

# The Green Bond

The logo for SEB, consisting of the letters 'S', 'E', and 'B' in a bold, sans-serif font, with vertical bars separating the letters. The logo is positioned in the top right corner of the header image, which features a background of green bamboo stalks and leaves.

04 February 2020

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Green bond market issuance totalled USD 263bn in 2019 - a record year and 43% higher than in 2018. The market outperformed both our Organic Evolution scenario for 2019 (USD 210bn) and our Green Growth Scenario (USD 240bn). As a result, since its inception in 2008, the green bond market has now accumulated USD 840bn, and we expect it to pass a trillion dollars in size in 2020.

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# Letter to the reader

## Busy!

With TCFD providing a tool for PRI to enforce disclosure from investors, as well as NGFS and TEG setting the frames followed by EBA which has announced upcoming disclosure for banks, all banks with established sustainability advisory are understaffed! It will lead to a booming year of green bonds and sustainability linked products and enforce a position for most (if not all) players seeking capital through public transactions, at least in Europe.

So, the way participants set goals, strategies, governance and disclosure to satisfy these “new” requirements is likely to determine accessibility and price. January, traditionally being slow on green bond issuance is on track to reach the same level as last year but supported by a much stronger underlying pipeline. We expect last year’s growth in the corporate sector to take the lead this year and we especially expect to see strong activity from Europe, the US and Japan with both USD and Euro taking a lead on absolute volume.

In local currencies we still see SEK as a strong market with total market share of green bonds beating last year’s 19%, followed by NOK and AUD where we think we should end in the higher single digit. The loan market, especially the RCFs, are booming and will secure an underlying platform for issuance over the next three to four years. On the investor side we begin to see more structured request on feedback from issuers and expect some standardizing of reporting to be requested.

Enjoy your Reading

Christopher Flensborg

Head of Climate and Sustainable Finance



# Transition update

## 2019 was an interim year

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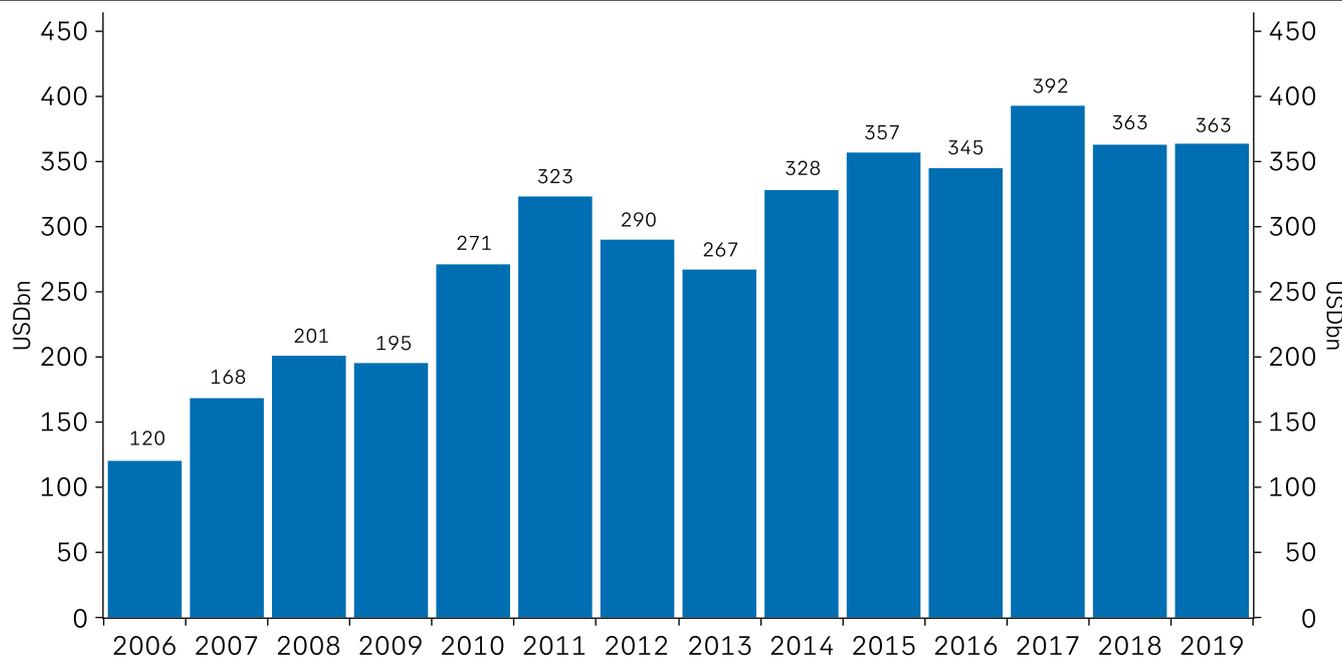
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From a transition perspective, 2019 was an interim year where the installation of new renewable capacity and sales of electric vehicles stalled, but the groundwork for future investment growth was laid by the EU Commission and sustainable investments entered the mainstream faster than expected.

According to BNEF, total investment in renewable energy, including investment in research and development and share issues of specialist companies, was flat at USD 363bn in 2019. Looking only at investment in new renewable capacity, wind installations were up 6% to USD 138.2bn, while solar was down 3% to 131.1bn dollars from 2018, leaving the total flat. The good news is that lower costs for both energy types still allowed the annual increase in capacity to rise from 160 to 180 GW, but unchanged spending is underwhelming when we are behind the curve in the transition process.

**Figure 1: New investment in clean energy, globally**



Source: BNEF (Bloomberg New Energy Finance), SEB

From a regional perspective, China was the weak spot with an 8% decline in total renewable investments to USD 83.4bn, which was the lowest level since 2013. The weakness in China was concentrated in solar investment; according to Global Data Energy, China's solar PV capacity additions fell by 32%. This reflects the adjustment to a new policy regime without subsidies to prevent capacity from running ahead of grid capabilities, which affected numbers for 2018 and the first part of 2019.

The good news in 2019 came from the US, where investment rose 28% to a new record. Like China, Europe also saw investment decline in 2019 and fell behind the US into third spot in the global ranking of renewable investment, although there were some bright spots like Spain where investment increased 25% and installation of new solar capacity doubled compared with 2018.

When we add it all up, 2019 looks like a lost year in the transition process. However, 2020 looks likely to see a return to rising investment and faster capacity expansion. In China, the adjustment to a new system appears to have run its course, installations in solar in the first three quarters of 2019 amounted to 16 GW but in the last quarter alone, 14 GW was installed. This is a strong indication that full year numbers for 2020 should be a lot better than what we saw in 2019.

Meanwhile, European investment is likely to get a boost from important initiatives launched by the European Commission over the past year. The suite of initiatives, including the taxonomy as well as the new European Green Deal to raise capital for investment in renewable energy and other transition projects, provides a comprehensive framework to facilitate all the different kinds of investment that is required to complete the transition.

**Figure 2: Three roles for capital markets when financing the transition**

<b>Investment:</b>	<b>Energy infrastructure</b>	<b>Energy efficiency</b>	<b>Electrification</b>
Technology:	Known technology	Known technology	Unknown technology
Investor:	Government/SAA	Corporate/agency	Corporate
Risk level:	Low-risk long-term	Low-risk medium-term	High-risk long-term
Financial instrument:	Traditional green bonds	'Light green' loans, bonds	Equities, transition bonds
Capital supplier:	Pension & Life Insurance	Banks, asset managers	Asset managers, hedge funds

Source: SEB Strategy Research

Based on our analysis, completing the transition will require three distinct types of investment, these are displayed in Figure 2.

First, significant amounts of capital are needed for direct investment in a new energy system – renewable energy production as well as grids and other supporting infrastructure. Second, we must improve energy efficiency today by making use of all the technology that is available now. Finally, we must develop technologies that allow the sectors that currently are forced to use fossil fuels to use electricity instead.

The EU's climate action plan appears to recognize that these different tasks require very difficult policy measures.

The new EU Green Deal that was presented in January addresses the need to scale up the primary task of building a new infrastructure. The idea is that the EU will provide capital for direct investment and mobilize private sector capital using a combination of shared investment and guarantees to make it attractive for long-term investors to participate. Since we know the technology that will be used, it is mostly about reaping scale effects, and the Green Deal appears to be well suited for this job.

The EU taxonomy 'suite' addresses the two latter investment needs, which are both centered on the high-emission sectors and more likely to be driven by private markets to finance the innovation drive.

The taxonomy itself provides numerical guidance on how low emissions must be today for an activity to be part of the transition process. Other initiatives like the new climate benchmark rules crystalize the more important dynamic challenge of continuously reducing emissions from a starting point that embeds today's best practice.

The taxonomy was passed into law in December in a political agreement. The deal contained modest tweaks in the framework. It will now have to be made clear whether activities are 'enabling' or 'transition' activities, but this is just a clarification. There is also an agreement to expand the framework to include the transport sector.

However, the most important change was the introduction of 'the platform', which will take over from the TEG and create tangible screening rules that will make the framework more practically useful. Before we get to that, the TEG will publish an updated taxonomy in February, adjusting the proposal following the feedback process in H2 last year.

Both parts of the framework should start having a positive effect on transition investment in 2020, and in our view, they could form the blueprint for a global regulatory framework that works.



# Green bond market update

## 2019 – a record year

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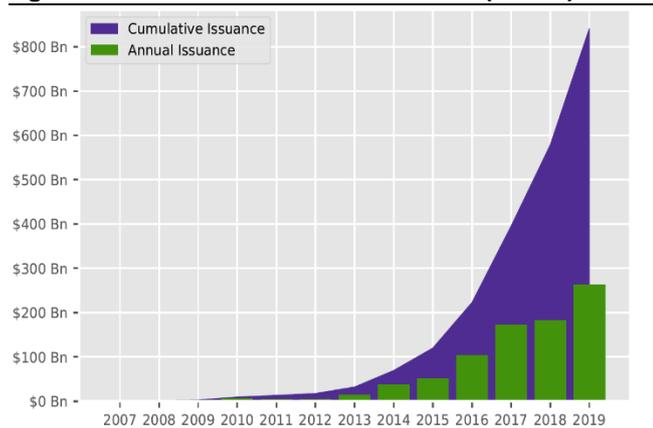
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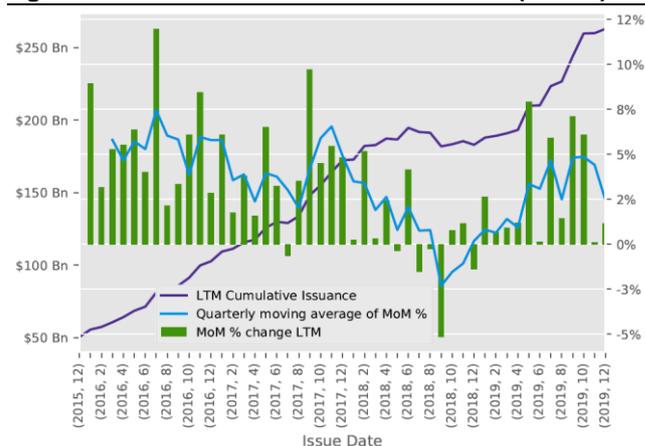
Green bond market issuance totaled USD 263bn in 2019 - a record year and 43% higher than in 2018. The market outperformed both our Organic Evolution scenario for 2019 (USD 210bn) and our Green Growth Scenario (USD 240bn). As a result, since its inception in 2008, the green bond market has now accumulated USD 840bn.

**Figure 3: Green bond accumulative issuance (USDbn)**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

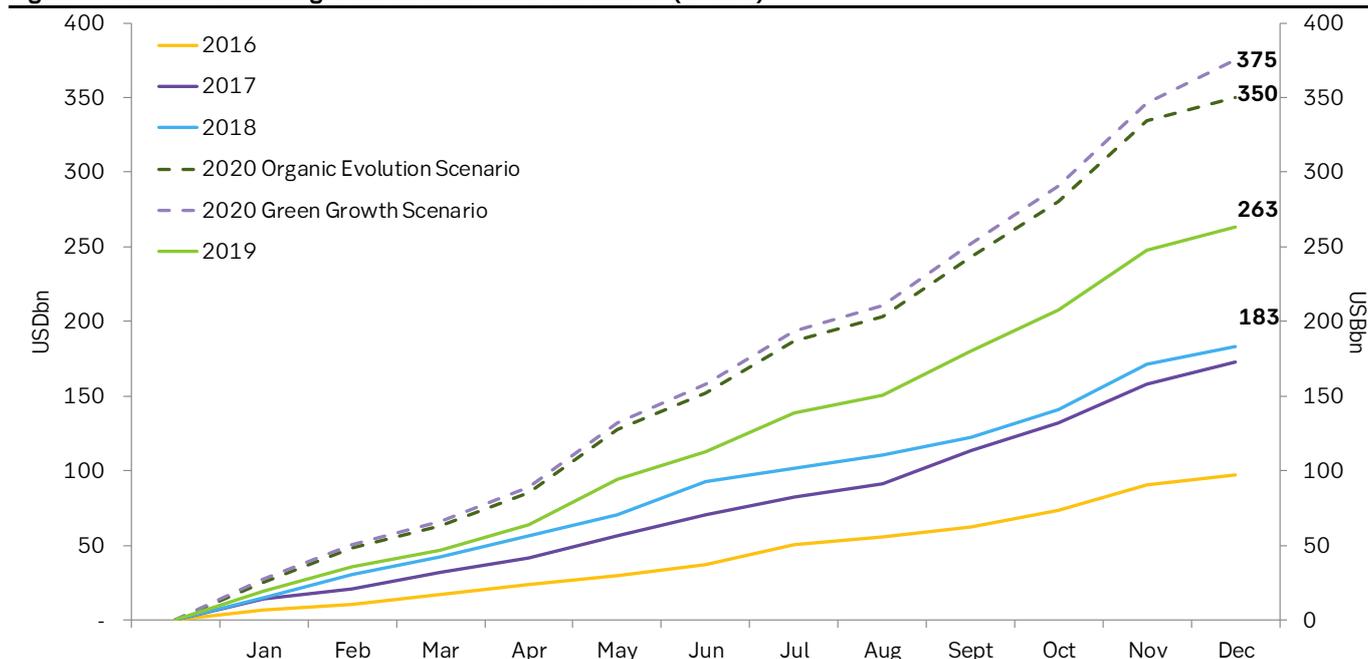
**Figure 4: Green bond issuance – last 12 months (USDbn)**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

The green bond market continues to expand to new regions and sectors. In 2019, several government agencies emerged with new issuances, mostly from Europe and Asia. The United States saw an increase from ABS/MBS due to increased issuances from Fannie Mae, combined with several large corporates entering the green bond market.

**Figure 5: cumulative annual green bonds issuance & scenarios (USDbn)**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

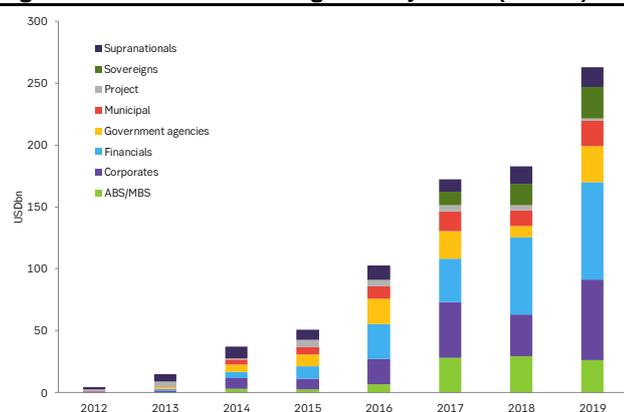
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In 2020, we expect the green bond market to continue gaining new ground across the world, whilst still expanding in the established markets. With this in mind, we have prepared new forecasts for 2020; a Green Evolution scenario of USD 350bn and a Green Growth Scenario of USD 375bn, see Figure 5.

In our December update we noted that the growth in the sustainable finance debt market has not been limited to green bonds. Sustainability-linked loans has emerged as an important product in 2019, especially in the last quarter, and the annual sum of these loans totalled USD 121.5bn. It should be noted that this total primarily consists of revolving credit facilities, and therefore the total amount is not drawn down fully by the borrowers. Nonetheless, it is an impressive growth rate considering that the product first emerged in 2017.

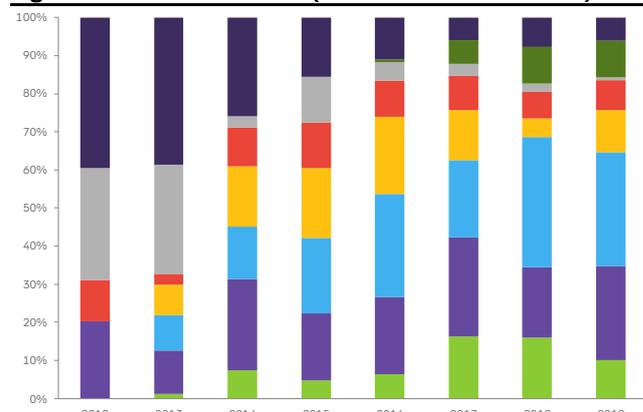
The largest sectors of the green bond market in 2019 were, as in 2018, the financial sector (USD 77.9bn of green bond issuances in 2019) and the corporate sector (USD 64.0bn of green bond issuances in 2019). Combined, these accounted for 54% of the total market. The financial sector grew 26% from last year, whilst corporates grew 90% and significantly increased their share of the total market. Government agencies (USD 29.6bn of green bond issuances in 2019), ABS/MBS (USD 26.4bn of green bond issuances in 2019), sovereigns (USD 25.3bn of green bond issuances in 2019), municipals (USD 20.8bn of green bond issuances in 2019) and supranationals (USD 16.1bn) all also grew from the previous year, which indicates that the green bond market is gaining traction across most sectors of the economy.

**Figure 6: Green bond market growth by sector (USDbn)**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

**Figure 7: Sectoral evolution (% share of ann. issuance)**



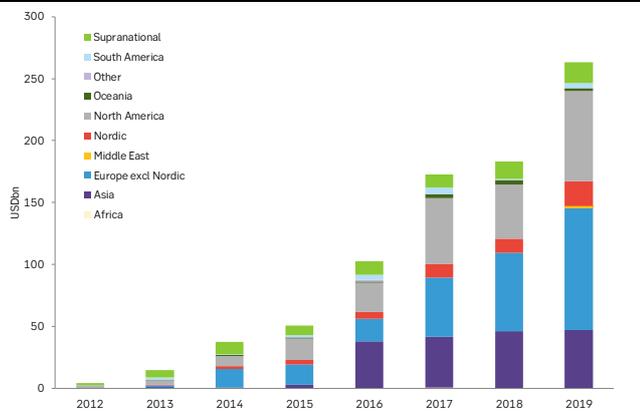
Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

Europe (excl. Nordic) was the largest region of 2019 in terms of green bond issuance and surpassed USD 100bn at the end of the year. France had the highest volume of issuance; with USD 28.1bn issued across the financial, corporate, government agency, sovereign and municipal sectors. The Netherlands and Germany had total issuances of USD 17.6bn and USD 17.3bn, respectively, whilst Spain (USD 8.0bn) and Italy (USD 7.1bn) had total issuances of around half that level. These countries, which accounted for 78% of the European green bond market, have had issuances across most sectors with the highest volumes from financials, corporates, government agencies and, in the case of France and the Netherlands, the sovereign government.

The North American green bond market totalled USD 72.9bn, of which the United States contributed USD 65.8bn. The largest issuer in the US green bond market was Fannie Mae, via their green mortgage-backed securities program (total issuances of USD 26.0bn). However, several major corporates, including Apple, PepsiCo and several utility and energy companies, also entered the green bond market – resulting in the US corporate sector issuing USD 13.0bn

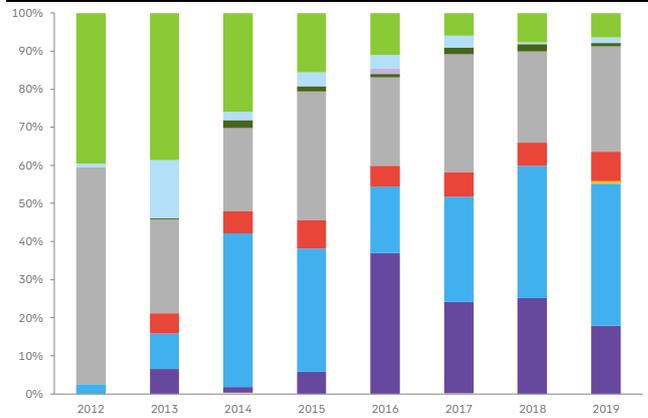
of green bonds. The US municipal market also continues to be strong in 2019, with total green bond issuances totalling USD 16.3bn. Canada was also active in the green bond market, with USD 6.5bn of issuances, of which the largest volumes came from the financial sector and municipalities.

**Figure 8: Green bond issuance by region (USD bn)**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

**Figure 9: Regional evolution (% share of ann. issuance)**

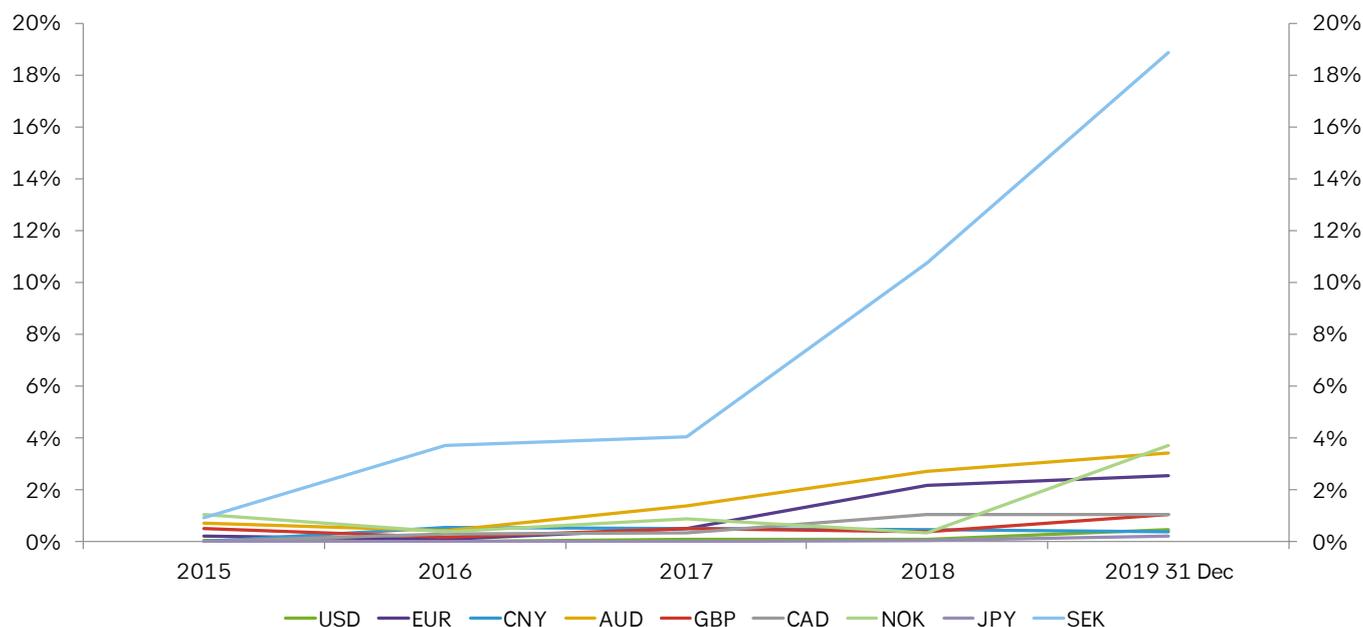


Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

The Asian green bond market was USD 47.1bn in 2019. Issuances from China (28.4bn), Japan (7.0bn) and South Korea (4.4bn) accounted for 85% of the market. However, India, Hong Kong, Malaysia, Mauritius, the Philippines, Singapore, Thailand and Taiwan also had green bond issuances, primarily from the corporate sector, which indicates that the market is expanding to new regions. The Chinese and Japanese markets were dominated by the financial sector, which accounted for 72% and 59% of their markets, respectively.

The Nordic green bond market totalled USD 17.8bn in 2019, with Sweden accounting for 52% of this total, ahead of Norway (22%), Denmark (14%) and Finland (12%). The Nordic financial sector had green bond issuances of USD 9.3bn, of which a significant amount was issued by real estate companies, particularly in Sweden.

**Figure 10: Green bond issuance as a percentage of total bond issuance in major currencies**



Source: SEB analysis based on Bloomberg and SEB data, as of 31 December 2019

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Green bonds as a percentage of total bonds issued in SEK ended the year at 19%, up from 10% in 2018. This includes both green bonds issued by Swedish issuers, as well as non-Swedish issuers that are issuing in SEK to tap Swedish investors with a high interest in green and other sustainable finance products. As a result, SEK accounts for 6% of the total green bond market while it only accounts for 0.3% of the total bond market. The currency with the second largest share of green bonds was NOK, which increased from 0.4% in 2018 to 3.7% in 2019. The EUR has also seen a modest increase of the green/total bond ratio and it is now at 2.6%, meanwhile the green/total bond ratio in USD has increased significantly from 0.1% in 2018 to 0.5% in 2019.

### Sector analysis

The financial sector raised USD 78.6bn from green bonds in 2019, which was 26% more than in 2018. Asia was the largest region with USD 27.1bn of issuances, where China accounted for USD 20.5bn, while North America, Europe (excl. Nordic), and the Nordic region were responsible for 34%, 14% and 12%, respectively. The single largest financial issuance of 2019 came from China in July, when Industrial Bank Co Ltd issued a green bond of CNY 20bn (USD 2.9bn) which included a wide list of eligible projects. Bank of America had the second largest green bond issuance in the financial sector (USD 2.0bn) while 11 other financial green bond issuances, four of which came from banks based in China and three from those based France, were at or above USD 1bn.

The corporate green bond sector has had a very strong year, with year-on-year increase of 90% and a total volume of USD 64.9bn. The green bond market in Europe (excl. Nordic) totalled USD 32.1bn, representing 50% of the global market, while North American and Asian corporates issued green bonds totalling USD 14.3bn and 11.6bn, respectively. The five largest corporate green bond issuances came from European corporations. SNCF Reseau was responsible for the single largest corporate green bond of the year with an issue of EUR 1.5bn (USD 1.7bn). The other corporates issuing green bonds at or above USD 1.0bn came from a variety of subsectors, including consumer goods (PepsiCo), telecom (Telefonica and Verizon), technology (Apple), infrastructure (SNCF Reseau and Lisea Vinci) and energy (Enel, EDP and Engie). The growth rate of 2019, combined with the high diversity of issuers in terms of subsectors and geographic locations, indicates that the corporate green bond market should continue to thrive in 2020.

As reported in multiple publications of The Green Bond throughout 2019, government agencies have emerged as an important sector for green bonds. Total issuance for the year ended at USD 29.1bn, which was more than twice that of 2018. KfW, a leading green bond issuer, was responsible for the largest issuance from a government agency in 2019 with a EUR 3bn (USD 3.4bn) green bond, following the update of their green bond framework in May, which now includes energy efficiency in addition to renewable energy. KfW also did another USD 2bn green bond in September 2019, the third largest from the government agency sector in 2019. Other notable government agencies that have issued green bonds in 2019 include Societe du Grand Paris with a EUR 2bn (USD 2.3bn) green bond issue in March and a EUR 1.0bn green bond issue in May (USD 1.1bn), as well as China Development with a CNY 10 billion (USD 1.4bn) green bond in November. In addition to these, government agencies from the Netherlands, Sweden, South Korea, Japan, Finland, Spain, Denmark, Switzerland and Canada have issued green bonds in 2019.

Sovereign green bonds also had a strong year totalling USD 25.3bn, which was 44% higher than last year. The Netherlands, Chile, South Korea, Nigeria and Hong Kong entered the market with their first sovereign green bonds. In

addition, the French, Polish, Irish, Belgian and Indonesian governments tapped their existing green bond programmes. We expect that the sovereign green bond sector will continue to evolve with new countries entering the market in 2020.

Supranational green bonds totalled USD 16.1bn in 2019, which was 14% higher than in 2018. Supranationals had the lowest growth rate of the major sectors; this reflects both the maturity of the participants in the market and the fact that many supranationals have increased their issuance of sustainability bonds, which can include both green and social eligible projects, and social bonds. Bond issuance from supranationals, within these two categories, has increased from USD 4.7bn in 2018 to 14.3bn in 2019. Although this is in itself a positive development, it does put some downward pressure on pure green bonds coming from supranationals.

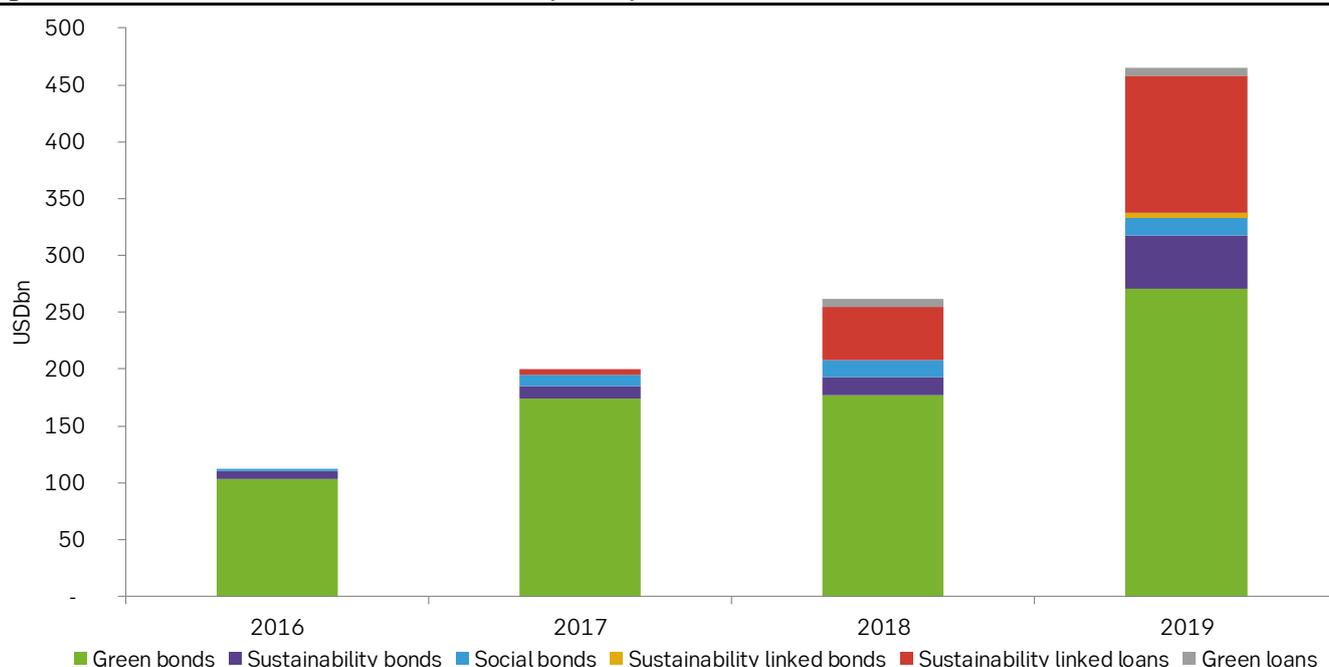
Municipals issued green bonds totalling USD 20.8bn in 2019, which was 60% higher than in 2018. Municipalities from the United States issued 78% of the total amount, while municipalities from Canada (USD 2.2bn of total issuance from the sector), Sweden (USD 1.0bn of total issuance from the sector) and Switzerland (USD 0.9bn of total issuance from the sector) also participated in the green bond market.

As in previous years, Fannie Mae dominated the ABS/MBS sector with USD 22.8bn of mortgage-backed securities issued in 2019. The rest of the ABS/MBS market totalled USD issued USD 3.6bn.

### Sustainable finance debt products beyond green bonds

Sustainable finance debt products other than green bonds totalled USD 194.0bn in 2019. The majority of this came from sustainability-linked loans, which totalled USD 121.5bn for the year, and where USD 15.3bn and USD 34.3bn came in November and December, respectively.

**Figure 11: Sustainable debt finance annual issuance (USDbn)**



Source: BNEF (Bloomberg New Energy Finance), as of 31 December 2019

The market will continue to grow at a high rate if the monthly run-rate continues in the USD 15-35bn range throughout 2020, which is likely given the

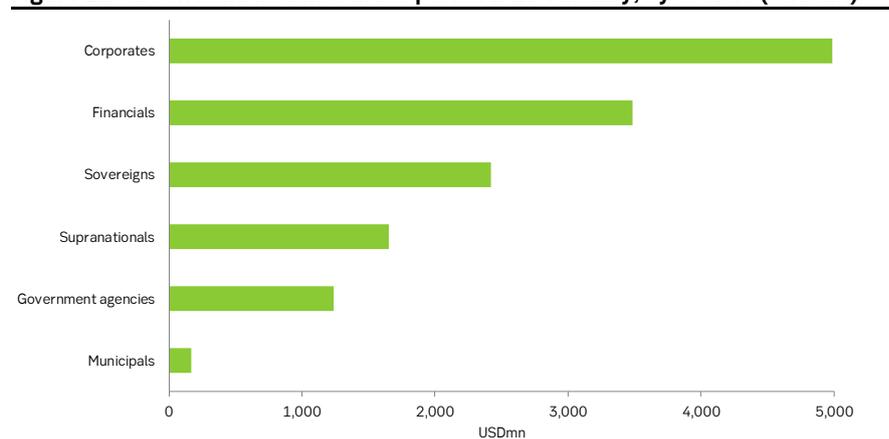
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high demand currently for this financial product. As noted above, the sustainability and social bond markets have also grown as issuers look to broaden the eligible project list of their framework. Considering the increased awareness of the sustainable development goals and social issues in general, this is a trend that we expect to continue in 2020.

### Year to date 27 January 2020 update

The green bond market has hit the ground running in 2020, with total green bond issuances of USD 14bn by 27 January (this does not include Fannie MBS and other issuances that are recorded after the end of the month). So far this year the largest sector has been corporates, with total issuance of USD 5.0bn, of which E.ON had the largest issue - a EUR 1bn green bond (USD 1.1bn). Within the financial sector, a total of USD 3.5bn of green bonds has been issued from 16 issuers, the most notable being real estate company Digital Dutch Finco who entered the market with a EUR 750m green bond (USD 834bn) - the largest from a financial issuer so far in 2020. So far, the single largest issuer has been the government of Chile which raised USD 2.4bn in January, this is the part of a total USD 3.3bn that they plan to raise through green bonds in 2020.

**Figure 12: Green bond issuance in the period 1-27 January, by sectors (USDmn)**



Source: SEB analysis based on Bloomberg (BNEF) and SEB data, as of 31 December 2019

### Publicly announced green, social & sustainability bond pipeline<sup>1</sup>

- Bankinter EUR 750m green bond priced
- Santander Consumer Bank mandate ING, Santander and SEB for SEK green bond road show
- Adif Alta Velocidad EUR 600m green bond priced
- Potential first Japanese utility green bond mandated by Tohoku Electric
- Prologis EUR 1.35bn green bond priced
- Deutsche Bank plans green bond
- Kenya considering green bond issue in 2020/21

<sup>1</sup> As of 30<sup>th</sup> January 2019





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