Climate Bonds INITIATIVE

Green Bonds Market Summary

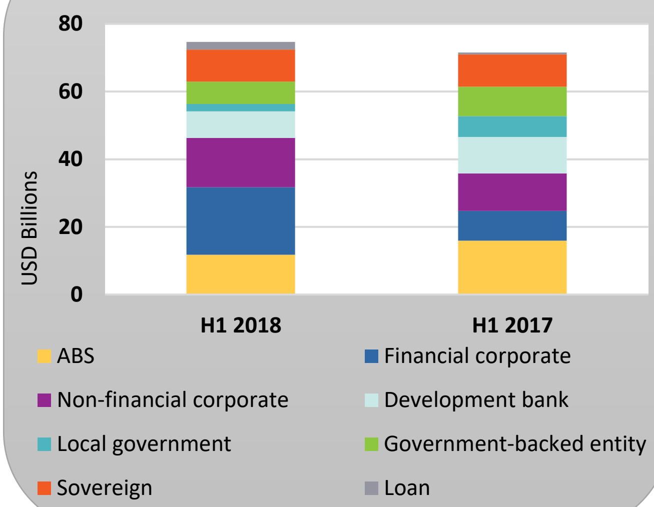
H1 2018

July 2018

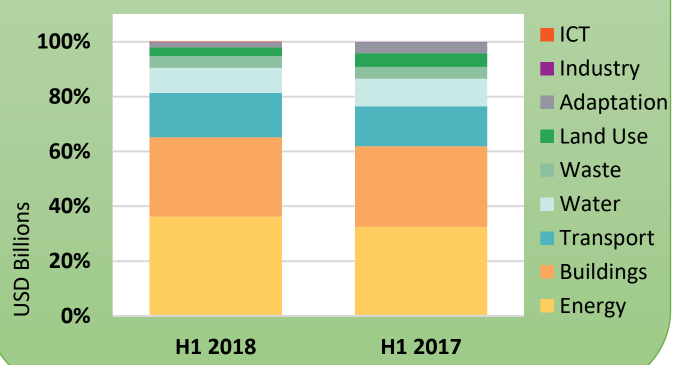
The first half at a glance

- USD74.6bn of issuance*
- 670 green bond issues* with 491 from the USA, 36 from Sweden and 35 from China
- 156 issuers* from 31** countries
- 81 market entrants from 25** countries bring the total number of green bond issuers to 499
- 48** green bond markets reached, including three H1 additions: Indonesia, Iceland and Lebanon
- Lithuania brings the number of sovereign green bond issuers to 7
- June issuance was strong with 44 deals in 14** countries and 19 new issuers

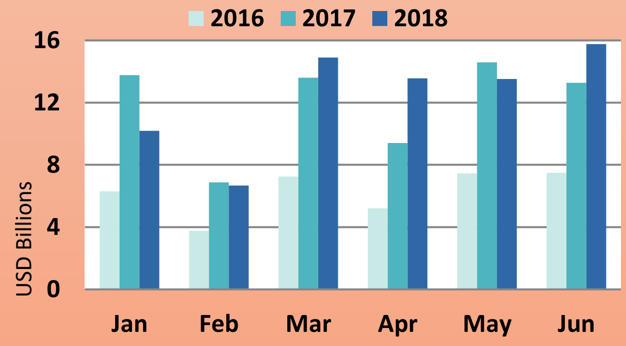
H1 volume* by issuer type



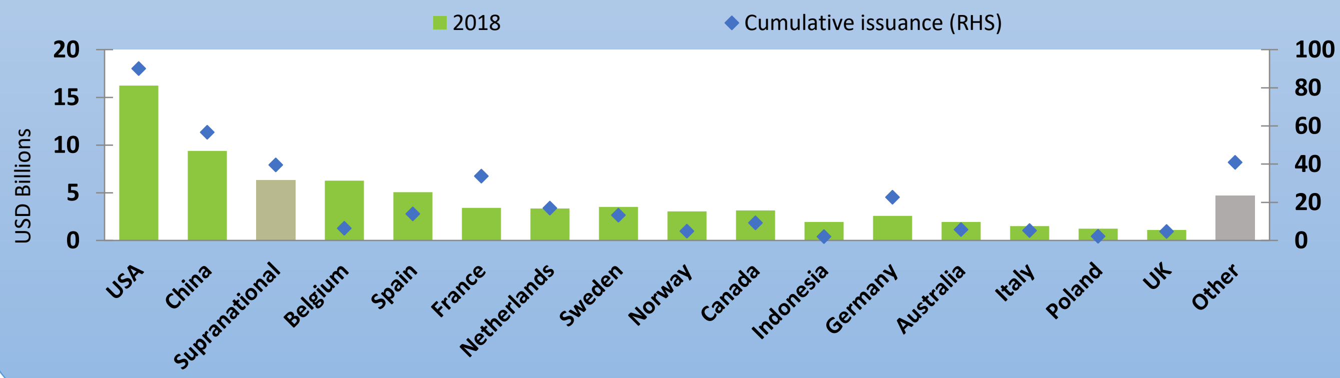
H1 use of proceeds*



H1 monthly issuance volume*



H1 2018 green bond issuance: top 15 countries*



** All charts and analysis are based on preliminary figures for H1 2018 issuance volume and number of deals, pending the inclusion of Fannie Mae Green MBS June deals and twelve deals still under assessment for inclusion in the CBI green bond database. ** Hong Kong is counted as a separate country as it is classified as a developed country according to MSCI's Market Classification whereas China is classified as an emerging market.*

H1 2018 green bond issuance highlights

Green bonds **included** in CBI's database for the first half of 2018 are up 4% year-on-year. For a bond to be included, at least 95% of proceeds must be dedicated to green projects that are aligned with the Climate Bonds Taxonomy.

Excluded bonds – including sustainability bonds - have more than doubled compared to H1 2017 figures. Accounting for excluded bonds in H1 total issuance takes figures to 15% up on 2017. This figure excludes **social bonds**, which CBI tracks at USD4.6bn for H1 2018.

As of the end of June, **sustainability** bonds totalling USD6bn account for 38% of excluded bonds and are 71% up on H1 2017 (USD3.5bn). As discussed in our recent briefing, the successful development of social projects in the medium to long term is strongly dependant on whether these investments are climate-aligned.

Certified Climate Bonds accounted for 13% of H1 volumes, up from 9% in H1 2017. June saw a new record for monthly certification issuance at USD6bn, with Certified deals coming from Australian, Belgian, Chinese, New Zealand and Norwegian issuers.

Financial corporates dominated H1 issuance at 27%, up from 12% in H1 2017. ICBC, Bank of America and DNB Boligkreditt accounted for a third of the segment's volume.

Non-financial corporates came second at 20%, with ACS, Iberdrola and Public Service Company of Colorado driving issuance in Q2.

H1 2018 saw a surge in **covered bond** issuance: the new deals account for over 70% of cumulative covered bond figures. Volumes were driven by SpareBank 1 Boligkreditt and DNB Boligkreditt, both Certified Climate Bonds, which make up half the H1 green covered bond issuance. To date, 85% of green covered bonds finance low carbon buildings. In Q2 2018, Landshypothek Bank issued the first green covered bond secured on FSC-certified forest assets.

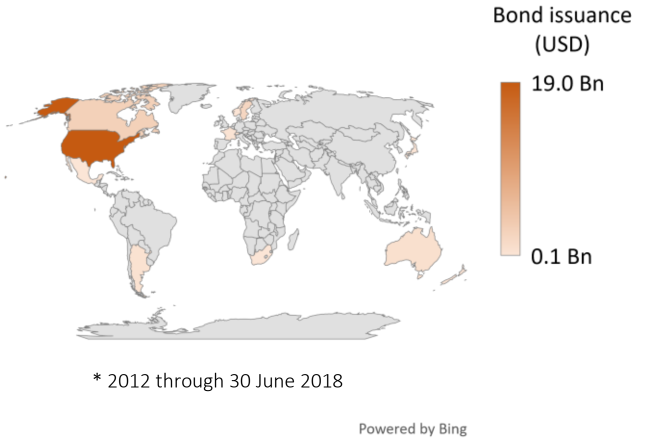
Emerging market green bonds represent 19% of H1 2018 volume, which matches their contribution to H1 2017 issuance. Including supra-national issuance in emerging market figures brings EM market share to 28%, versus 25% in 2017. In Q2 2018, the majority of EM green bond issuance came from China (80%), followed by Indonesia and South Korea at 7% each.

H1 2018 **sovereign** issuance represents 13% of total volume, matching H1 2017. In May 2018, the Republic of Lithuania issued its first green sovereign as part of a wider programme to finance energy efficiency projects in multi-apartment buildings. After a EUR1.1bn tap in April, France has re-opened its sovereign Green OAT once again in July for an additional EUR4bn.

Local government green bond H1 volume decreases as US Muni issuance falls

Green bonds from local governments totalled USD2.1bn in H1, or 3% of issuance, down from 9% in 2017. H1 deals came from 17 issuers from four countries, with new entrants accounting for 30% of volumes.

Local government green bonds (cumulative)*



* 2012 through 30 June 2018

Canada came first, with the Province of Ontario and the Province of Québec's repeat deals contributing 56% to global H1 2018 local government green bond issuance.

The **US** slipped to second place (first in H1 2017). US Muni issuance accounts for 22% of H1 volume. Debut deals include the first US Muni green bond to obtain Certification under the Renewable Energy Criteria of the Climate Bonds Standard (New York SERDA) and one of the few bonds where proceeds are exclusively allocated to climate resilience (Louisiana Local Government Environmental Facilities and Community Development Authority). As cumulatively, US Muni bonds account for over 70% of local government green bond issuance to date, the drop in H1 2018 volume inspired us to conduct some further analysis (see page 3).

Sweden accounted for 16% of local government volumes, with two new and two repeat issuers. Vastra Gotalandsregionen issued its debut green bond in May to finance low carbon buildings. Proceeds of Nacka Kommun's first green bond will be allocated to renewable energy assets, clean transport, waste and water management, adaptation and energy efficiency measures.

Auckland Council's debut Certified Climate Bond is the first green bond issuance from a **New Zealand** local government. The bond will finance electric passenger trains and associated infrastructure.

Climate Bonds Initiative

Can US municipals scale up green bond issuance? Likely, "yes"

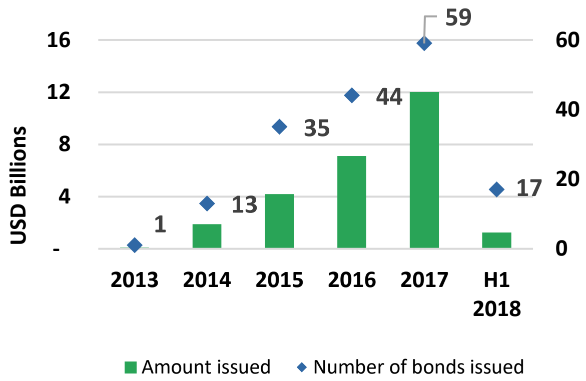
We conducted a scoping exercise and have revealed that at least USD250bn of outstanding bonds from specialised US municipal issuers are climate-aligned, same as green bonds, but not labelled 'green'. Refinancing needs from these climate-aligned issuers will offer an opportunity to label bonds and consolidate US municipals' position in the green bond market.

The first US municipal green bond was issued in 2013 by the Commonwealth of Massachusetts. Over the next four years, issuance went up rapidly to reach USD12bn in 2017, or 27% of the total US green bond issuance for the year.

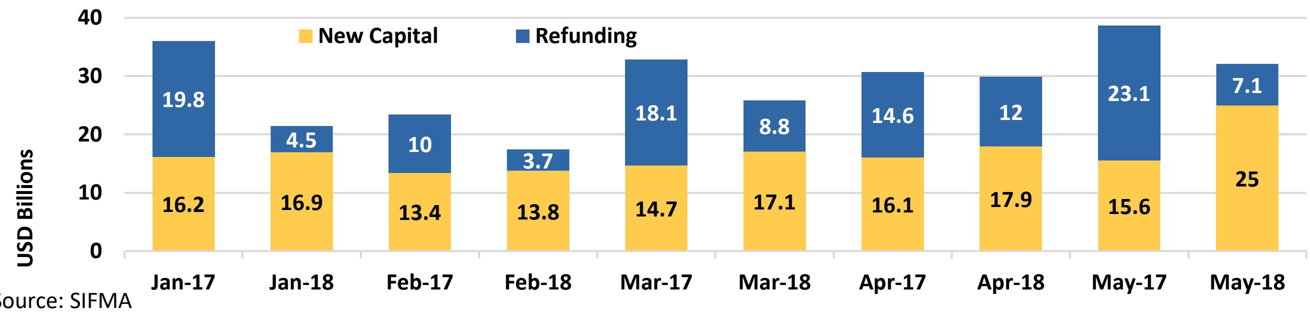
Green bond issuers from 31 US states have issued to date. The top 3 states account for 64% of US Muni green bond issuance: New York ranks first (USD7.2bn issued as of end H1 2018), followed closely by California (USD6.9bn). The third largest is the pioneer: Commonwealth of Massachusetts (USD2.9bn).

However, US Muni green bond issuance dropped in H1 2018. This is in line with a wider trend in US Muni issuance. The passing of the Tax Cuts and Jobs Acts of 2017 by Congress in December 2017 resulted in major alteration to US tax law. That has impacted the issuance of refunding bonds in particular, according to SIFMA monthly data.

After years of rapid growth, US Muni green bonds hit a roadblock in 2018



Tax Cuts and Jobs Acts of 2017 has resulted in a drop in refunding issuance volume in 2018



Source: SIFMA

SIFMA data through May 2018 shows that US Muni issuance decreased 22% from Jan-May 2017 (USD162bn) to Jan-May 2018 (USD127bn). While issuance of new capital bonds has increased (+19%), refunding bond issuance has plummeted (-58%), dragging overall issuance numbers down. The trend is even more apparent for Q1 2018: refunding bond issuance was 65% below the Q1 2017 level.

So, how can US Munis scale up green bonds?

We screened the EMMA website to identify climate-aligned US municipal entities in the water, waste, transport, land use and renewable energy sectors, i.e. in key sectors from the Climate Bonds Taxonomy. We acknowledge that there are many more entities issuing bonds for climate-aligned projects but for the purpose of this scoping exercise, we honed in on specialised agencies with more than 95% of their revenue derived from climate solutions (pure-plays).

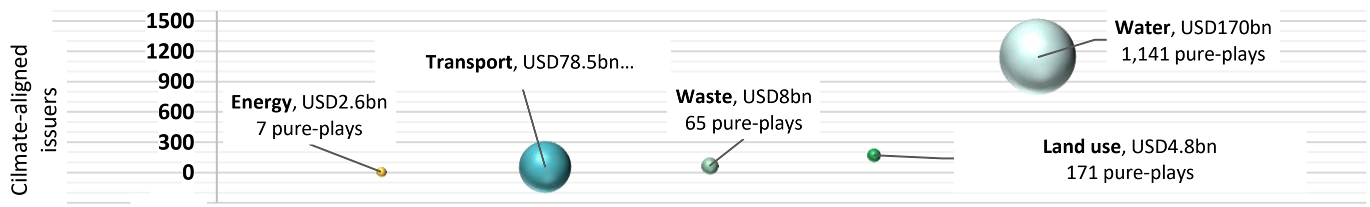
We identified 1,436 issuers with USD264bn in bonds outstanding. Over half the volume is attributable to 50 pure-plays with USD1-10bn of outstanding bonds, most of them from the transport and water sectors. The two issuers with outstanding debt exceeding USD10bn are also from these sectors and account for a quarter of total volume. The smaller issuers are primarily from the water industry.

Water is the largest climate-aligned theme, but resilience financing, waste management and land use could all add diversity to the green bond market.

23 of these entities have issued green bonds: USD14bn in total. Their peers could follow their path into the green bond market. The scoping exercise outlines potential issuers. This could boost issuance in several of these categories.

For the full sector analysis see our latest US Muni briefing..

Water is the largest climate-aligned theme for specialised US Muni issuers



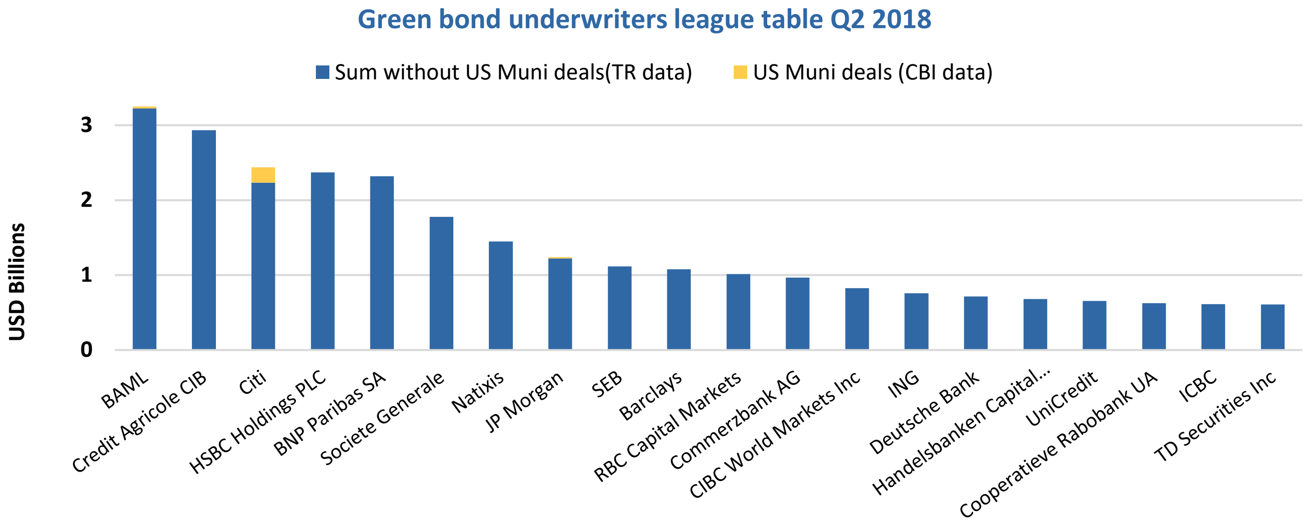
Green bond underwriter league tables

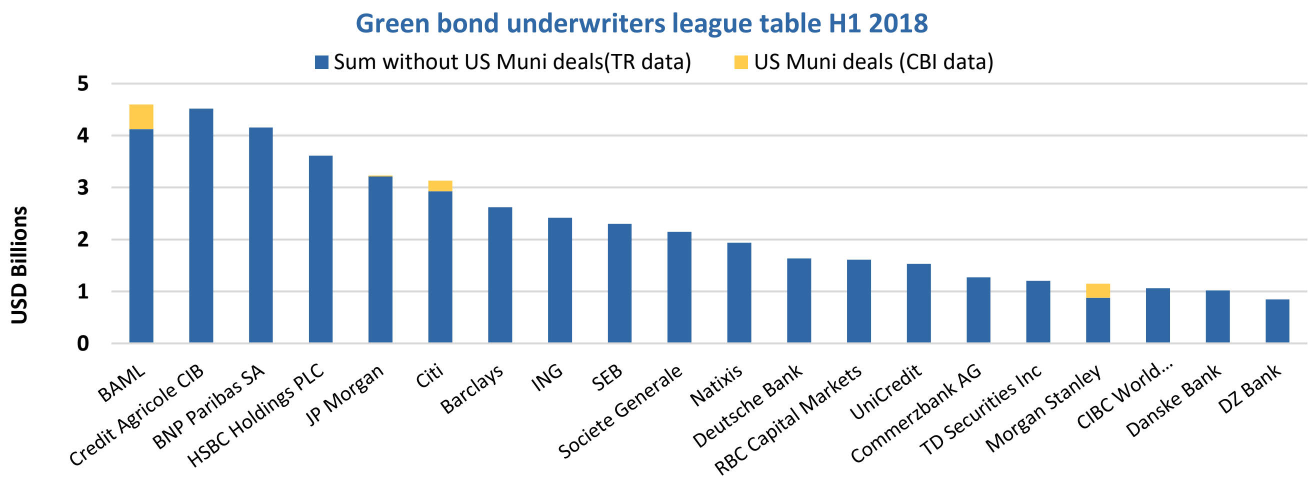
Bank of America Merrill Lynch (BAML) topped quarterly rankings for the third time since Q3 2016, with USD3.2bn of underwritten deals. 70% of the underwritten volumes came from Bank of America's fourth green bond.

Crédit Agricole CIB ranked 2nd, up from 4th place in Q1 2018, with USD2.9bn. France's latest Green OAT EUR4bn tap accounted for around a third of the underwriter's volume.

Citi returned to the podium of the quarterly green bond underwriters league table, ranking 3rd with USD2.4bn. It had topped the rankings in Q3 2017. One fifth of volume came from EIB's USD1.5bn green bond issued in April.

League table data was put together in collaboration between Climate Bonds and Thomson Reuters.





League tables: Methodology and data

Since Q3 2016, the underwriters league tables are collated using data from Thomson Reuters *except* for US municipal bonds which are calculated by the Climate Bonds Initiative. As such, ranking volumes differ from Thomson Reuters tables. Volumes may differ from other league tables as they *include* ABS deals and US municipal bonds and *exclude* bonds which have less than 95% of proceeds going to environmental assets/projects or aren't within the Climate Bonds Taxonomy.

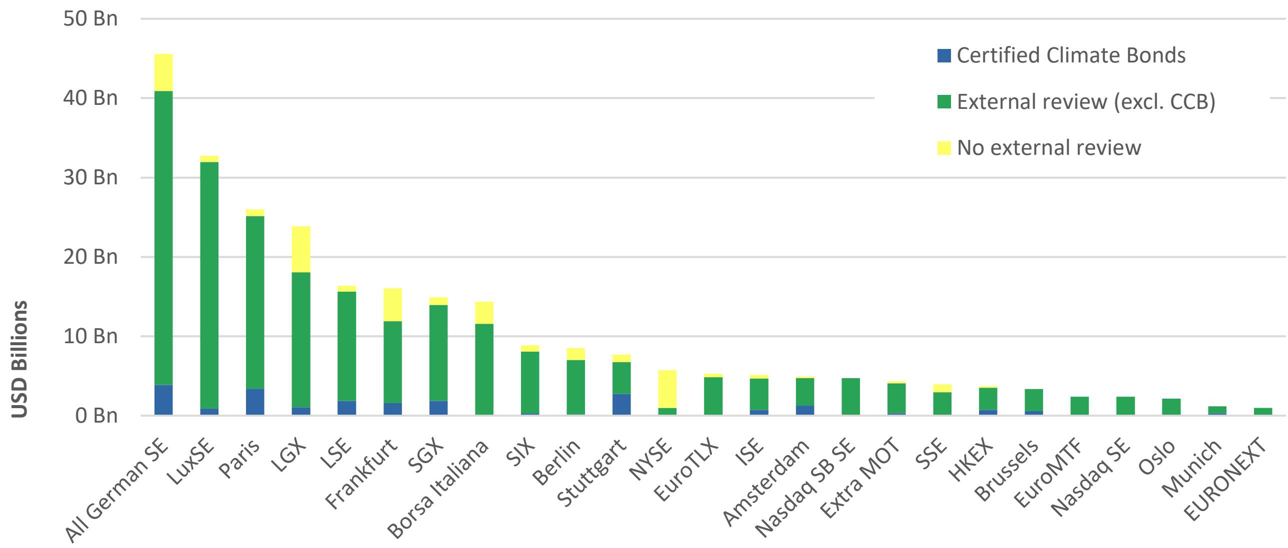
Thomson Reuters data methodology:

- Primary Issuance only
- Underwritten transactions only
- Thomson Reuters data excludes tax exempt US Municipal bonds
- The global table includes transactions that mature at least 360 days after settlement
- Transactions that mature or are callable/puttable less than 360 days after settlement are excluded
- Self-funded straight debt transactions are excluded (excluding mortgage and asset securitizations) unless two or more managers/ underwriters unrelated to the issuer are present.
- Transactions with an issue size of less than USD 1m (equivalent) are included; sole led MTN take downs with a minimum size of USD50m for core currencies are included, USD10m for non-core
- Deals must be received within five business days of pricing to be eligible
- For a transaction to be green league table eligible, deals must have 100% of proceeds formally earmarked for green projects
- Issuances where there is a mixed use of proceeds designated across different projects, are not eligible: e.g. ESG bonds that combine social and green projects
- Securitisation deals and private placement will be included provided they meet the standard criteria

Listing venue league table

From Q2 2018, Climate Bonds Initiative will issue a listing venue league table for green bonds on a quarterly basis. As of H1 2018, USD260bn worth of green bonds have been listed on stock exchanges, accounting for 60% of the overall green bond market. Including cross market platforms, the share goes to 63%. The over-the-counter market and China Interbank Bond Market are not included in the listing venue league table and, at USD97bn, account for 23% of the market. The remaining 15% of bonds are either not listed or listing information is not readily available.

Top 25 green bond listing venues



Listing venue league table methodology notes:

- For a green bond to be eligible for the league table, deals must meet our Methodology criteria. For example, ESG bonds with significant social project allocations, or bonds that finance clean coal are excluded.
- Primary data sources for listing venues include Thomson Reuter EIKON, Bloomberg Terminal and Wind Financial Terminal. They are further supplemented by information collected from stock exchanges with a dedicated green bond segment, such as Luxembourg Green Exchange, London Stock Exchange, Borsa Italiana, Shanghai Stock Exchange and Taipei Exchange.
- At most four listing venues are recorded for calculation purposes. If a bond is listed on multiple exchanges, primary vs. secondary listing venues are not differentiated.
- When a green bond is listed on more than one venue, the issued amount is divided by the number of venues and each venue is allocated an equal share.
- We have not allocated bonds listed on All German SE, EURONEXT and Nasdaq Nordic to the constituent stock exchanges.
- A bond listing venue is treated as "Not listed" when the bond is not listed or relevant information is not available from the sources identified in this methodology.
- Bond volumes allocated to each listing venue are categorised into Certified Climate Bonds, bonds with external reviews (other than Certified Climate Bonds) and bonds with no external reviews.

  Commentary:
  - Bonds issued before the Green Bond Principles were first published in 2014 generally do not have external reviews. Many of the early issues have now matured.
  - Some external reviews may not be available until an end of the year assurance audit is completed. For instance, KPMG provides an annual independent review of EIB's Climate Awareness Bonds. The 2016 assurance report was published in mid-2017.
  - All LGX deals without a review relate to older EIB CAB bonds or ones from 2017/2018, for which an assurance report has not been published yet.