizations, research institutions, and think tanks to develop our organizational capacity in policy implementation, system design, instruments development and other areas covered in these principles.

**Michael Sheren**  
Co-Chair, G20 Sustainable Finance  
Study Group

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## 9. Meeting the challenge of financing sustainable infrastructure

When Ma Jun and I, as Co-Chairmen of the G20 Sustainable Finance Study Group (SFSG) first introduced the concept of sustainable finance to the G20 in January of 2016 in Sanya China, we did so with great hope, ambition and expectation. The goal was nothing short of mobilising the vast pools of private sector capital to finance the transition to a sustainable global economy.

Our journey began by introducing the G20 delegates to the key building blocks and stakeholders of the financial system through a green lens. These topics included green bonds, institutional investors, risk analysis and green banking. The following year, under the German presidency, we dove deep into the technical analysis of environmental risk and the data needed to accurately quantify these risks.

Finally, this year, under the Argentinian Presidency, we are realising our goal of presenting means to mobilise capital at pace and scale to transition the global economic system to a sustainable future. During the Argentinian Presidency, the SFSG examined, with private and public sector participants, how to employ securitisation, private equity and technology to drive investments into sustainable assets and companies. The outcome has been an outstanding collection of Input Papers that have turned to the task of operationalising sustainable finance. This year's work was welcomed by the entire G20 in the [Leadership Summit's Communique](#) which is a great indicator of the shared importance the Group of Twenty place on sustainable finance.

In particular, a White Paper entitled [Towards a Sustainable Infrastructure Securitisation Market](#) was commissioned by us and personifies our goal of identifying financial pathways and products to mobilise private capital that meets the investment preferences of institutional investors. The demand for sustainable finance, especially in the area of infrastructure, is a \$90 trillion challenge over the next fifteen years. The only way to meet this \$90 trillion challenge will be to employ innovative financial structures that can match sustainable assets with institutional investors.

The White Paper envisions a self-reinforcing green circle of capital to meet financing needs of infrastructure globally. Currently, almost 80% of all infrastructure sits on the balance sheet of banks in the form of loans. Banks alone do not have the capacity to take on all of the funding required. Hence, to move large volumes of complicated and technical private infrastructure loans into a public, tradeable and rated bond structure the CLO availed itself as a robust, transparent and safe format.

As mature green infrastructure loans are sold into a CLO, the proceeds returning to the bank can be recycled back into new green infrastructure investments. The green circle, an engine, is created to drive infrastructure development. Further, institutional investors are able to purchase the long-dated green bonds issued by the CLO and get access contractual cash flows associated with infrastructure assets at tenors that are well matched to their liability structure. In short, the structuring of the CLO allows infrastructure assets to be introduced to the markets as a liquid asset class within the international debt capital markets.

The journey over the last three years has been exhilarating. All of the hard work and innovative financial structures and insight have been driven by an exceptional group of Knowledge Partners. For this White Paper, SEB, S&P, White & Case and the other contributors brought unparalleled market knowledge around green bonds, structured products, risk analysis and the preferences of market investors. This paper is a sterling example of how innovation and cooperation can drive solutions to some of the biggest challenges of our time.



## SEB Climate & Sustainable Finance

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This report was published on 10 December 2018. Cut-off date for calculations was 7 December 2018, unless otherwise stated.

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