Green Bond Highlights 2017

Climate Bonds Initiative: January 2018

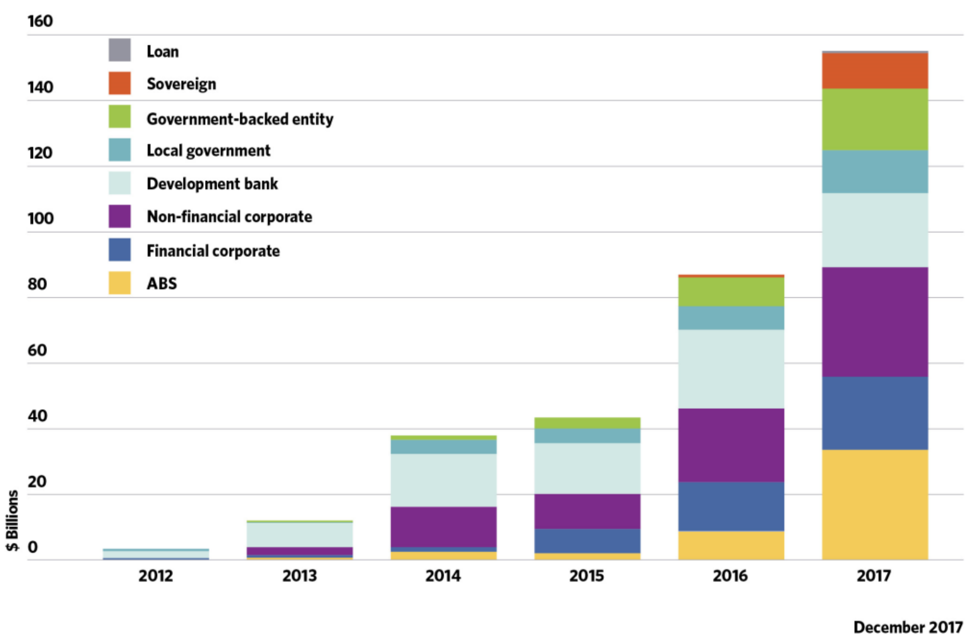
2017 global issuance reached USD155.5bn[i], surpassing even our initial, optimistic USD150bn estimate (later scaled back to USD130bn to account for slower growth in China early in the year). Our other market expectations outlined in *Green Bond Highlights 2016* were also met: (1) increased issuance from sovereign and sub-sovereigns, (2) policy developments supporting green finance and market harmonisation, and (3) green bond oversubscription.

The US, China and France account for 56% of 2017 issuance. US Agency Fannie Mae tops the charts with USD24.9bn[ii] of Green MBS, which propelled the US to the No.1 country spot. In China, banks still dominate at 74% of issuance, but less so than last year (2016: 80%). In France, the French sovereign bond is the major contributor. Issuers came from 37 countries with ten new entrants including Nigeria, Fiji, Malaysia, Argentina, UAE, Lithuania and Switzerland. Emerging market issuance is on the up and up.

A nice surprise: ABS outstripped all other issue types as a result of Fannie Mae boosting MBS issuance off the back of its Multifamily Green Initiative program and publishing its labelled Green MBS deal list. Our analysis picked this up late in 2017 thanks to improved labelling and filtering techniques. The greater visibility of Agency MBS has huge potential to spur property-backed green bond volumes.

2017 the year of sovereigns? It was a slow start and by midyear, it looked like we may have jumped the gun. But in the end, yes, it was. Not just because of France's record-breaking EUR9.7bn (USD10.7bn) deal. Fiji's FDJ100m (USD50m) issuance was a pleasant surprise, with the Pacific Island nation taking the lead to be third in the world. The year closed with Nigeria becoming the first African nation to issue a sovereign green bond (NGN10.7bn, USD30m) and the first Certified Climate Bond from a sovereign! We expect the trend to continue into 2018: here's looking to Belgium, Sweden, Morocco, Kenya and more...

The labelled green bond market is growing rapidly



2017 in numbers

USD155.5bn – total green bond issuance

78% growth on 2016[iii]

1500+ issues

37 countries of issuance on all **6** continents

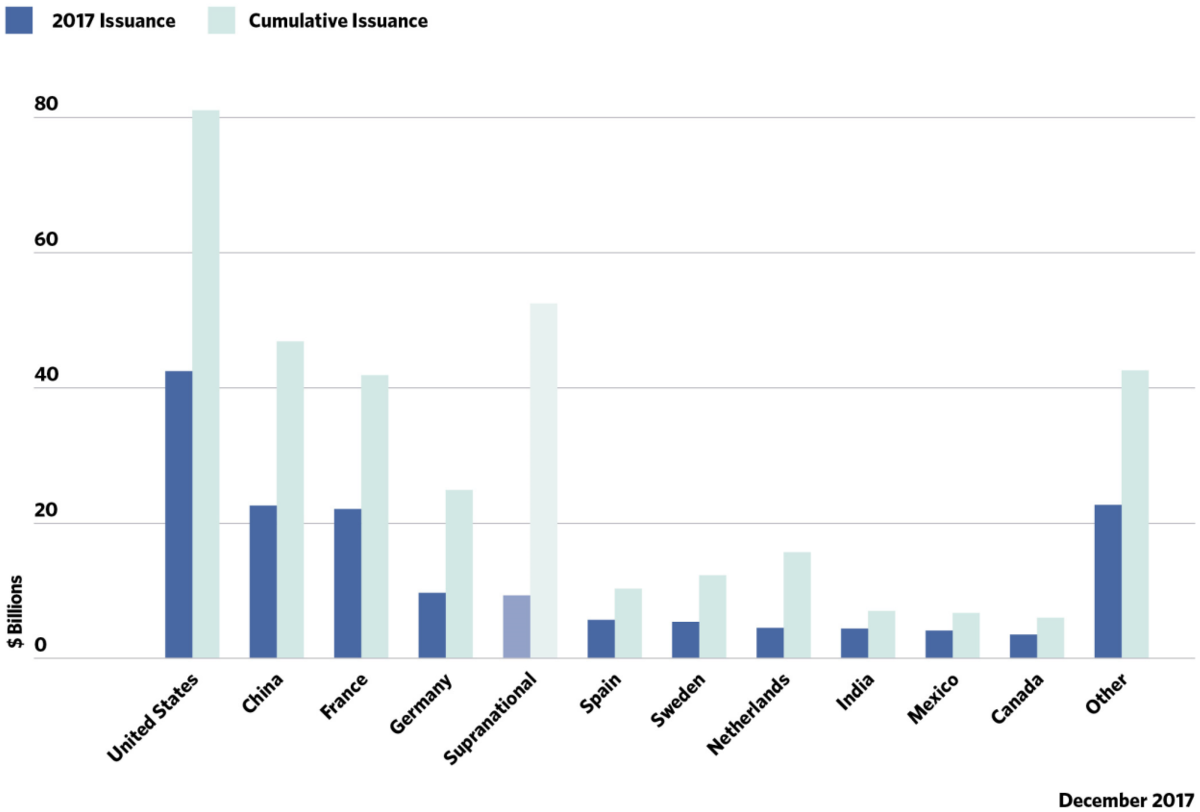
239 different issuers

146 new issuers

USD10.7bn – largest single green bond

3 sovereign green bonds

The US, China and France dominate 2017 issuance



For many countries 2017 represents a substantial part of total issuance, including the US. **The largest issuer was US Agency Fannie Mae with a staggering USD24.9bn of labelled Green MBS**[ii]. USD3.4bn of these MBSs have been repackaged as tranches in four Fannie Mae GeMS REMICs, offering investors an alternative deal format backed by the same collateral: certified low carbon buildings or secured financing for energy and water efficiency improvements of at least 20% in apartment buildings/multifamily housing.

The **Republic of France** came in second with its EUR9.7bn (USD10.7bn) sovereign green bond, issued in an initial placement of EUR7bn in January (making it the **largest single green bond ever** issued) and two subsequent tap issues. The next largest issuers were China Development Bank (USD4.6bn), EIB (USD4.6bn) and New York MTA (USD4.2bn). **239 issuers came to market,** of which 146 (61%) made their debut in 2017, showing that the market continues to attract a larger and wider issuer base each year.

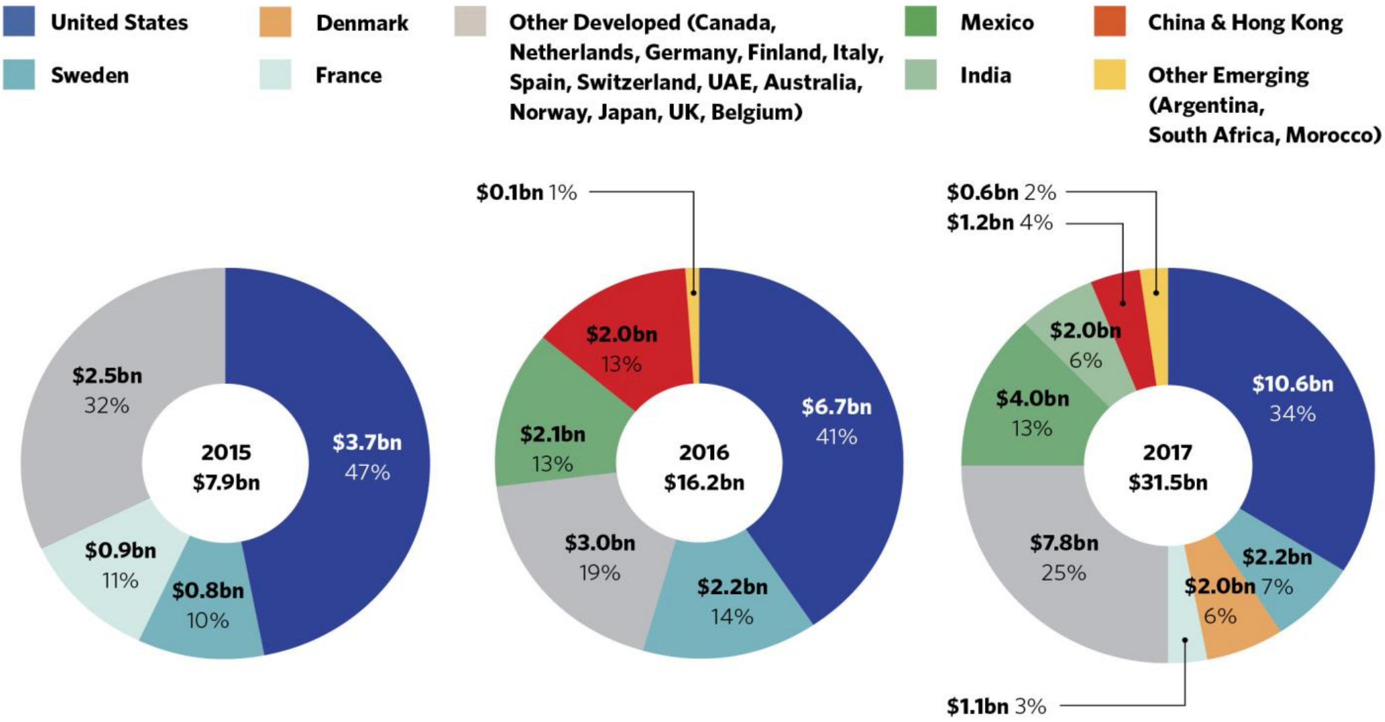
Emerging markets are showing encouraging signs of growth. China continued to be important with 2017 issuance at USD36.4bn in total and USD22.5bn of that aligned to international green bond standards, which exclude coal, certain large-scale hydro projects, etc. China had a quiet 1st Quarter, but high volumes in the 4th Quarter has brought the annual figures in line with 2016 (USD35.1bn in total, USD22.9bn climate-aligned)[iv]. In 2017, Certified Climate Bonds from Chinese issuers amounted to USD6bn – a signal of the country's commitment to comply with international best practice and close the alignment gap.

Indian issuers more than doubled volumes to reach USD4.3bn and break into the Top 10. The rise in volume was partly attributed to government-backed entities which raised 47% of bond proceeds upon entering the market. **Mexico** claimed the title of sixth largest issuer of the year with a single deal from Mexico City Airport: the USD4bn bond represents an 85% rise in issuance over 2016.

Sub-sovereign issuance from Local Government and Government-backed Entities is on the rise and accounted for 21% of 2017 volume. If government-backed Fannie Mae's bonds were included in this category rather than under ABS, sub-sovereign deals would total USD56.9bn or 37% of 2017 issuance.

At USD10.6bn, US Muni bonds comprised 33% of 2017 sub-sovereign issuance, excluding Fannie Mae – a positive sign given the significant political headwinds on climate in Washington. Over 10 new US municipalities entered the market and we expect this trend to sharpen as states and cities increasingly connect their climate agendas with green infrastructure development and debt capital raising plans. We also saw further geographical diversification, with issuers from eleven new countries.

Green bond issuance 2017 US dominates but there is increasing geographic diversity

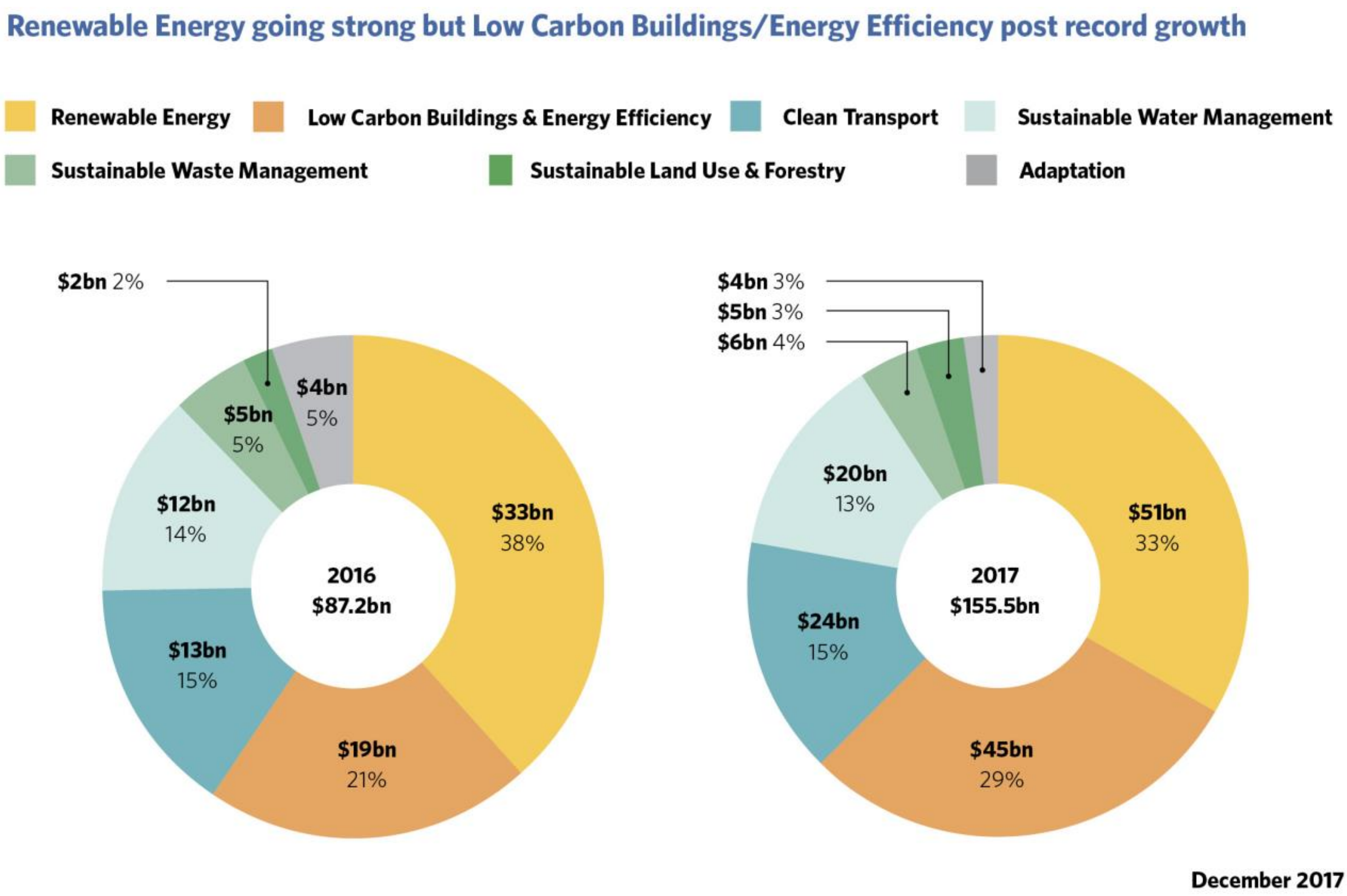


December 2017

The role of development banks is changing. Green bond issuance from development banks decreased by 6% due to a 21% drop in issuance from supranational banks. However, supranationals are assuming a more prominent role as investors in green bonds and wider climate projects.

During the 2017's 'One Planet Summit' in Paris, MDBs including the World Bank and EIB announced their commitments to increasing capital flows directed to support the transition to a low carbon economy. For instance, the IFC initiated work on Amundi's new USD2bn Cornerstone Green Bond Fund, which will invest in bonds issued by banks in emerging markets. The IFC has committed up to USD325m and the EBRD intends to invest up to USD100m.

Investment in renewable energy continue to be the most common use of proceeds, however their share has dropped, while allocations to low carbon buildings and energy efficiency rose 2.4 times year-on-year and accounted for 29% of 2017 use of proceeds. With a multitude of rail and urban metro deals, allocations to low carbon transport almost doubled in volume. The trend to finance an increasingly diverse range of projects continues. Waste, Land Use, and Adaptation themes continue to be the smallest, in part due to a lack of clear definitions on which project types would qualify.



The market is opening up to new issuers and financial instruments. Three asset/fund managers are now using green bonds to fund investments: Canadian Manulife Financial for renewables and other low carbon assets, Australian QBE Insurance for a green bond fund and Investa for two Australian commercial property funds.

The green label is being applied to a wider range of financial instruments. Fannie Mae's Green MBS and green tranches in REMICs are a case in point. But also, the first Green Sukuk (Tadau Energy – Malaysia), first labelled and Certified green loan (MEP Werke – Germany), first green tranches in a US CMBS deal (CSAIL 2017-C8) and first Climate Bonds Certification for a green finance programme covering existing and future debt in bond and loan format (Contact Energy – New Zealand).

With three Green Sukuk from Tadau Energy (USD58.5m), Quantum Solar (USD236m) and Permodalan Nasional (USD461m), Malaysia has become an innovator in green Islamic finance thanks to incentives promulgated by Securities Commission Malaysia such as tax deductions on SRI Sukuk issuance costs.

Towards unified green definitions and standards - a number of initiatives are underway to harmonise differences between regional green finance standards and definitions:

- **The European Commission's High-Level Expert Group on Sustainable Finance** (HLEG)[v] has been working towards setting out clear recommendations to facilitate the development of green finance and establish common European green bond standards. In December, the Commission announced that capital requirements for some environmentally friendly assets could be lowered to promote green finance.
- Many organisations are re-assessing standards. For example, **the EIB and China's Green Finance Committee** published a white paper identifying differences between the European and Chinese green bond standards with a view to work on convergence in the future.
- **The ASEAN Capital Markets Forum** launched the ASEAN Green Bond Standards in November, which will contribute to enhancing transparency and unification of the market and ensuring investors have access to sufficient information. Policy work is also ongoing in **Indonesia, India, Argentina, Mexico, Nigeria and Kenya**.

Seven trends to watch for in 2018

After staying flat for three consecutive years, CO_2 emissions are forecast to rise around 2% in 2017: Current climate action and investment is not on track to limit global warming to below 2°C, let alone any ratchet of ambition towards 1.5°C.

Despite 2017 being a positive year, for global finance and its actors to be making a substantial impact on climate targets, we estimate that the green bond market needs to reach USD1tn by 2020.

1. **More sovereign issuance from developed and emerging economies** as more governments look to finance climate resilient infrastructure and achieve their NDC commitments. The pioneers from 2016 and 2017 will be case studies to encourage new entrants.
2. **Progress on common international standards and definitions** for green bonds**,** with the launch of a European Taxonomy for sustainable finance expected in H1 2018.
3. **Sub-sovereigns will continue to push the market forward** spearheaded by US Municipals – our official estimate for US Municipal issuance in 2018 is USD20bn – and US Agency MBS and REMICs.
4. **Regulators will keep innovating** with more guidelines, regulations and incentives being put in place. European Commission consideration of lower capital requirements for lending against energy efficient buildings and electric cars is an example.
5. **Pressure to grow on** the banking sector to lift green lending along with investor demands on the largest corporate emitters to demonstrate more brown-to-green financing to help meet Paris targets.
6. **Increased linkages between green bonds, green finance and SDGs,** particularly as a source of finance for goals 6, 7, 9, 11, 13 and 15.
7. **Our forecast for 2018 is USD250-300bn**. That means at least 60% growth on 2017 figures. But the aim is *to keep doubling* labelled issuance volume to top USD1tn by end 2020.

   Our high expectations about increasing green bond volumes are shared. Out of *all* possible bond types, DCM Heads of 20 of the top investment banks are most optimistic about SRI/green bond volume, according to recently published results from Global Capital's 2018 outlook survey.

End Notes:

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[i] Only bonds with at least 95% proceeds dedicated to green projects that are aligned with the Climate Bonds taxonomy are included in all figures – USD22.5bn in other labelled bonds were issued in 2017 but not included in these figures. A further USD480m is pending inclusion subject to additional information.

[ii] Fannie Mae figures are January through November as December data is not yet available. The agency comes to market regularly, at least monthly and issued 1043 Green MBS bonds over the 11 months. We have been tracking REMICs with green tranches thanks to the greater publicity around them, particularly FNA 2017-M10, which is backed entirely by “green” collateral. By contrast, identifying green Multifamily MBS among all FNMA issuance used to be a challenge but the Green MBS labelling and the launch of a dedicated web page have significantly improved visibility.

[iii] We are upgrading our official 2016 figure from USD81.6bn to USD87.2bn to account for pending and other issues being included in our database in the course of 2017. USD3.5bn of the amount relates to Fannie Mae Green MBS, now labelled as such.

[iv] USD13.9bn in green bond issuance from Chinese issuers is excluded from our 2017 figures due to lack of alignment between Chinese and international bond standards (2016: USD12.2bn). We also account for Hong Kong issuers – who issued USD100m in 2017 – separately.

[v] HLEG is comprised of twenty banking, investment and green finance and sustainability figures, including Sean Kidney, CEO of the Climate Bond Initiative.