Green Bonds

An emerging asset class

Genesis of Green Bonds

Voters in San Francisco approved a revenue bond authority in 2001 for the issuance of “solar bonds” to fund renewable energy and energy conservation measures for businesses, homes, and government buildings. The city’s requirement for effective measures to control climate change drove the issuance of the solar bonds. The solar bond authority was a part of CleanPowerSF, the city's renewable energy program administered by the San Francisco Public Utilities Commission.

In 2007, the European Investment Bank (EIB) issued an equity-index-linked bond, the first fixed-income product among socially responsible investments. This bond structure was used to finance energy-efficient and renewable energy projects.

In 2008, the World Bank issued a labelled “green bond” that was similar to a conventional “plain vanilla” bond in structure but differs from EIB’s equity-linked climate awareness bond. The issuance of green bonds has surged since then.

Structure: The structure of green bonds is similar to that of conventional fixed-income bonds; however, their proceeds are only used for green investments. These bonds are usually asset-linked and backed by the issuing entity's balance sheet; therefore, they typically carry the same credit rating as their issuers’ other debt obligations.

Green bonds belong to the “theme bonds” category and are similar in principle to the 19th century’s railway bond, 20th century’s war bonds, or the 1960s’ highway bond.

Green bonds allow ESG-focused funds to participate in the financing of environment-friendly projects.

Source: *Aranca Research*

Increasing prominence of Green Bonds

Green bonds are designated bonds issued to encourage sustainability and provide finance for climate-related or other types of special environmental projects.

More precisely, green bonds fund projects aimed at sustainable agriculture, fishery and forestry, clean water, energy efficiency, protection of the aquatic and terrestrial ecosystems, pollution prevention, and clean transportation. They also finance the development of environment-friendly technologies and mitigation of climate change.

Apart from funding environment-friendly growth, green bonds provide investors a means of earning tax-exempt income, with the knowledge that the proceeds of their investment are being used in a responsible and positive manner.

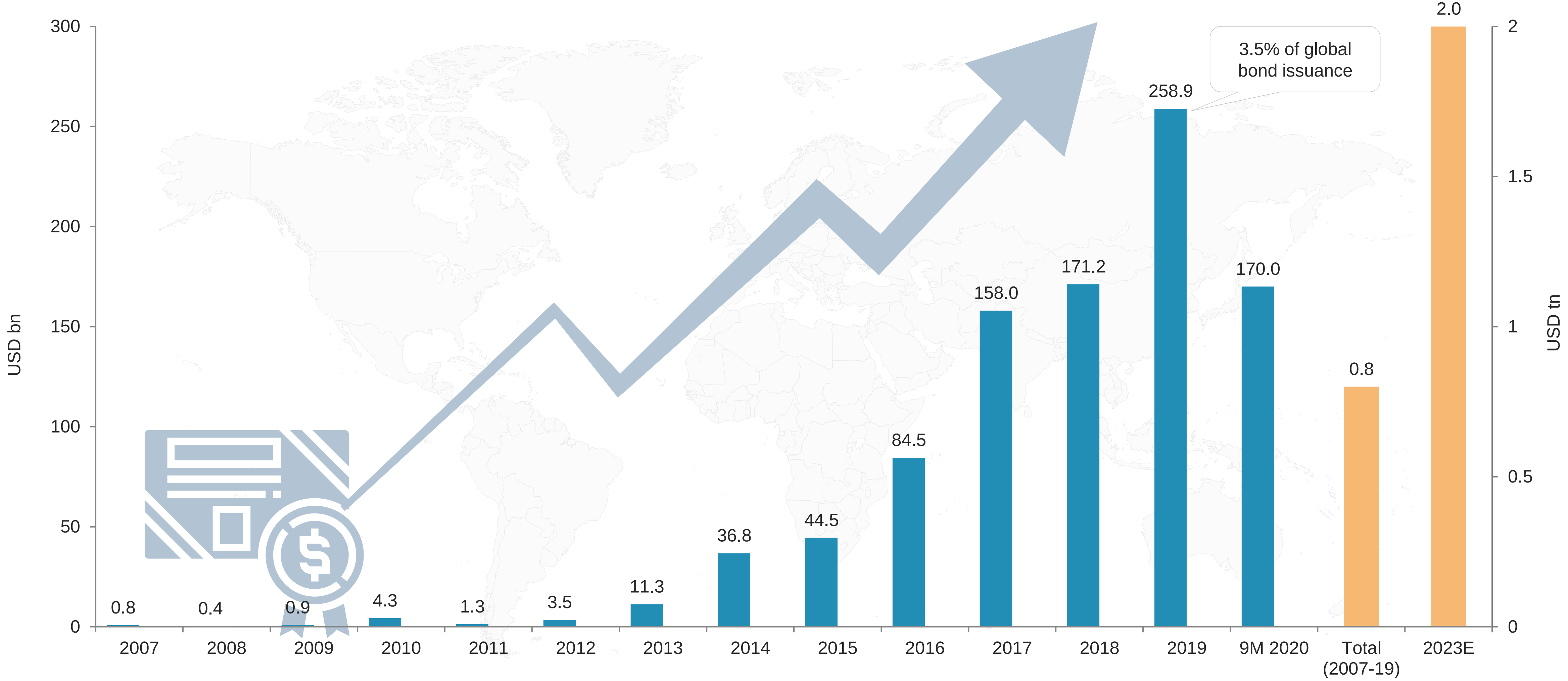
The green bond market grew to USD81 billion in 2016 from USD2.6 billion in 2012. Chinese borrowers contributed significantly to this increase, accounting for USD32.9 billion or more than a third of the total issuances.

Following several climate leaders' call for a ten-fold increase in green bond investment from 2016 levels, global green bond issuance continued to surge in 2017, increasing 78% YoY to USD155.5 billion. The leaders also set a target of USD1 trillion for 2020.

Although green bonds make up a small fraction of the overall bond market, they are attracting more attention, as huge amounts of capital are required from public and private sectors to meet emission-cut targets.

Source: *Aranca Research*

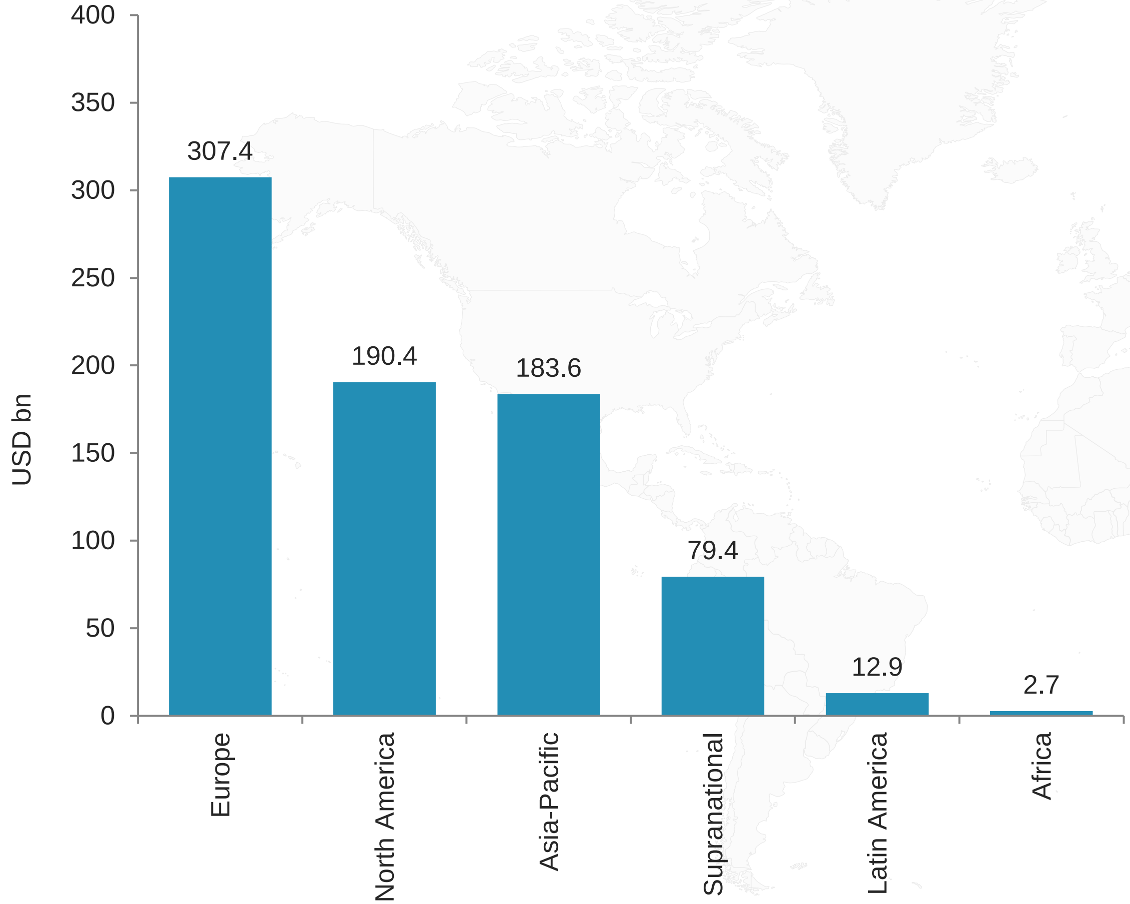
Green Bonds issuance surged after 2016

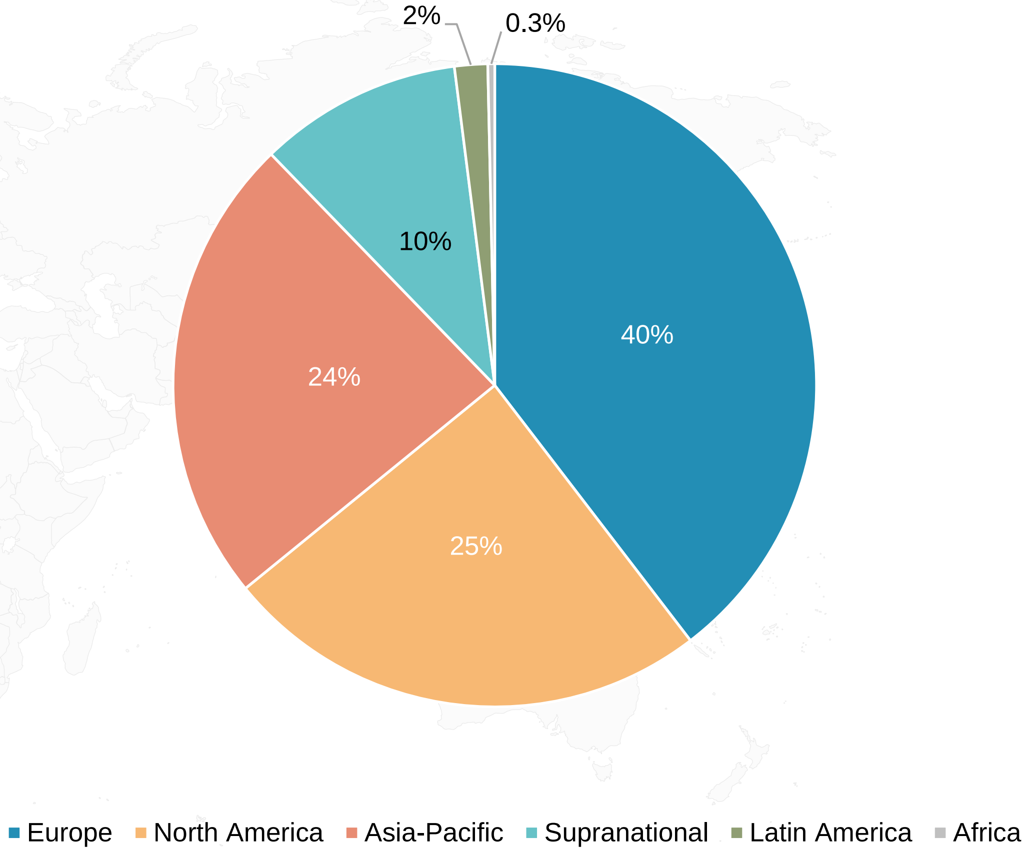


Source: *Climate Bonds Initiative; Aranca Research*

Green Bonds issuance by region (2007−19)

EU's environmental goals driving the issuances in Europe





Source: *Climate Bonds Initiative*

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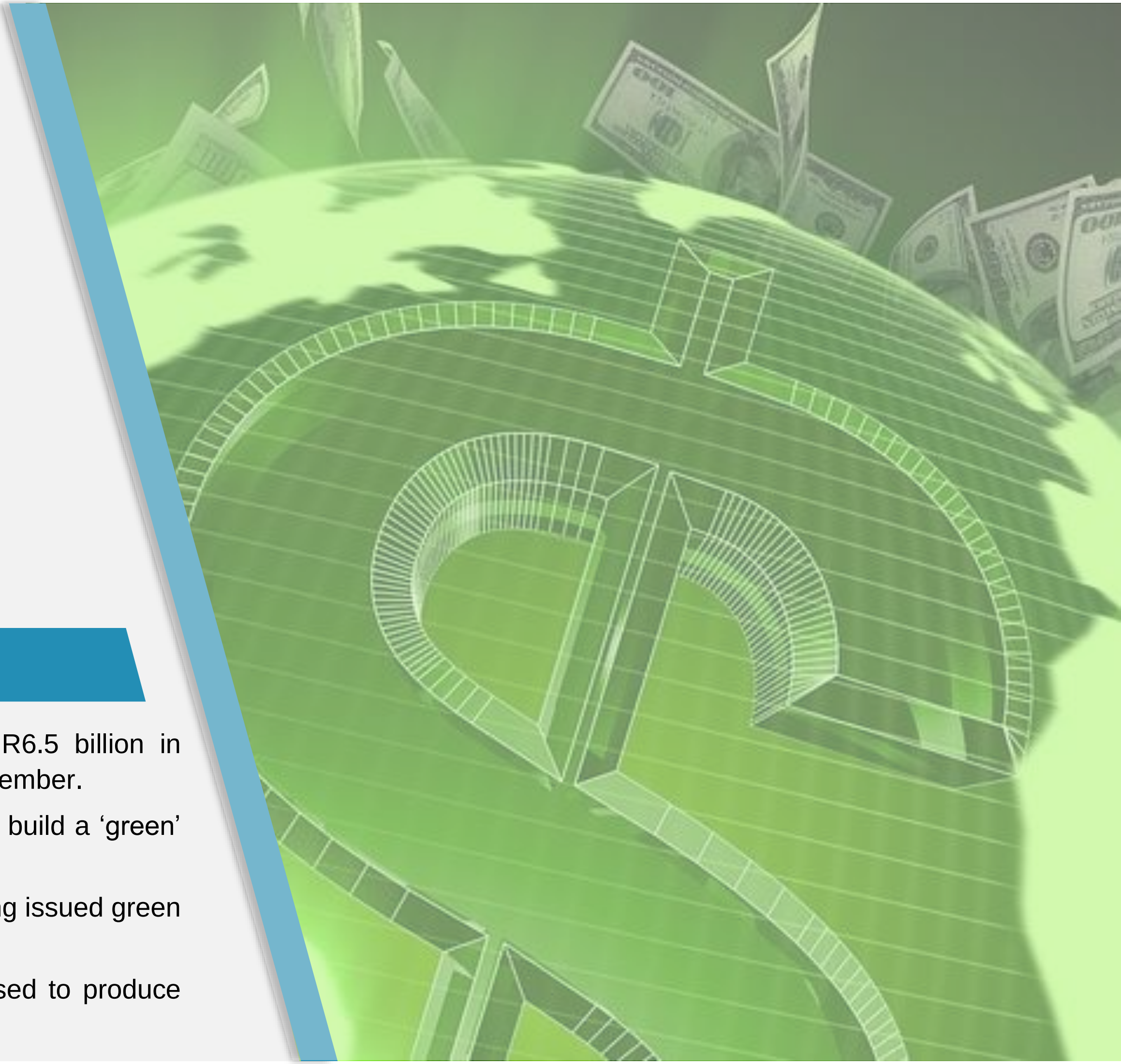
Higher issuance in Europe than other regions

High level of government involvement

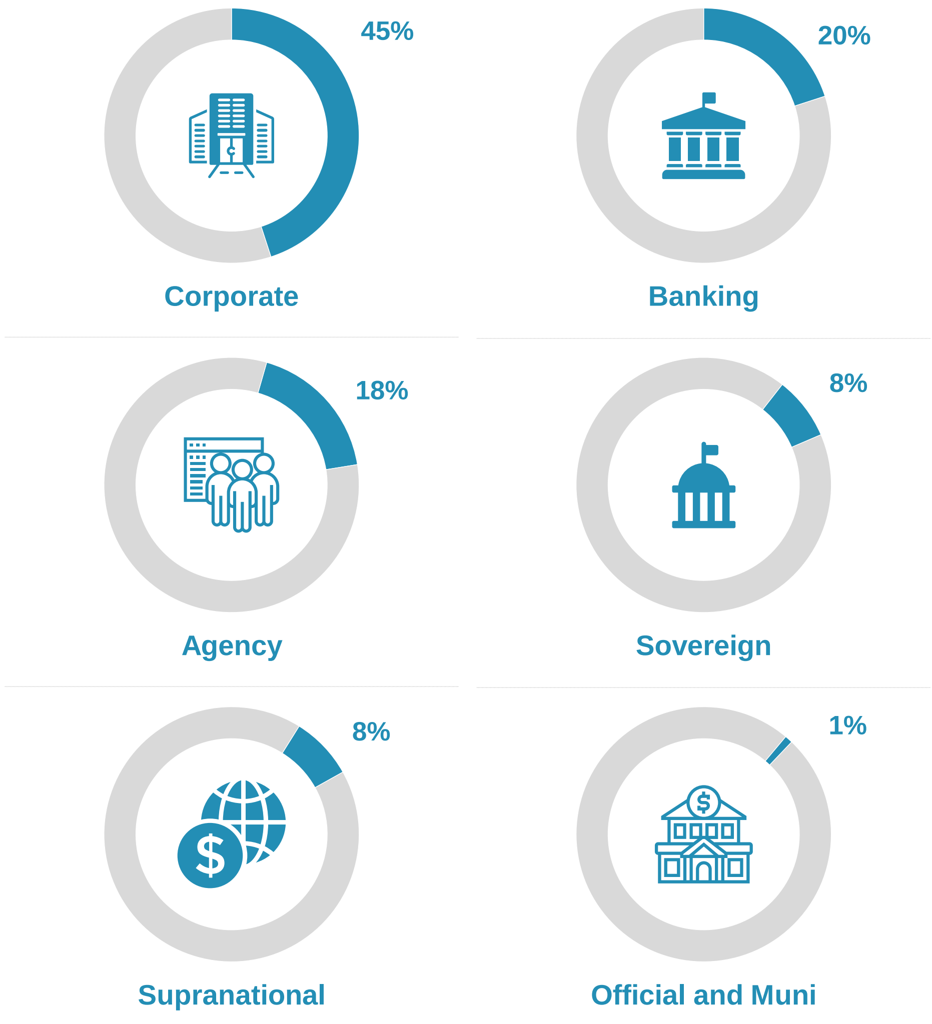
- In September 2020, Ursula Gertrud von der Leyen, President of the European Commission, announced that around 30% (~EUR750 billion) of Europe's COVID-19 recovery funds would be raised through green bonds.
- The EU plans to achieve 55% reduction in green house gas (GHG) emissions by 2030 and zero emissions by 2050; the green bond funds are expected to help achieve these targets.
- Christine Lagarde, President of the European Central Bank (ECB), indicated that the ECB is not just willing to issue green bonds but is also interested in buying them.
- The EU's taxonomy (a new classification system that defines green investments) is expected to boost green bond issuance.
- The EU plans to create a green bond yield curve, with bonds issued across maturities and majority of its planned 30% funds deployed in 2021-22.
- Green bond issuance has increased in Europe backed by the ECB's commitment to increase market liquidity.

Rise in new green bond issuers

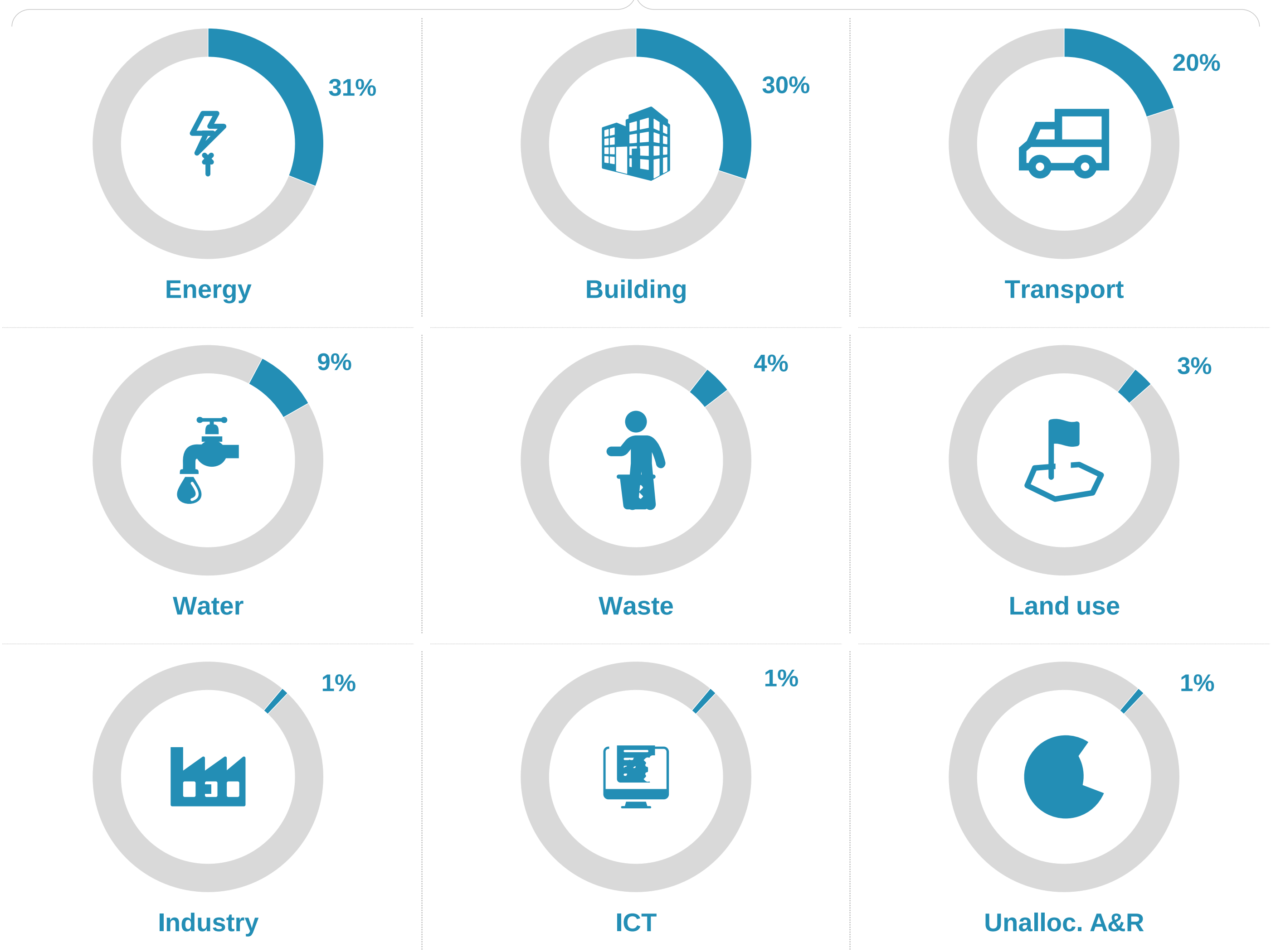
- Germany entered the green bond market with the issuance of its first green bond worth EUR6.5 billion in September. It plans to increase the total to EUR10.5 billion with the issuance of another bond in November.
- UK plans to issue its first 'green' government bond in 2021 and subsequently issue more bonds to build a 'green' bond curve over the years
- New corporates are also issuing green bonds; non-financial corporates are the largest issuers, having issued green bonds worth USD25.42 billion as of September 30, 2020.
- Daimler AG recently issued a EUR1 billion 10-yr bond, of which around 50% of funds will be used to produce electric cars.



Issuer composition by value- 2019

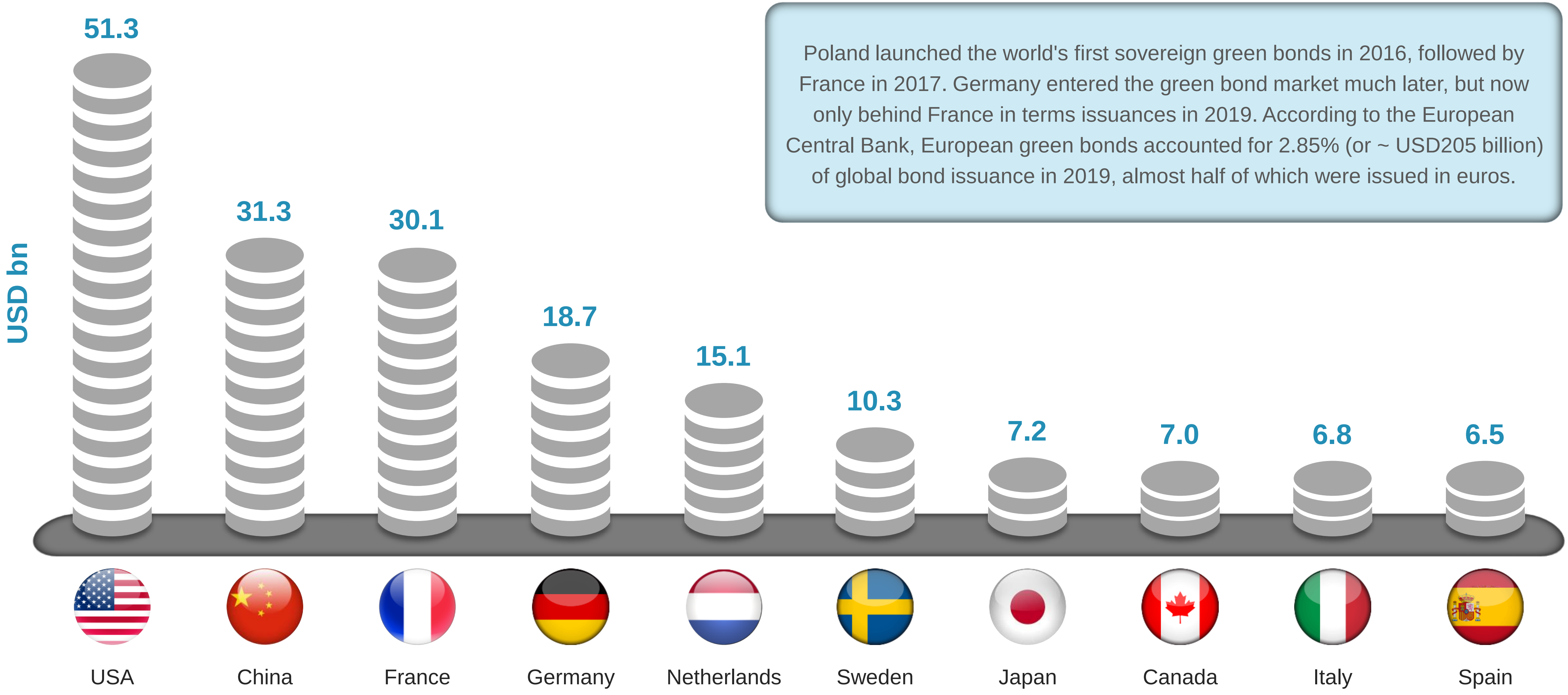


Use of proceeds – 2019



Source: *Climate Bonds Initiative*

Top 10 issuers - 2019



Poland launched the world's first sovereign green bonds in 2016, followed by France in 2017. Germany entered the green bond market much later, but now only behind France in terms issuances in 2019. According to the European Central Bank, European green bonds accounted for 2.85% (or ~ USD205 billion) of global bond issuance in 2019, almost half of which were issued in euros.

Source: *Climate Bonds Initiative*

Demand for Green Bonds remained high in 2020

Date	Country	Issuer	Issue size	Over-subscription	Tenor (years)	IPT	Re-offer yield
Oct-20	India	ReNew Power	USD325m	>6.0x	3.5	5.875%	5.375%
Sep-20	Egypt	Sovereign	USD750m	4.9x	5.0	5.750%	5.250%
Sep-20	Sweden	Sovereign	SEK20bn	2.4x	10.0	0.125%	0.090%
Sep-20	Germany	Sovereign	EUR6.5bn	5.1x	10.0	0%	--
Sep-20	Iceland	Landsvirkjun	USD100m	>5.0x	9.0	NA	2.79%
Aug-20	Germany	KfW Bank	USD2,000m	3.0x	10.0	MS+19bps	MS+16bps
July-20	Germany	Daimler AG	EUR 1bn	>4.0x	10.0	NA	0.75%

Source: *Aranca Research*

Green Bonds are issued across capital structure

Green bonds are usually asset-linked and backed by the issuing entity’s balance sheet; therefore, these bonds typically bear similar credit ratings and risks as their issuers’ other debt obligations. There are no explained reasons for high-priced green bonds and no credit enhancements for bonds that are labeled green.

As of 12th November 2020 YTD, ~61% of the total 340 issued green bonds carried a “Senior Unsecured” ranking.

Demand for high-quality green bonds is strong and is expected to strengthen further as the market expands and liquidity increases backed by government participation. For instance, in September 2020, the German Bund issue was oversubscribed five times, while Luxembourg’s sustainability bond was oversubscribed eight times.

Barclays Bank raised GBP400 million (USD521 million) by issuing green bonds to refinance mortgages on energy-efficient residential properties. The bond received robust institutional investor demand and was oversubscribed five times.

According to a climate bond initiative report, EUR-denominated green bonds were oversubscribed 5.2x in 1H 2020, while USD-denominated bonds were oversubscribed 2.6x.

Seniority Ranking	No. of Issues in 2020	% of Total
Senior Unsecured	340	60.8%
Unsecured	72	12.9%
Senior Non-Preferred	53	9.5%
Senior Secured	37	6.6%
Senior Preferred	31	5.5%
Subordinated Unsecured	8	1.4%
Senior Secured - Mortgage	7	1.3%
Senior Secured - First Mortgage	3	0.5%
Junior Unsecured or Junior Subordinated Unsecured	2	0.4%
Senior Secured - First Lien	2	0.4%
Secured	2	0.4%
Senior Subordinated Unsecured	2	0.4%

Source: *Climate Bonds Initiative*

Conclusion

- Green bonds issuance has increased substantially in recent years driven by governments' emphasis on environmentally sustainable projects. The funding needs were equally supported by investors, reflected by the strong demand for papers funding ESG-focused funds.
- One of the largest drawbacks to investing in green bonds is the lack of liquidity. Being a small market, entries and exits are more difficult than in other, more popular investments. However, growing issuances from issuers across currencies would facilitate further liquidity in this asset class.
- Another most cited challenge to the expansion of the green bond market at national or global scales is the lack of a strict agreed-upon definition of what “green” is. Although voluntary principles such as the green bond principles and the climate bond standards have attempted to resolve the matter, their guidelines are not mandatory and tend to focus on procedures. A report from the Luxembourg Green Exchange revealed that only about 3% of green bond proceeds are directed toward sustainable land use and biodiversity, while a vast majority is invested in energy, buildings, and transportation.
- It is difficult to measure the impact of funds received from green bonds on environment. Even when the proceeds of a bond can be shown to increase a particular expenditure, it is difficult to prove that the extra spending has had the desired impact. However, with growing importance of Green Bond in governments’ environment policy framework, the asset class has a bright future.

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