

Green Bond Insights

2019 market outlook: Rise of the ESG investor

FIXED INCOME CREDIT

Global

- ▶ Green bond supply growth falls to 8%, on EM deleveraging, market volatility and switch to sustainability bonds
- ▶ We anticipate USD140bn-180bn green bonds supply in 2019, and USD40bn-70bn of social and sustainability bonds
- ▶ We expect FI ESG focus to intensify in 2019: this should boost demand for sustainability bonds and 'pure play' green bonds

2018 green bond YoY supply up 8%; sustainability up 87%

Green bond supply growth slowed in 2018 to 8%, due to market volatility in much of 2018, a move towards EM deleveraging and some green bond cannibalisation, as some entities chose to issue social or sustainability bonds instead of green.

We anticipate USD140bn to USD180bn of green bond supply in 2019 (ranging between a 21% rise and a 6% fall versus 2018). Supply growth should re-ignite when EM markets stabilise and as green capex rises in response to climate change damage. But market and EM stability may not return rapidly in 2019; and the speed of the green capex build out is hard to judge.

We anticipate USD40bn to USD70bn of social and sustainability bonds. Sustainability bonds are suitable for sub-sovereign issuers and appeal to ESG investors, we think.

Rise of the ESG investor

We think that fixed income investors will focus more on ESG in 2019, partly as Moody's and S&P roll out governance and ESG scores for some issuers. It is our belief that ESG investors may:

- ▶ Prefer 'pure play' green bonds (bonds from firms operating wholly in environmental markets) to green bonds from industrial firms
- ▶ Prefer sustainability bonds to green, as ESG investors value both social and green goals
- ▶ Support the rise of SDG bonds, bonds where issuers declare how the bond's use of proceeds will aid one or more of the UN SDGs

Michael Ridley
Green Bonds & Corporate Credit Analyst
HSBC Bank plc
michael.a.ridley@hsbc.com
+44 20 7991 5918

Peter Barnshaw
Analyst, Credit Strategy
HSBC Bank plc
peter.barnshaw@hsbc.com
+44 20 7991 5022

Disclosures & Disclaimer

This report must be read with the disclosures and the analyst certifications in the Disclosure appendix, and with the Disclaimer, which forms part of it.

Issuer of report: HSBC Bank plc

View HSBC Global Research at:
<https://www.research.hsbc.com>

Contents

Strategy for a warming world	3
Green bond 2019 supply	4
What could cut green bond supply	7
Social and sustainability bonds	8
Reporting against the UN SDGs	9
Rise of the ESG investor	11
ESG focus to intensify in 2019	11
Scoring ESG	12
Green bonds or 'ESG integration'?	13
Bond supply in 2018	15
Green bonds	15
Fannie Mae MBS green	17
Chinese green bonds	17
Social and sustainability bonds	18
Appendices	19
A: EUR-denom. (≥EUR500m) green bonds	20
B: USD-denom. (≥USD500m) green bonds	24
C: Other currency (≥USD500m equiv.) green bonds	26
D: Corporate green bonds, by use of proceeds	27
Disclosure appendix	29
Disclaimer	32

Strategy for a warming world

- ▶ Green bond supply growth falls to 8%, on EM deleveraging, market volatility and cannibalisation as issuers switch to sustainability bond
- ▶ We anticipate USD140bn-USD180bn 2019 green bond supply
- ▶ Heightened ESG focus likely to raise pure play green bond demand

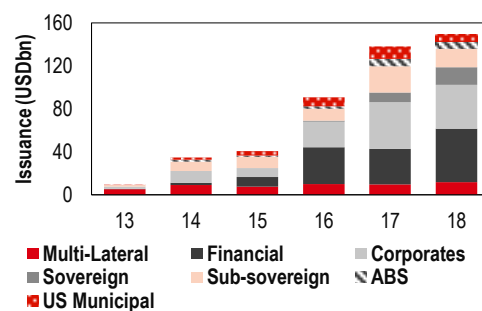
2018 green bond supply up 8% YoY

The green bond market continued to grow in 2018, despite wider market volatility. USD149.2bn of green bonds were issued in 2018 (excluding Fannie Mae multi-family green MBS), up 8.0% on the USD138.1bn in 2017. 2018 green bond supply came within the lower end of our USD140bn-180bn estimate.

So green bond supply was still up year on year, but the rate of growth slowed, we think because of market volatility in much of 2018, a move towards EM deleveraging and some bond cannibalisation, as issuers opted to issue social or sustainability bonds rather than green.

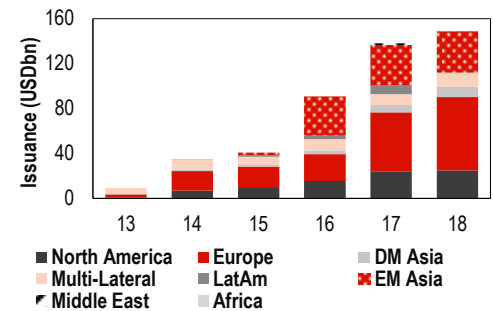
Of the 2018 green bond supply, 27.6% was issued by corporates, 33.4% by financials, and 12.0% by sub-sovereigns (Figure 1). By region, 43.9% were issued out of Europe, 16.6% from North America and 24.8% out of EM Asia (Figure 2).

Figure 1. Annual green bond supply by type



Source: HSBC calculations, Dealogic, Bloomberg

Figure 2. Annual green bond supply by region



Source: HSBC calculations, Dealogic, Bloomberg

We exclude Fannie Mae green multi-family MBS data from our green bond figures¹. If we include Fannie Mae, USD169.2bn green bonds were issued, up 2.1% YoY on USD165.8bn.

We are seeing a rapid rise in social and sustainability bond supply. (Social bonds fund social projects to assist one or more disadvantaged societal group, while sustainability bonds fund both green and social projects). USD16.8bn of sustainability bonds were issued in 2018, up 87% vs USD9.0bn in 2017, while USD13.5bn of social bonds were issued in 2018, up 35% versus USD10.0bn in 2017.

Combining all numbers, USD199.5bn of green (including Fannie Mae multi-family green MBS), social and sustainability bonds were issued in 2018, versus USD184.8bn in 2017.

Sustainability bond supply up 87% YoY

¹ Fannie Mae provides its data quite late, extends funds to clients to help them buy building as well as to make the buildings green – so the numbers may be inflated, and we have little visibility on Fannie Mae numbers going forward.

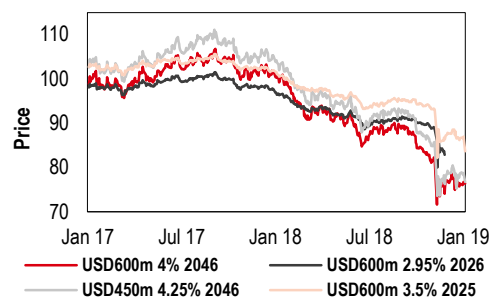
Green bond 2019 supply

Green bond supply growth should re-ignite

We are confident green bond supply growth will re-ignite for several reasons. We expect significant EM green bond supply when markets stabilise, as these countries decarbonise their power production and transport sectors. And as climate change damages reveal themselves, more firms will undertake green capex, in our view.

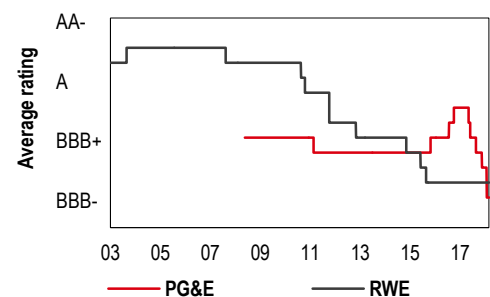
In this regard the three-notch downgrade of US utility PG&E due to its alleged role in California wild fires² (Figure 3) struck home³. And the credit deterioration from climate change may be quickening: German utility RWE was cut three notches in six years; PG&E in one (Figure 4).

Figure 3. Sharp selloff in PG&E's bonds



Source: HSBC, Bloomberg.

Figure 4. RWE and PG&E credit ratings



Source: HSBC, Bloomberg. N.B. Average of S&P and Moody's used for PG&E and average of S&P and Fitch for RWE. S&P's rating withdrawn on 15/2/18 for RWE

So we anticipate for 2019:

- ▶ USD140bn to USD180bn of green bond of supply
- ▶ USD40bn to USD70bn of social and sustainability bond supply
- ▶ Which means USD180bn to USD250bn of green, social and sustainability bond supply

If we are correct, by the end of 2019 the green bond market will be USD565bn in size (excluding Fannie Mae multi-family green MBS), and there would be USD107bn of social and sustainability bonds outstanding⁴.

Are 'real economy' green expenditures rising?

We anticipate USD140bn to USD180bn of green bond supply in 2019, between a modest rise and a slight fall, as we expect the market volatility that we saw in parts of 2018 to remain into 2019, and EM deleveraging too.

We do not anticipate rapid green bond supply growth in 2019 as we only expect a significant increase in green bond supply if green expenditures in the real economy increase sharply, and if more green financings to come to the market labelled as green bonds. Neither is certain.

We do not think that a green bond label in itself is powerful enough to prompt new green project: while the green bond label makes it less costly for investors to find bonds that fund green projects; we do not think this gain is sufficient to prompt new projects. So we think green bond supply will rise if 'real economy' green expenditure rises. And 'real economy' green expenditures is largely dependent on whether or not:

- ▶ governments commit new funds for green projects
- ▶ green technology falls in cost, making its cost effective to install without state subsidies
- ▶ the carbon price rises further; and new carbon price regimes are introduced

'Real economy' green capex growth is needed

² 'Judge to utility: explain any role in deadly California fire', The Washington Times, 28 November 2018.

³ 'PG&E bankruptcy talk sets stage for a showdown with California', Bloomberg, 5 January 2019.

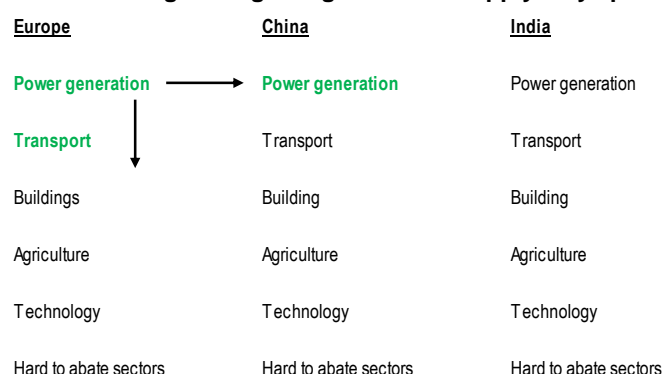
⁴ These calculations take into account bonds that mature in 2019 and take the midpoint of our issuance forecasts

Some real economy expenditure is happening, part of which can be financed in the green bond market. For example, the German auto sector intends to roll out a set of plug-in hybrids and EVs in order to meet EU 2020 and 2021 standards. Loans by these auto manufacturers to customers to buy these products could be parcelled up and sold as 'green on both sides' ABS⁵.

We also think that as climate change damages become larger, this will prompt a rise in green expenditures by governments and some firms, especially adaptation spending.

Over time, green expenditures should expand in two ways. Within Europe, climate change mitigation should expand beyond power and transport decarbonisation, into the building sector, agriculture and 'hard to abate' sectors (vertical progress in Figure 5). In addition, the power and transport sector decarbonisation seen in Europe, may spread to the US, China, India and the rest of the world (horizontal progress in Figure 5). Economist Paul Krugman⁶ remarked that most US greenhouse gas emissions are from electricity generation and transport; the US could cut power generation emissions by two-thirds by ending the use of coal and using more renewables; and transport emissions a comparable amount by raising EV usage.

Figure 5. Schematic of how greening and green bond supply may spread over time



Source: HSBC

The green bond market is funding EM green capex

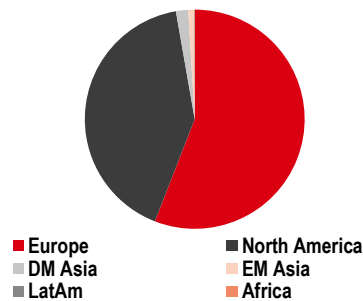
Already the green bond market is channelling finance from Europe and the US to the developing world. To check green bond fund flows, we examined ownership of USD53bn of green bonds, about 12% of the total outstanding⁷. Figure 7 shows the difference between the share of total issuance and share of total holdings. A positive number indicates a region holds more bonds than it issued. North America is a large net buyer: it accounts for 41% of holdings and 26% of issuance. Asia and Latin America are net issuers.

⁵ In a 'green on both sides' ABS, green loans are parcelled up and sold off in the form of an ABS security and the proceeds of the ABS sale are themselves wholly used to fund green projects.

⁶ 'Hope for a Green New Year', Paul Krugman, NY Times, 31 Dec 2018.

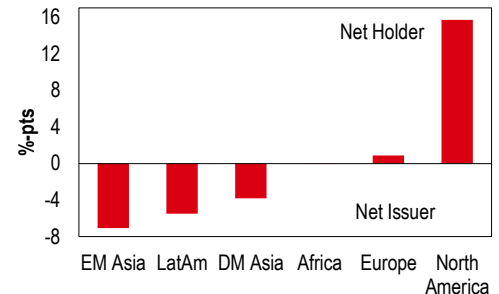
⁷ This data is taken from Bloomberg. Because European and US asset managers have quite high holding disclosure requirements, our data may exaggerate European and US holdings numbers versus reality.

Figure 6. Holders of green bonds by region



Source: HSBC calculations, Dealogic, Bloomberg

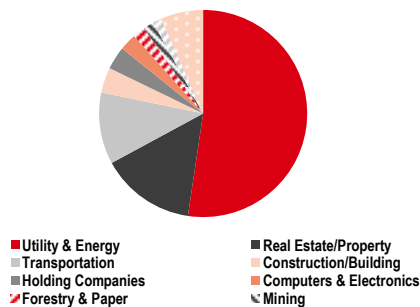
Figure 7. North America net holders, Asia net issuers



Source: HSBC calculations, Dealogic, Bloomberg

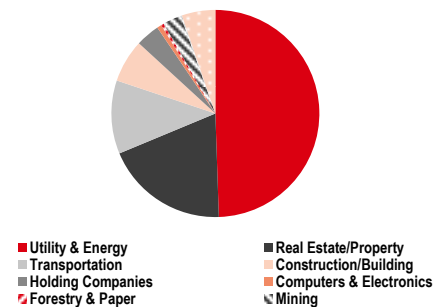
But while the green bond market is moving funds into EM green projects, it is perhaps less successful at financing or refinancing green expenditure in industry, to the extent that corporate green bonds are issued by utilities. Utility green bonds make up 52.3% of all corporate green bonds outstanding and 49.5% of all corporate green bonds issued in 2018 (Figures 8 and 9).

Figure 8. Breakdown of corporate bonds outstanding, end 2018



Source: HSBC calculations, Dealogic, Bloomberg

Figure 9. Breakdown of corporate bond issuance in 2018



Source: HSBC calculations, Dealogic, Bloomberg

Over time, we expect green bonds to be issued by a wider set of entities. UK telco Vodafone may issue its first green bond in 2019, with proceeds going to energy efficiency, renewable energy and green buildings⁸.

But that said, there is a shortage of green bond supply currently from:

- ▶ pure play firms; firms that are 'wholly green'
- ▶ industrial firms
- ▶ firms in 'hard-to-abate' sectors

Few pure play green bonds

Some pure play green firms have issued green bonds, such as wind turbine makers Vestas, Servion and Nordex. In time we expect more 'pure play' green bonds to be issued by firms working on EVs, batteries and energy efficiency as they grow in size.

Getting more green bond supply from industrial firms is difficult as: i) defining what is a green project for an industrial can be difficult, and ii) some green bonds issued by industrials (like Repsol) have been criticised on the grounds that the projects funded by the bond, and the issuing entity itself, were not green enough.

Taxonomy work is important too. For example, while Climate Bonds Initiative has produced several green bond taxonomies, laying out what activities are regarded as green in different economic sectors, it has not produced a taxonomy for industrials. This is a shame as sectors that the Energy

⁸ 'Vodafone green bond', Sustainalytics, 29 August 2018

Transitions Commission defines as 'hard-to-abate' (cement, steel, plastics, heavy road transport, aviation and shipping) account for around 10 Gt of annual emissions (30% of total global CO₂ emissions) and their emissions could rise to 16 Gt (60% of total global CO₂ emissions) by 2050.^{9 10 11}

One point of concern for the green bond market has been the fact that the main Chinese green bond taxonomy classified 'clean coal' or 'coal washing' projects, as green. However, Environmental Finance reports that China's new green bond catalogue will no longer classify these as green¹².

What could cut green bond supply

Three things in our view could slow green bond supply, namely i) green bond controversies around the issue of 'green wash', ii) excessive regulation and iii) green bond cannibalisation (where entities issue sustainability bonds instead of green).

Controversy averted

Innogy maintained the integrity of its green bond

German utility Innogy recently managed to maintain the integrity of its green bonds despite undergoing a demerger. Innogy issued the EUR850m 1.25% of October 2027 green bond in October 2017, with bond proceeds to be spent on wind farms. Then it was announced that the company would be broken up: Innogy would focus on electricity distribution, while its renewable energy business will go to RWE.

But how could the green bond fund renewable energy projects, if the Innogy green bond remained at Innogy, while the renewable energy business went to RWE? Happily, Innogy was able to change the bond's use of proceeds to smart meters and grid investments from renewable energy¹³.

Regulation is pending

The European Union is keen to regulate the green bond market. ICMA has done a good job so far in guiding the green bond market. Excessive EU regulation could become too onerous, with the result that this slows down legitimate green funding.

The EU is taking charge

Where has the EU process got to? The Commission published its Sustainable Finance Action Plan in March 2018. Subsequently, the Commission published legislative proposals to embed sustainable finance in the investment process, addressing four areas: establishing a sustainability taxonomy; formalising investor duties; imposing disclosure obligations for ESG factors; creating low carbon and carbon impact benchmarks^{10 11}.

According to the EU's proposals, to be considered green, an activity must:

- ▶ Support one of: climate change mitigation, adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling pollution prevention and control; protection of healthy ecosystems.
- ▶ Not 'significantly harm' any of the environmental objectives
- ▶ Comply with eight conventions of the ILO declaration on rights and principles at work
- ▶ Comply with additional specific technical screening criteria¹⁴

⁹ 'Mission possible; reaching net-zero carbon emissions from harder-to-abate sectors by mid-century', Energy Transitions Commission, November 2018; see also 'Decarbonisation of industrial sectors: the next frontier', McKinsey, June 2018.

¹⁰ 'A zero-carbon economy is both feasible and affordable', FT, 22 November 2018.

¹¹ 'Decarbonisation of industrial sectors: the next frontier', McKinsey and Company, June 2018.

¹² 'Clean coal axed from China's green bond guidelines', Environmental Finance, 11 December 2018.

¹³ 'Innogy to reallocate green bond proceeds from wind to grid', OffshoreWind.biz, 11 October 2018.

¹⁴ 'The EU's sustainable finance legislative proposals - what you need to know', Clifford Chance, June 2018.

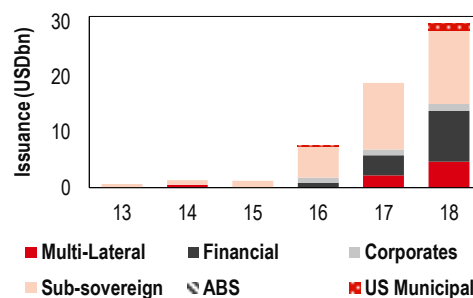
The Technical Expert Group on Sustainable Finance is developing the technical screening criteria, perhaps the most important element of the work. The Expert Group published a ‘taxonomy pack’ giving an update on its progress in December 2018.¹⁵

Social and sustainability bonds

Sustainability bonds up 87%

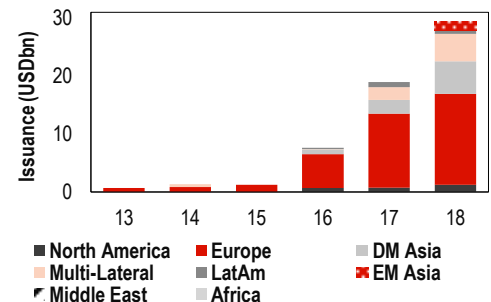
In 2018 we saw USD13.5bn of social bond issued, up 35% versus 2017, and USD16.8bn of sustainability bonds, up 87% versus 2017.

Figure 10. Social and sustainability bond supply by sector



Source: HSBC calculations, Dealogic

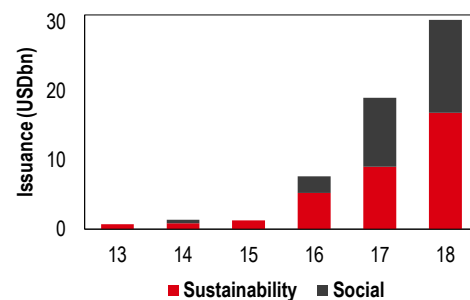
Figure 11. Social and sustainability bond supply by region



Source: HSBC calculations, Dealogic

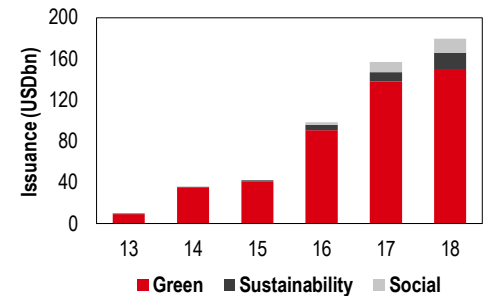
Green, social and sustainability bond supply excluding Fannie Mae multi-family MBS in 2018 was up 14.3% versus 2017 (Figure 14).

Figure 12. Social and sustainability bond supply by issuer type



Source: HSBC calculations, Dealogic, Bloomberg

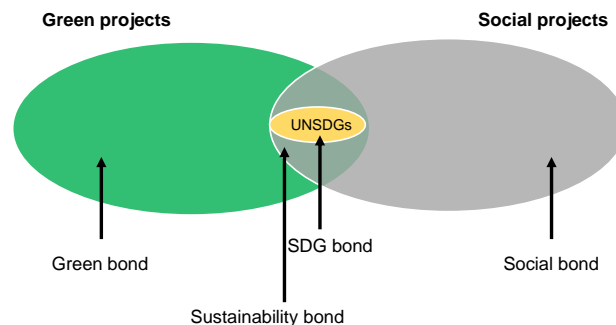
Figure 13. Green, social and sustainability bond supply



Source: HSBC calculations, Dealogic, Bloomberg

Social bonds fund social projects to assist one or more disadvantaged societal group. Sustainability bonds fund both green and social projects. Sustainable Development Goal (SDG) bonds – which we regard as a subset of sustainability bonds – aim to fund one or more of the SDGs; seventeen UN goals declared in 2015 that will last until at least 2030.

¹⁵ https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-feedback-and-workshops_en.pdf

Figure 14. Green bond funds only a small part of the market

Source: HSBC

We had argued in the past that social and sustainability bonds would remain the preserve of European issuers. We did not expect EM issuers would seek to draw attention to their social track records. But several EM social and sustainability bonds have now been issued. For example the Agricultural Development Bank of China (ADBCH) in November 2018 issued a three-year sustainability bond, a EUR500m 2021 floater¹⁶.

Reporting against the UN SDGs

Investors who own green, social and sustainability bonds can report on the benefits derived from their bond holdings, in two ways. They can: i) calculate the positive green impact that their bonds have in terms of tonnes of CO₂ emission reduction achieved per thousand euros of bond outstanding per year; ii) report on how the bond serves one or more of the UN SDGs.

Holders of green bonds tend to favour the former reporting method. Holders of social and sustainability bonds tend to favour the latter.

Several green bond issuers offer the tonnes of CO₂ metric: most estimate tonnes of CO₂ emission reduction per thousand dollars of bonds, for the year ahead¹⁷.

UN SDGs now key for 'use of proceeds' bonds

However, more and more green social and sustainability bonds, are seeing their use of proceeds linked to the UN SDGs. Many second-party opinion providers, when they analyse green, social and sustainability bonds, are stating which of the UN SDGs will be served, whether or not the issuer has stated it will fund specific SDGs¹⁸.

ICMA made this possible when it published the report 'Green and social bonds: a high level mapping to the sustainable development goals'¹⁹. There are ten project types that a green bond can fund and six project types a social bond can fund. ICMA set out which green project categories and which social project categories can serve the 17 SDGs (Figure 15).

¹⁶ This sustainability bond was accompanied by a second party opinion by CICERO. This was CICERO's first ever second party opinion on a sustainability bond. Significantly, CICERO chose to work with IISD (International Institute for Sustainable Development) on the social issues associated with this bond: IISD provides additional expertise on social issues.

¹⁷ KfW uses ZSW to calculate this metric for its green loans: tonnes of CO₂ emission reduction achieved per thousand euros of loan outstanding. Hannon Armstrong, a US energy efficiency firm, used Carbon Count to estimate this metric for its loans. Lions Head, South Pole and Affirmative IM together published a methodology on how to calculate a 'Carbon Yield' metric. Kommuninvest, a Nordic public authority funding body, produced a report on how to score green bonds and how to divide the benefits of a green bond project between debt and equity.

¹⁸ Second-Party Opinion: Irish Sovereign Green Bond, Sustainability, 31 August 2018.


















¹⁹ 'Green and social bonds: a high level mapping to the sustainable development goals (SDGs)', ICMA, June 2018.

Is the goal to combat climate change or attain the SDGs?

We see this as a positive step. However, it does reduce the need for bond issuers themselves to state which of the UN SDG their bond will serve. Now second party opinion providers like Sustainalytics are linking the proceeds of green, social and sustainability bonds to the UN SDGs, this may cut the incentive for the issuer to specify the SDGs served.

This practice of linking green, social and sustainability bonds to the UN SDGs may re-orient the market. Green bonds were created to fund climate change mitigation or adaption, and help fund the Paris Climate Agreement of 2015. But increasingly the market may serve the UN SDGs.

Figure 15. Green and Social mapping to UN SDGs

United Nations Sustainable Development Goal																
                																
GBP Category																
Clean transportation																
Climate change adaptation	✓	✓	✓													
Eco-efficient and/or circular economy adapted products, Production technologies & processes																
Energy efficiency																
Environmentally sustainable management of living natural resources and land use		✓														
Green buildings																
Pollution prevention and control			✓													
Renewable energy			✓													
Sustainable water and wastewater management																
Terrestrial and aquatic biodiversity conservation		✓														
SBP Category																
Access to essential services	✓	✓	✓	✓	✓											
Affordable housing	✓															
Socio-economic advancement and empowerment	✓	✓		✓	✓											
Affordable basic infrastructure			✓													
Food security		✓														
Employment generation																

Source: HSBC, ICMA, United Nations

Rise of the ESG investor

- ▶ Fixed income focus on ESG should intensify in 2019, in our view
- ▶ Investors can use ESG as a risk tool or in an active strategy
- ▶ Heightened ESG focus may boost pure play green bonds

ESG focus to intensify in 2019

Over the last eighteen months, fixed income investors have become increasingly focussed on ESG (environmental, social and governance) matters. Now we think the fixed income focus on ESG will intensify in 2019, not least as Moody's and S&P will introduce governance and ESG scores for some issuers.

In many respects green bonds impacted the fixed income market before fixed income investors began to focus on ESG matters. So fixed income investors currently are working out how they might integrate ESG analysis into their work, while at the same time working out how green bonds might integrate with any ESG strategy they run.

ESG can be passive or active

We see ESG first and foremost as an analytical method; effectively as a risk mitigant tool. Undertaking a formal and structured ESG analysis allows one to scope out for a broad array of current and future risks. Using ESG analysis may allow longer-term, more balanced and comprehensive valuations. It could uncover latent risks and identify issuers with negative or positive momentum.

But in fact ESG can be used in two ways, in a 'passive' risk mitigant tool, or used as part of an active strategy. In the former, ESG issues are included in a panoply of ten or more risk issues that need to be considered. In the latter, ESG matters are used as part of an active strategy.

ESG investing will impact green bond pricing, we think

The rise of ESG investing may impact green bond pricing somewhat, as green bond and ESG investors have slightly different approaches. A green bond investor focuses on a bond's use of proceeds. Green bonds are issued by both green and non-green companies. By contrast an ESG investor focusses on the issuer (not the issue) and will tend only to buy securities from issuers with high ESG scores.

In our view ESG investors are likely to:

- ▶ Prefer green bonds from pure play firms: firms operating wholly in environmental markets, as opposed to green bonds from industrial firms
- ▶ Prefer sustainability bonds to green; as ESG investors support social goals not just green
- ▶ Support the rise of SDG bonds, bonds where issuers declare how the bond's use of proceeds will aid one or more of the UN SDGs

Three impacts of new
ESG focus

Scoring ESG

Our sovereign scoring model is up and running

We use an ESG score for 77 sovereigns using only five different metrics, two for governance, two for social and one measuring them on environmental grounds. Each of these five metrics represents 20% of the score for each sovereign. We found a strong correlation with sovereign CDS spreads and the model appears to give a good indication of long-term performance.

Corporate ESG analysis – work in progress

However, we think that building a comprehensive ESG model for corporate credits would be more difficult than for sovereigns, as the same E and S metrics may not be relevant for all credits and their relative importance may differ too. This is why, for example, we only focused on water stress in the power and mining sectors.

In Figure 16 we set out key E, S and G factors that we think relevant for credits in seven different sectors of the economy. We focus on 4 environmental factors, 6 social and three governance. Factors that we regard as most relevant to the six sectors are presented in **bold**.

Governance

In many respects, we think that fixed income investors have always examined governance issues. But how comprehensive has this been? In our view, comprehensive governance analysis entails four tasks, to analyse:

1. Where the bond holders' interests lie in relation to equity
2. How a wider set of stakeholders are treated, including labour, community and customers
3. Determine if there is any risk of fraud
4. Long-term disrupting factors, like new regulation, social trends, or powerful technologies

In our view bond investors have always done the first task. They often may have attempted but sometimes struggled with tasks 3 or 4. Bond holders may or may not have undertaken task 2.

Governance work not new to bond investors

Bond holders are very focussed on their structural position in relation to equity, on where bonds rank in a firm's capital structure, and their rights in the event of bankruptcy.

Bond holders frequently vie with shareholders over whose interests are being taken into account. What is good for shareholders (share buy backs, debt funded acquisitions) can be negative for bond holders. For example, bond holders keep a beady eye on which sector is heavily focussed on share buy backs.

Fixed income investors need to focus on revenue recognition issues too. Leverage in tandem with aggressive accounting and a market slowdown, can leave companies facing difficulties.

It is often claimed that bond holders do not undertake engagement. But bond investors frequently try to interact with bond issuers. And if matters go awry, bond holders will often assemble committees to engage bond issuers.

Green bonds can help with engagement

Green bonds can act as a good engagement tool between the issuer and the investor, as the issue of why a green bond is being issued, and the target of the bond proceeds, can be discussed.

Bond holders try to assess the likely impact of near-term disruptors, be they new technology, changing consumer tastes, or demographic and migration trends. Some 'mid-term disruptors' we had identified for eight sectors quickly became live credit issues, like electric vehicles.

A key governance metric is the presence or absence of independent executives on boards. We prefer boards to have a high proportion of independent directors, as opposed to serving executives and representatives from shareholders. We have stated before that "Independent

directors are regarded as a key element of good corporate governance...Independent directors can ensure that the interests of competing groups are balanced...challenge executives and reduce the likelihood of 'group-think'.

Figure 16. Key ESG factors by Industrial Sector

Autos	Basic Resources	Healthcare	Industrials	Oil & Gas	Telecoms	Utilities
Environmental						
CO ₂ emissions	CO ₂ emissions	CO ₂ emissions	CO ₂ emissions	CO ₂ emissions	CO ₂ emissions	CO ₂ emissions
Local air emissions/spills	Local air emissions/spills	Local air emissions/spills	Local air emissions/spills	Local air emissions/spills	Local air emissions/spills	Local air emissions/spills
Water usage	Water usage	Water usage	Water usage	Water usage	Water usage	Water usage
Supply chain resource use	Supply chain resource use	Supply chain resource use	Supply chain resource use	Supply chain resource use	Supply chain resource use	Supply chain resource use
Social						
Labour rights/safety	Labour rights/safety	Labour rights/safety	Labour rights/safety	Labour rights/safety	Labour rights/safety	Labour rights/safety
Collusion/product pricing	Collusion/product pricing	Collusion/product pricing	Collusion/product pricing	Collusion/product pricing	Collusion/product pricing	Collusion/product pricing
Community rights/safety	Community rights/safety	Community rights/safety	Community rights/safety	Community rights/safety	Community rights/safety	Community rights/safety
Client data privacy	Client data privacy	Client data privacy	Client data privacy	Client data privacy	Client data privacy	Client data privacy
Client addiction	Client addiction	Client addiction	Client addiction	Client addiction	Client addiction	Client addiction
Selling to minors	Selling to minors	Selling to minors	Selling to minors	Selling to minors	Selling to minors	Selling to minors
Governance						
Board structure	Board structure	Board structure	Board structure	Board structure	Board structure	Board structure
Remuneration	Remuneration	Remuneration	Remuneration	Remuneration	Remuneration	Remuneration
Possible corruption	Possible corruption	Possible corruption	Possible corruption	Possible corruption	Possible corruption	Possible corruption

Source: HSBC

Green bonds or 'ESG integration'?

We see two differences between a green bond strategy and an 'ESG integration' strategy.

- ▶ Green bond investors focus on the bond issue, and how the bond's use of proceeds are spent; while the ESG approach focuses on the issuer, the entity issuing the bond
- ▶ According to the Green Bond Principles, firms do not need to be green to issue green bonds; but an ESG investor would seldom buy a security from a firm with a poor ESG score

ESG investors still buy green bonds!

Importantly, both strategies involve buying green bonds. Investors that choose not to create green bond funds, but instead to undertake ESG integration, are still buying green bonds. They are simply placing these in their non-green bond funds, in order to achieve one element of ESG integration.

We prefer the green bond method

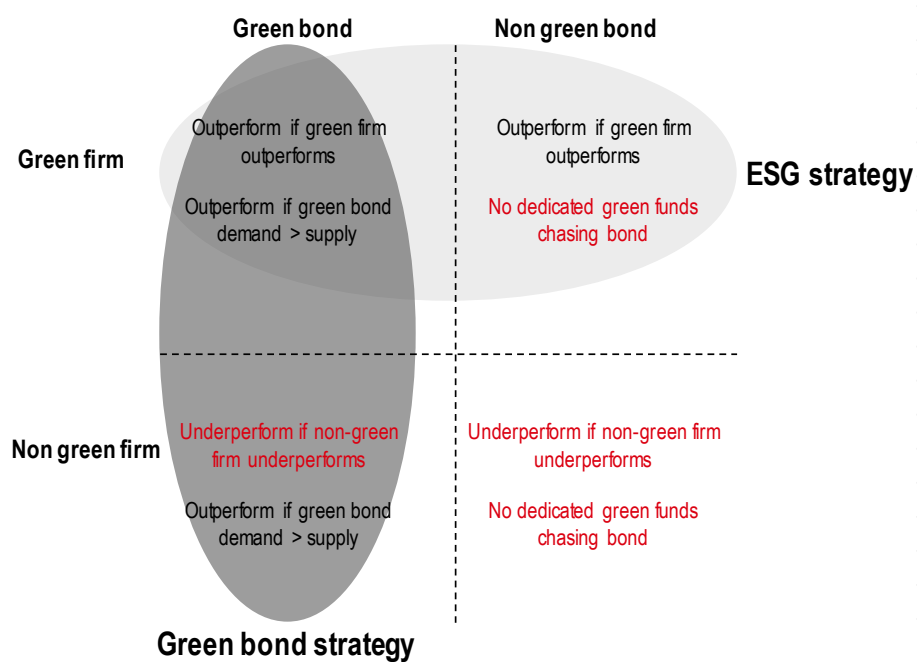
We prefer the green bond approach over the ESG approach. The key advantage of a green bond is that the bond investor knows the bond's proceeds are being spent on green projects; and the eligible green projects or project types to be funded. If one simply buys bonds from firms that score well against ESG criteria, this advantage is lost.

Also if you only buy bonds from firms with a high ESG score, you may choose not to buy green bonds from industrial firms, or 'hard to abate' sectors. Yet these latter sectors may be the sectors where green investments are most needed and beneficial.

In any case, currently the market lacks a clear definition of what constitutes a good ESG score. So in moving from a green bond to an ESG approach, one may give up something comprehensible – a knowledge that specific green projects are being funded, for something fairly abstract – a view that an issuer takes ESG risks seriously. We are not convinced this is a great trade.

Nevertheless, even though we prefer the green bond approach, we think the fixed income focus on ESG will intensify in 2019, and bond investors need to be attuned to these changes.

Figure 17. Reasons why a bond might out-perform or under-perform



Source: HSBC

Bond supply in 2018

- ▶ USD149.2bn of green bonds issued in 2018, up 8.0% versus 2017...
- ▶ ...and at the lower end of our USD140bn to USD180bn target
- ▶ USD30.3bn of social and sustainability bonds in 2018, up 60% YoY

Green bonds

Figure 20. Annual green bond issuance, by issuer

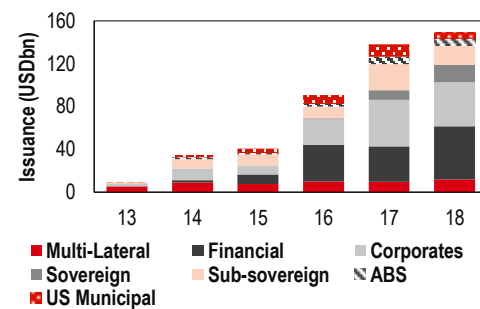


Figure 21. Annual green bond issuance, by region

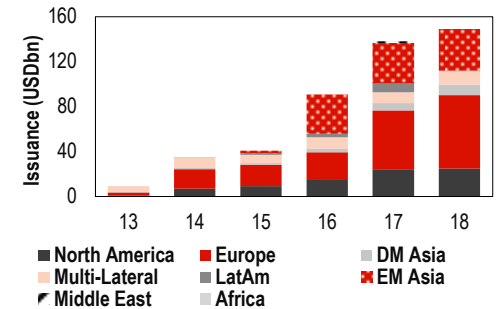


Figure 22. Quarterly green bond issuance, by issuer

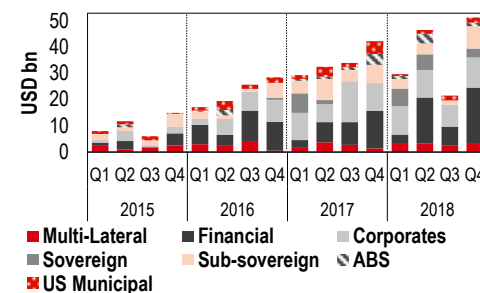


Figure 23. Quarterly green bond issuance, by region

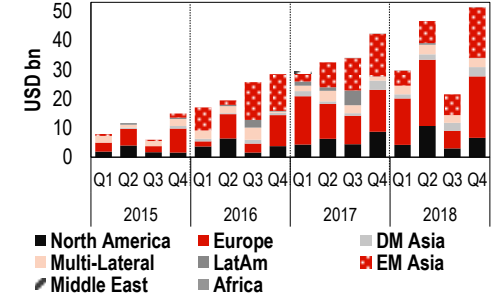
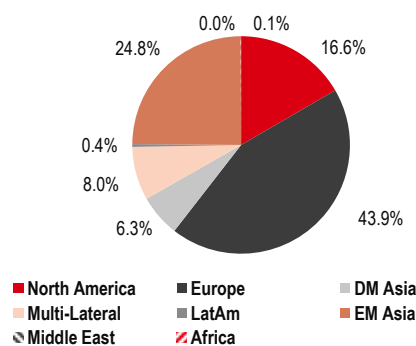
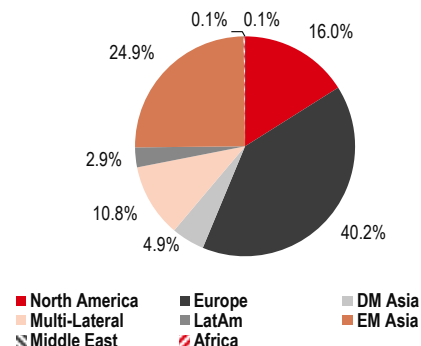
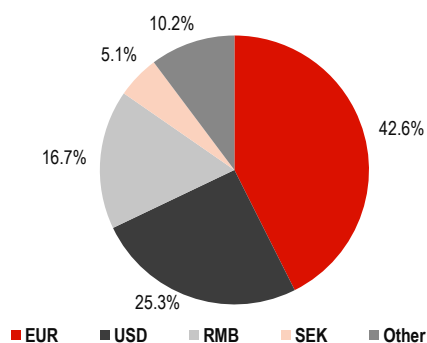


Figure 24. Green bonds issued in 2018, by region

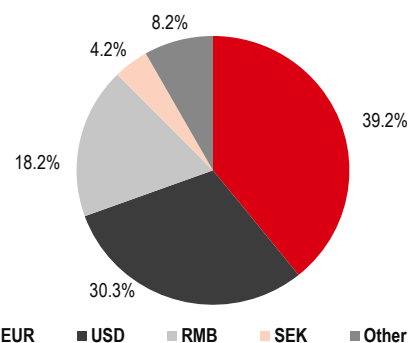
Source: HSBC calculations, Dealogic, Bloomberg

Figure 25. Green bonds outstanding, by region

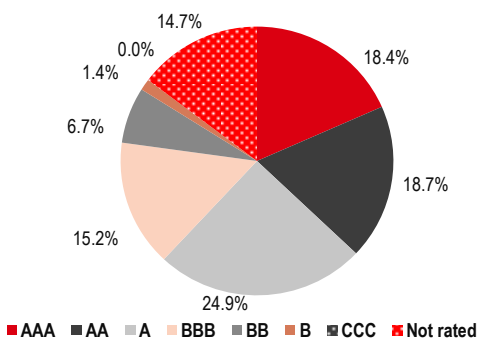
Source: HSBC calculations, Dealogic, Bloomberg

Figure 26. Green bonds issued in 2018, by currency

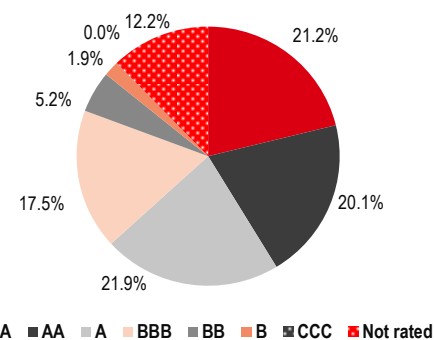
Source: HSBC calculations, Dealogic, Bloomberg

Figure 27. Green bonds outstanding, by currency

Source: HSBC calculations, Dealogic, Bloomberg

Figure 28. Green bonds issued in 2018, by rating

Source: HSBC calculations, Dealogic, Bloomberg

Figure 29. Green bonds outstanding, by rating

Source: HSBC calculations, Dealogic, Bloomberg

Fannie Mae MBS green

Fannie Mae's multifamily green MBS program issued USD20.1bn in 2018, down 28% on USD27.7bn in 2017. Multi-family occupancy entails a large block that is owned by a company, where the flats are rented out separately. The Fannie Mae multi-family green programme provides mortgage financing to owners of apartment buildings and co-operatives to undertake energy and water efficiency improvements in their properties. These improvements are meant to reduce energy consumption by more than 25% compared to the baseline of existing properties.

The multifamily green bond framework received a 'light green' second party opinion from CICERO; green bond proceeds can fund fossil fuel improvements, such as improving the energy efficiency of boiler, which results in short-term CO₂ emission cuts but is no long-term solution.

We exclude the Fannie Mae green MBS data from our green bond data as: i) Fannie Mae tends to provide its data quite late ii) Fannie Mae's extends funds to clients to help them buy buildings as well as to make the buildings green – which suggests the numbers may be somewhat inflated iii) we have little visibility on Fannie Mae numbers going forwards.

Chinese green bonds

Chinese green bonds can be issued onshore or offshore format, and in local currency (Renminbi) or hard. USD5.7bn of offshore hard currency Chinese green bonds were issued in 2018, 19% of all Chinese green bonds issued (Figure 30). This is greater than normal: offshore hard currency green bonds make up 15% of Chinese green bonds outstanding (Figure 31).

Figure 30. China green bond supply 2018

	Offshore	Onshore
USD/EUR	23 bonds USD5.7bn	0 bonds
RMB	2 bond CNH1.4bn USD215mn equivalent	73 bonds CNY167.2bn equivalent USD24.6bn equivalent

Source: HSBC calculations, Dealogic

Figure 31. China green bonds outstanding

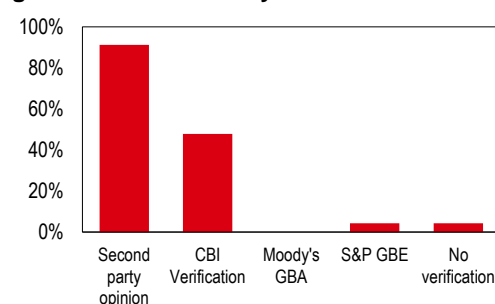
	Offshore	Onshore
USD/EUR	42 bonds USD11.7bn	0 bonds
RMB	3 bonds CNH2.4bn USD365mn equivalent	214 bonds CNY531.5bn USD78.9bn equivalent

Source: HSBC calculations, Dealogic

**Chinese green bond
verification is good**

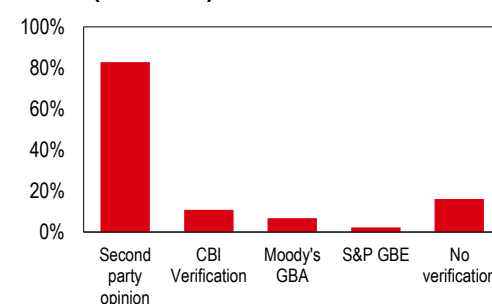
Chinese green bonds verification standards are high. We are impressed that Chinese green bonds are more likely than average to be accompanied by: i) a CBI third party verification ii) an S&P green bond evaluation (Figures 32, 33)

Figure 32. All outstanding hard currency green bonds issued by Chinese firms



Source: HSBC calculations, Dealogic, Bloomberg

Figure 33. All outstanding large* green bonds (ex. China)



Source: HSBC calculations, Dealogic, Bloomberg
*Bonds which are ≥USD500m (and equivalent)

Social and sustainability bonds

Figure 34. Annual S&S bond issuance, by issuer

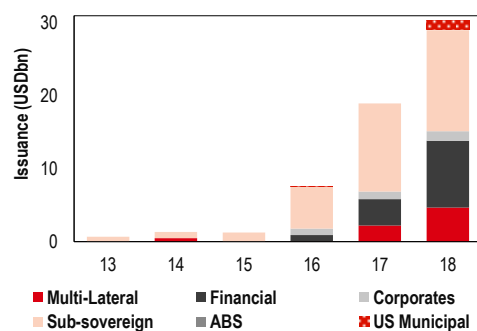


Figure 35. Annual S&S bond issuance, by region

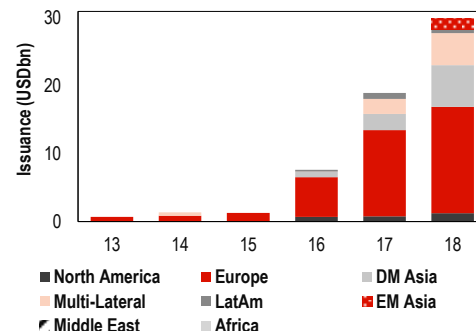


Figure 36. Quarterly S&S bond issuance, by issuer

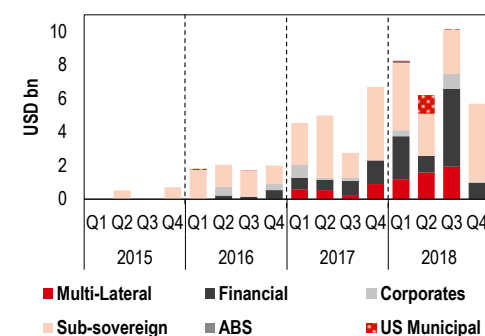


Figure 37. Quarterly S&S bond issuance, by region

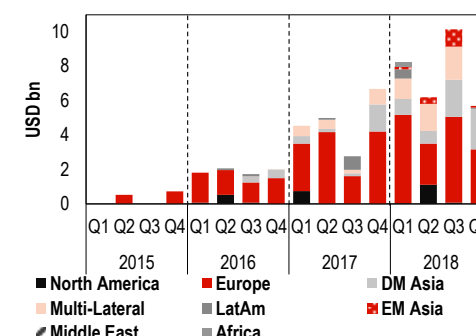


Figure 38. S&S issued in 2018, by issuer type

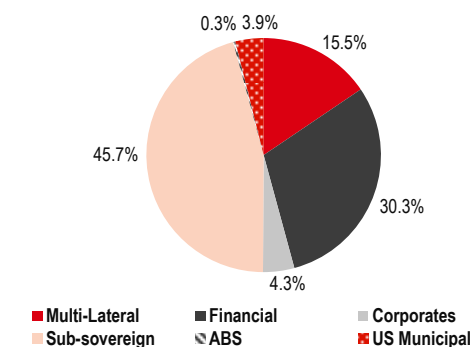
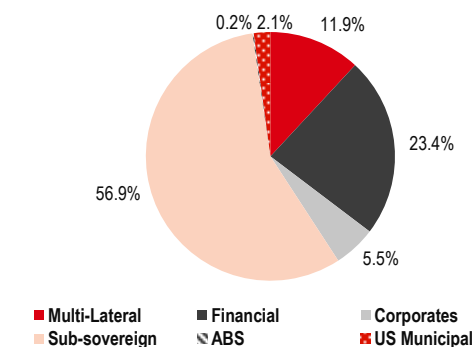


Figure 39. S&S bonds outstanding at end 2018, by issuer type



Appendices

A: EUR-denom. (≥EUR500m) green bonds

ISIN	Issuer Name	Ticker	Pricing Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Duration	Rating	2nd party opinion?	CBI cert.	Moody's GBA	S&P GBE
XS1244060486	ABN AMRO	ABNANV	02/06/2015	0.75	09/06/2020	EUR	500	NL	Financial	0.09	1.41	A1/A	Oekom	Yes	No	No
XS1422841202	ABN AMRO	ABNANV	23/05/2016	0.63	31/05/2022	EUR	500	NL	Financial	0.36	3.34	A1/A	Oekom	Yes	No	No
XS1808739459	ABN AMRO	ABNANV	11/04/2018	0.88	22/04/2025	EUR	750	NL	Financial	0.85	6.05	A1/A	Oekom	Yes	No	No
XS1799545329	ACS Servicios	ACSSCE	12/04/2018	1.88	20/04/2026	EUR	750	ES	Corporates	3.03	6.56	-/BBB	Vigeo Eiris	No	No	E1
ES0200002022	Adif Alta Velocidad	ADIFAL	28/06/2017	0.80	05/07/2023	EUR	600	ES	Corporates	0.65	4.38	Baa2/-	Cicero - no shading	No	No	No
ES0200002030	Adif Alta Velocidad	ADIFAL	23/04/2018	1.25	04/05/2026	EUR	600	ES	Corporates	1.33	6.89	Baa2/-	Cicero - dark	No	No	No
XS1111084718	Agence Francaise de Develop.	AGFRNC	10/09/2014	1.38	17/09/2024	EUR	1,000	FR	Sub-sovereign	0.36	5.48	-/AA	Vigeo Eiris	No	No	No
XS1901209376	Agri. Develop. Bank of China	ADBCH	20/11/2018	0.16	26/11/2021	EUR	500	CN	Sub-sovereign	0.19	0.13	-/A+	Cicero - no shading	No	No	No
XS1892240281	ALD	EDPPL	04/10/2018	1.88	13/10/2025	EUR	600	PT	Financial	1.57	3.62	Baa3/BBB-	Vigeo Eiris	Yes	No	No
XS1854893291	Asian Development Bank	ASIA	04/07/2018	0.35	16/07/2025	EUR	600	SNAT	Multi-Lateral	0.27	6.43	Aaa/AAA	Cicero - no shading	No	No	No
XS1437623355	Bank of China	BCHINA	05/07/2016	0.75	12/07/2021	EUR	500	CN	Financial	0.77	2.47	A1/-	EY	No	No	No
XS1720540217	Bank of China	BCHINA	15/11/2017	0.15	22/11/2020	EUR	700	CN	Financial	0.37	0.12	A1/A	EY	Yes	No	No
XS1716820029	Barclays	BACR	06/11/2017	0.63	14/11/2023	EUR	500	GB	Financial	1.78	3.73	Baa3/BBB	The Carbon Trust	Yes	No	No
XS1820037270	BBVA	BBVASM	03/05/2018	1.38	14/05/2025	EUR	1,000	ES	Financial	1.97	5.94	Baa2/BBB+	DNV-GL	No	No	No
DE000BHY0GP5	Berlin Hyp	BHH	07/04/2015	0.13	05/05/2022	EUR	500	DE	Financial	-0.03	3.31	Aaa/-	Oekom	No	No	No
DE000BHY0GU5	Berlin Hyp	BHH	19/09/2016	0.50	26/09/2023	EUR	500	DE	Financial	0.71	4.63	A2/-	Oekom	No	No	No
DE000BHY0GH2	Berlin Hyp	BHH	07/06/2017	0.13	23/10/2023	EUR	500	DE	Financial	0.18	4.77	Aaa/-	Oekom	No	No	No
DE000BHY0GC3	Berlin Hyp	ALDFP	12/10/2018	1.25	11/10/2022	EUR	500	FR	Financial	0.46	6.63	-/BBB	Oekom	No	No	No
DE000BHY0GS9	Berlin Hyp	BHH	17/10/2017	1.13	25/10/2027	EUR	500	DE	Financial	1.22	8.30	A2/-	Oekom	No	No	No
DE000BHY0GB5	Berlin Hyp	BHH	10/04/2018	1.50	18/04/2028	EUR	500	DE	Financial	1.36	8.53	A2/-	Oekom	No	No	No
XS1527753187	BNP Paribas	BNP	24/11/2016	0.50	01/06/2022	EUR	500	FR	Financial	0.44	3.35	Aa3/A	Oekom	No	No	No
XS1808338542	BNP Paribas	BNP	10/04/2018	1.00	17/04/2024	EUR	500	FR	Financial	1.70	5.03	Baa1/A-	Oekom	No	No	No
XS1242327168	BRF	BRFSBZ	29/05/2015	2.75	03/06/2022	EUR	500	BR	Corporates	3.77	3.12	Ba2/BB	Sustainalytics	No	No	No
XS1725553066	CGNPC International	CHGDNU	04/12/2017	1.63	11/12/2024	EUR	500	CN	Corporates	1.91	5.58	A3/-	Deloitte	No	No	No
XS1867412006	CGNPC International	CHGDNU	04/09/2018	2.00	11/09/2025	EUR	500	CN	Corporates	2.00	6.15	A3/-	No	No	No	No
XS1877506367	China Construction Bank	CCB	17/09/2018	0.28	24/09/2021	EUR	500	CN	Financial	0.29	0.21	A1/-	EY	No	No	No
XS1711173218	China Development Bank	SDBC	09/11/2017	0.38	16/11/2021	EUR	1,000	CN	Sub-sovereign	0.46	2.83	A1/-	EY	Yes	No	No
DE000CZ40NG4	Commerzbank	BHH	16/10/2018	0.63	22/10/2025	EUR	500	DE	Financial	1.56	4.59	Aaa/-	Sustainalytics	No	No	No
XS1502438820	Cooperatieve Rabobank	RABOBK	04/10/2016	0.13	11/10/2021	EUR	500	NL	Financial	0.17	2.75	Aa3/A+	Sustainalytics	No	No	No
FR0013385515	Credit Agricole	ACAFP	28/11/2018	0.75	05/12/2023	EUR	1000	FR	Financial	0.78	4.79	A1/A+	Vigeo Eiris	No	No	No
DE000DHY4887	Deutsche Hypothekenbank	DHY	16/11/2017	0.13	23/11/2023	EUR	500	DE	Financial	0.20	4.85	Aa1/-	Oekom	No	No	No
DE000DHY4994	Deutsche Hypothekenbank	DHY	03/09/2018	0.25	10/12/2024	EUR	500	DE	Financial	0.35	5.86	Aa1/-	Oekom	No	No	No
DE000GRN0008	Deutsche Kreditbank	DKRED	01/06/2016	0.63	08/06/2021	EUR	500	DE	Financial	0.49	2.38	A2/-	Oekom	Yes	No	No
DE000GRN0016	Deutsche Kreditbank	DKRED	19/09/2017	0.75	26/09/2024	EUR	500	DE	Financial	0.84	5.56	A2/-	Oekom	No	No	No
XS1839888754	DNB Boligkreditt	DNBNO	12/06/2018	0.63	19/06/2025	EUR	1,500	NO	Financial	0.56	6.28	Aaa/AAA	Sustainalytics	Yes	No	No
FR0011637586	EDF	EDF	20/11/2013	2.25	27/04/2021	EUR	1,400	FR	Corporates	0.21	2.23	A3/A-	Vigeo Eiris	No	No	No
FR0013213295	EDF	EDF	06/10/2016	1.00	13/10/2026	EUR	1,750	FR	Corporates	1.41	7.38	A3/A-	Vigeo Eiris	No	No	No
XS1893621026	EDP	SOGRPR	09/10/2018	1.13	22/10/2028	EUR	1,750	FR	Corporates	1.81	6.27	Aa2/-	Sustainalytics	No	No	No
XS1901055472	EnBW	ENBW	24/10/2018	1.88	31/10/2033	EUR	500	DE	Corporates	1.84	12.61	A3/A-	Oekom	Yes	No	No
XS1550149204	Enel	ENELIM	09/01/2017	1.00	16/09/2024	EUR	1,250	IT	Corporates	1.23	5.47	Baa2/BBB+	Vigeo Eiris	No	No	No
XS1750986744	Enel	ENELIM	09/01/2018	1.13	16/09/2026	EUR	1,250	IT	Corporates	1.87	7.24	Baa2/BBB+	Vigeo Eiris	No	No	No
FR0011911239	Engie	ENGIFP	12/05/2014	1.38	19/05/2020	EUR	1,200	FR	Corporates	0.01	1.34	A2/A-	Vigeo Eiris	No	No	No
FR0011911247	Engie	ENGIFP	12/05/2014	2.38	19/05/2026	EUR	1,300	FR	Corporates	1.12	6.70	A2/A-	Vigeo Eiris	No	No	No
FR0013245859	Engie	ENGIFP	15/03/2017	0.88	27/03/2024	EUR	700	FR	Corporates	0.67	4.82	A2/A-	Vigeo Eiris	No	No	No
FR0013245867	Engie	ENGIFP	15/03/2017	1.50	27/03/2028	EUR	800	FR	Corporates	1.22	8.27	A2/A-	Vigeo Eiris	No	No	No
FR0013284247	Engie	ENGIFP	19/09/2017	0.38	28/02/2023	EUR	500	FR	Corporates	0.46	4.08	A2/A-	Vigeo Eiris	No	No	No
FR0013284254	Engie	ENGIFP	19/09/2017	1.38	28/02/2029	EUR	750	FR	Corporates	1.46	9.29	A2/A-	Vigeo Eiris	No	No	No
FR0013310505	Engie	ENGIFP	10/01/2018	1.38	Perp	EUR	1,000	FR	Corporates	1.48	3.98	Baa1/BBB	Vigeo Eiris	No	No	No
XS1919899960	Eurofima	EUROF	03/12/2018	0.25	09/02/2024	EUR	500	SNAT	Multi-Lateral	0.25	5.05	Aa2e/-	Sustainalytics	No	No	No
LU0953782009	European Investment Bank	EIB	11/07/2013	1.38	15/11/2019	EUR	3,000	SNAT	Multi-Lateral	-0.45	0.85	Aaa/AAA	No	No	No	No
XS1107718279	European Investment Bank	EIB	03/09/2014	1.25	13/11/2026	EUR	1,800	SNAT	Multi-Lateral	0.37	7.49	Aaa/AAA	No	No	No	No

A: EUR-denom. (≥EUR500m) green bonds

ISIN	Issuer Name	Ticker	Pricing Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Duration	Rating	2nd party opinion?	CBI cert.	Moody's GBA	S&P GBE
XS1280834992	European Investment Bank	EIB	20/08/2015	0.50	15/11/2023	EUR	1,900	SNAT	Multi-Lateral	-0.03	4.80	Aaa/-	No	No	No	No
XS1280834992	European Investment Bank	EIB	05/01/2016	0.50	15/11/2023	EUR	1,900	SNAT	Multi-Lateral	-0.03	4.80	Aaa/-	No	No	No	No
XS1500338618	European Investment Bank	EIB	28/09/2016	0.50	13/11/2037	EUR	1,250	SNAT	Multi-Lateral	1.26	17.73	Aaa/AAA	No	No	No	No
XS1641457277	European Investment Bank	EIB	28/06/2017	1.50	15/11/2047	EUR	1,250	SNAT	Multi-Lateral	1.46	23.29	Aaa/AAA	No	No	No	No
XS1828046570	European Investment Bank	EIB	22/05/2018	1.13	15/11/2032	EUR	500	SNAT	Multi-Lateral	1.05	12.76	Aaa/-	No	No	No	No
XS1732400319	Ferrovie dello Stato Italiane	FERROV	30/11/2017	0.88	07/12/2023	EUR	600	IT	Corporates	2.18	4.72	-/BBB	Sustainalytics	No	No	No
XS1219963672	FMO	NEDFIN	13/04/2015	0.13	20/04/2022	EUR	500	NL	Sub-sovereign	-0.22	3.28	-/AAA	Sustainalytics	No	No	No
FR0013170834	Foncières des Régions	COVFP	09/05/2016	1.88	20/05/2026	EUR	500	FR	Corporates	2.14	6.72	-/BBB	No	No	No	No
FR0013296373	French Development Agency	AGFRNC	08/11/2017	0.13	15/11/2023	EUR	750	FR	Sub-sovereign	0.22	4.83	-/AA	Cicero - medium	No	No	No
FR0013365376	French Development Agency	AGFRNC	10/09/2018	0.50	31/10/2025	EUR	500	FR	Sub-sovereign	0.52	6.67	-/AA	Cicero - medium	No	No	No
XS1718393439	Gas Natural Fenosa	NTGYSM	08/11/2017	0.88	15/05/2025	EUR	800	ES	Corporates	1.41	6.08	Baa2/BBB	Vigeo Eiris	No	No	No
XS1886399093	Getlink	GETFP	26/09/2018	3.63	01/10/2023	EUR	550	FR	Corporates	4.15	4.29	-/BB	DNV-GL	No	No	No
XS1309695341	Green Storm	STORM	08/06/2016	0.00	22/10/2052	EUR	389	NL	ABS	0.22	3.15	Aaa/AAA	Sustainalytics	Yes	GB1	No
XS1609025744	Green Storm	STORM	19/05/2017	0.28	22/04/2064	EUR	550	NL	ABS	0.67	3.31	Aaa/AAA	Sustainalytics	Yes	GB1	No
XS1815379067	Green Storm	STORM	18/05/2018	0.28	22/05/2065	EUR	550	NL	ABS	0.62	4.40	Aaa/AAA	Sustainalytics	Yes	GB1	No
FR0013239985	Groupe Caisse des Dépôts	CDCEPS	22/02/2017	0.20	01/03/2022	EUR	500	FR	Sub-sovereign	-0.23	3.14	Aa2/AA	Vigeo Eiris	No	No	No
XS1084043451	Hera Spa	HERIM	26/06/2014	2.38	04/07/2024	EUR	500	IT	Corporates	1.33	5.09	Baa1/BBB	DNV-GL	No	No	No
XS1917601582	HSBC	HSBC	27/11/2018	1.50	04/12/2024	EUR	1250	GB	Financial	1.52	4.68	A2/A	Cicero - no shading	No	No	No
FR0013064755	HSBC France	HSBC	26/11/2015	0.63	03/12/2020	EUR	500	FR	Financial	0.13	1.89	Aa3/AA-	Cicero - dark	No	No	No
XS1057055060	Iberdrola	IBESM	08/04/2014	2.50	24/10/2022	EUR	750	ES	Corporates	0.44	3.64	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1398476793	Iberdrola	IBESM	14/04/2016	1.13	21/04/2026	EUR	1,000	ES	Corporates	1.27	6.89	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1490726590	Iberdrola	IBESM	08/09/2016	0.38	15/09/2025	EUR	700	ES	Corporates	1.15	6.53	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1527758145	Iberdrola	IBESM	24/11/2016	1.00	07/03/2024	EUR	750	ES	Corporates	0.79	4.74	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1575444622	Iberdrola	IBESM	28/02/2017	1.00	07/03/2025	EUR	1,000	ES	Corporates	1.06	5.89	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1682538183	Iberdrola	IBESM	06/09/2017	1.25	13/09/2027	EUR	750	ES	Corporates	1.52	8.12	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1721244371	Iberdrola	IBESM	14/11/2017	1.88	Perp	EUR	1,000	ES	Corporates	1.94	4.03	Baa3/BBB-	Vigeo Eiris	No	No	No
XS1797138960	Iberdrola	IBESM	19/03/2018	2.63	Perp	EUR	700	ES	Corporates	2.39	4.67	Baa3/BBB-	Vigeo Eiris	No	No	No
XS1847692636	Iberdrola	IBESM	21/06/2018	1.25	28/10/2026	EUR	750	ES	Corporates	1.38	7.36	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1912495691	IBRD	IBRD	13/11/2018	0.63	22/11/2027	EUR	600	SNAT	Multi-Lateral	0.57	8.60	Aaa/-	Cicero - no shading	No	No	No
FR0013281755	Icade SA	ICADFP	04/09/2017	1.50	13/09/2027	EUR	600	FR	Corporates	2.18	7.98	-/BBB+	Sustainalytics	No	No	No
XS1691909334	ICBC	ICBCAS	28/09/2017	0.23	12/10/2020	EUR	1,100	CN	Financial	0.49	0.01	A1/-	Cicero - dark	Yes	No	No
XS1831163396	ICBC	ICBCAS	05/06/2018	0.18	14/06/2021	EUR	500	CN	Financial	0.37	0.18	A1/-	Cicero - dark	Yes	No	No
XS1909186451	ING	INTNED	08/11/2018	2.50	15/11/2030	EUR	1500	NL	Financial	2.67	10.08	Baa1/A-	Oekom	Yes	No	No
XS1324217733	ING Bank	INTNED	17/11/2015	0.75	24/11/2020	EUR	500	NL	Financial	0.15	1.86	Aa3/A+	Oekom	No	No	No
XS1702729275	Innogy	IGYGY	12/10/2017	1.25	19/10/2027	EUR	850	DE	Corporates	1.57	8.21	Baa2/BBB	Sustainalytics	No	No	No
XS1636000561	Intesa Sanpaolo	ISPIM	16/06/2017	0.88	27/06/2022	EUR	500	IT	Financial	1.86	3.35	Baa1/BBB	Vigeo Eiris	No	No	No
XS1704789590	IREN SpA	IREIM	17/10/2017	1.50	24/10/2027	EUR	500	IT	Corporates	2.63	8.04	-/-	DNV-GL	No	No	No
XS1881533563	IREN SpA	IREIM	12/09/2018	1.95	19/09/2025	EUR	500	IT	Corporates	2.31	6.16	-/-	DNV-GL	No	No	No
BE0002602804	KBC Group	KBCBB	20/06/2018	0.88	27/06/2023	EUR	500	BE	Financial	1.07	4.33	Baa1/A-	Cicero - dark	Yes	No	No
XS1087815483	KfW	KFW	15/07/2014	0.38	22/07/2019	EUR	1,500	DE	Sub-sovereign	-0.47	0.53	Aaa/AAA	Cicero - dark	No	No	No
XS1311459694	KfW	KFW	20/10/2015	0.13	27/10/2020	EUR	1,500	DE	Sub-sovereign	-0.44	1.80	Aaa/AAA	Cicero - dark	No	No	No
XS1414146669	KfW	KFW	12/05/2016	0.05	30/05/2024	EUR	1,000	DE	Sub-sovereign	0.02	5.38	Aaa/AAA	Cicero - dark	No	No	No
XS1612940558	KfW	KFW	09/05/2017	0.25	30/06/2025	EUR	2,000	DE	Sub-sovereign	0.17	6.41	Aaa/AAA	Cicero - dark	No	No	No
XS1897340854	KfW	KFW	17/10/2018	0.50	28/09/2026	EUR	1,000	DE	Sub-sovereign	0.35	7.56	Aaa/AAA	Cicero - dark	No	No	No
BE0000346552	Kingdom of Belgium	BGB	26/02/2018	1.25	22/04/2033	EUR	4,500	BE	Sovereign	1.20	12.88	-/-	Sustainalytics	No	No	No
XS1622415674	Kommunekredit	KOMMUN	23/05/2017	0.75	18/05/2027	EUR	500	DK	Sub-sovereign	0.61	8.04	Aaa/AA+	Cicero - no shading	No	No	No
XS1851226891	Kommunekredit	KOMMUN	27/06/2018	0.75	05/07/2028	EUR	750	DK	Sub-sovereign	0.72	9.09	Aaa/AA+	Cicero - no shading	No	No	No
FR0013384567	La Poste	FRPTT	23/11/2018	1.45	30/11/2028	EUR	500	FR	Sub-sovereign	1.43	9.14	-/A	Sustainalytics	No	No	No
DE000LB1M214	LBBW	LBBW	05/12/2017	0.20	13/12/2021	EUR	750	DE	Financial	0.31	2.91	A2/-	Oekom	Yes	No	No
DE000LB1P9C8	LBBW	LBBW	18/06/2018	0.13	27/06/2023	EUR	500	DE	Financial	0.15	4.45	Aaa/-	Oekom	No	No	No
XS1758752635	Mitsubishi UFJ	MUFG	19/01/2018	0.68	26/01/2023	EUR	500	JP	Financial	0.81	3.95	A1/A-	Sustainalytics	No	No	No

A: EUR-denom. (≥EUR500m) green bonds

ISIN	Issuer Name	Ticker	Pricing Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Duration	Rating	2nd party opinion?	CBI cert.	Moody's GBA	S&P GBE
XS1691909920	Mizuho	MIZUHO	10/10/2017	0.96	16/10/2024	EUR	500	JP	Financial	1.05	5.57	A1/A-	Sustainalytics	No	No	No
DE000MHB21J0	Muenchener Hypothekenbank	MUNHYP	30/10/2018	0.25	13/12/2023	EUR	500	DE	Financial	0.19	4.89	Aaa/-	Oekom	No	No	No
XS1692485912	Municipality Finance	KUNTA	26/09/2017	0.75	07/09/2027	EUR	500	FI	Sub-sovereign	0.51	8.36	Aa1/AA+	Cicero - medium	No	No	No
XS1575474371	National Australia Bank	NAB	28/02/2017	0.35	07/09/2022	EUR	500	AU	Financial	0.58	3.62	Aa3/AA-	DNV-GL	Yes	No	No
XS1872032369	National Australia Bank	NAB	22/08/2018	0.63	30/08/2023	EUR	750	AU	Financial	0.79	4.54	Aa3/AA-	DNV-GL	No	No	No
XS1640493372	Nordea Bank	NDASS	26/06/2017	0.30	30/06/2022	EUR	500	FI	Financial	0.36	3.44	Aa3/-	Oekom	No	No	No
XS1292474282	Nordic Investment Bank	NIB	10/09/2015	0.38	19/09/2022	EUR	500	SNAT	Multi-Lateral	-0.21	3.68	Aaa/AAA	Cicero - no shading	No	No	No
XS1431730388	Nordic Investment Bank	NIB	03/06/2016	0.13	10/06/2024	EUR	1,000	SNAT	Multi-Lateral	0.04	5.40	Aaa/AAA	Cicero - no shading	No	No	No
XS1815070633	Nordic Investment Bank	NIB	24/04/2018	0.50	03/11/2025	EUR	500	SNAT	Multi-Lateral	0.26	6.70	Aaa/AAA	Sustainalytics	No	No	No
DE000NRW0GP1	North Rhine-Westphalia	NRW	04/03/2015	0.50	11/03/2025	EUR	750	DE	Sub-sovereign	0.25	6.05	Aa1/AA-	No	No	No	No
DE000NRW0AC0	NRW Bank	NRWBK	03/11/2015	0.88	10/11/2025	EUR	500	DE	Sub-sovereign	0.34	6.64	Aa1/AA-	Oekom	No	No	No
DE000NRW0AD8	NRW Bank	NRWBK	09/11/2016	0.38	17/11/2026	EUR	500	DE	Sub-sovereign	0.47	7.72	Aa1/AA-	Oekom	No	No	No
DE000NRW0AE6	NRW Bank	NRWBK	06/09/2017	0.50	13/09/2027	EUR	500	DE	Sub-sovereign	0.58	8.45	Aa1/AA-	Oekom	No	No	No
DE000NRW0AF3	NRW Bank	NRWBK	25/06/2018	0.75	30/06/2028	EUR	500	DE	Sub-sovereign	0.67	9.09	Aa1/AA-	Sustainalytics	No	No	No
XS1083955911	NWB Bank	NEDWBK	26/06/2014	0.63	03/07/2019	EUR	500	NL	Sub-sovereign	-0.41	0.48	Aaa/AAA	Cicero - no shading	No	No	No
XS1284550941	NWB Bank	NEDWBK	26/08/2015	1.00	03/09/2025	EUR	1,000	NL	Sub-sovereign	0.31	6.43	Aaa/AAA	Cicero - no shading	No	No	No
XS1720192696	Ørsted A/S	ORSTED	16/11/2017	2.25	24/11/3017	EUR	500	DK	Corporates	2.26	5.36	Baa3/BBB+	Cicero - dark	No	No	No
XS1721760541	Ørsted A/S	ORSTED	16/11/2017	1.50	26/11/2029	EUR	750	DK	Corporates	1.46	9.75	Baa1/BBB+	Cicero - dark	No	No	No
XS1794209459	Paprec Holdings	PAPREC	15/03/2018	4.00	31/03/2025	EUR	575	FR	Corporates	7.19	5.23	B1/B+	Vigeo Eiris	No	No	No
XS1852213930	Raiffeisen Bank	RBIIV	28/06/2018	0.25	05/07/2021	EUR	500	AT	Financial	0.46	2.47	A3/BBB+	Sustainalytics	No	No	No
FR0013264488	RATP Group	RATPFP	22/06/2017	0.88	25/05/2027	EUR	500	FR	Sub-sovereign	0.73	8.01	Aa2/-	Vigeo Eiris	No	No	No
XS1613140489	Repsol	REPSM	09/05/2017	0.50	23/05/2022	EUR	500	ES	Corporates	0.34	3.33	Baa2/BBB	Vigeo Eiris	No	No	No
FR0013234333	Republic of France	FRTR	24/01/2017	1.75	25/06/2039	EUR	14,793	FR	Sovereign	1.36	17.11	Aa2u/-	Vigeo Eiris	No	No	No
XS1536786939	Republic of Poland	POLAND	13/12/2016	0.50	20/12/2021	EUR	750	PL	Sovereign	0.02	2.93	A2/A-	Vigeo Eiris	No	No	No
XS1766612672	Republic of Poland	POLAND	31/01/2018	1.13	07/08/2026	EUR	1,000	PL	Sovereign	0.83	7.22	A2/A-	Sustainalytics	No	GB2	No
XS1900101046	Schiphol Group	IRISH	22/10/2018	1.35	18/03/2031	EUR	3000	IE	Corporates	1.36	10.55	A2/A+	Vigeo Eiris	Yes	No	E1
XS1567475303	SEB	SEB	10/02/2017	0.30	17/02/2022	EUR	500	SE	Financial	0.33	3.08	Aa2/A+	Cicero - dark	No	No	No
XS1514051694	SNCF Réseau	RESFER	27/10/2016	1.00	09/11/2031	EUR	900	FR	Sub-sovereign	1.21	11.94	Aa2/-	Oekom	Yes	No	No
XS1588061777	SNCF Réseau	RESFER	22/03/2017	1.88	30/03/2034	EUR	1,000	FR	Sub-sovereign	1.41	13.09	Aa2/AA	Oekom	Yes	No	No
XS1648462023	SNCF Réseau	RESFER	11/07/2017	2.25	20/12/2047	EUR	750	FR	Sub-sovereign	1.94	21.43	Aa2/-	Oekom	Yes	No	No
XS1324923520	Societe Generale	SOCGEN	18/11/2015	0.75	25/11/2020	EUR	500	FR	Financial	0.11	1.87	A1/A	Vigeo Eiris	No	No	No
XS1500337644	Societe Generale	SOCGEN	28/09/2016	0.13	05/10/2021	EUR	500	FR	Financial	0.34	2.72	A1/A	Vigeo Eiris	No	No	No
XS1434560642	Southern Power	SO	13/06/2016	1.00	20/06/2022	EUR	600	US	Corporates	0.66	3.36	Baa1/BBB+	No	No	No	No
XS1435056426	Southern Power	SO	13/06/2016	1.85	20/06/2026	EUR	500	US	Corporates	1.54	6.86	Baa1/BBB+	No	No	No	No
XS1760129608	SpareBank Boligkreditt	SPABOL	23/01/2018	0.50	30/01/2025	EUR	1,000	NO	Financial	0.50	5.93	Aaa/-	DNV-GL	Yes	GB1	No
XS1676952481	SSE	SSELN	30/08/2017	0.88	06/09/2025	EUR	600	GB	Corporates	1.71	6.37	A3/A-	DNV-GL	No	No	No
XS1875284702	SSE	SSELN	28/08/2018	1.38	04/09/2027	EUR	650	GB	Corporates	1.92	8.01	A3/A-	DNV-GL	No	No	No
XS1694219780	Sumitomo Mitsui	SUMIBK	04/10/2017	0.93	11/10/2024	EUR	500	JP	Financial	1.12	5.56	A1/A-	Sustainalytics	No	No	No
XS1882030510	Sumitomo Mitsui	SUMITR	18/09/2018	0.18	25/09/2020	EUR	500	JP	Financial	-0.03	0.21	A1/A	Sustainalytics	No	No	No
XS1848875172	Svenska Handelsbanken	SHBASS	25/06/2018	0.38	03/07/2023	EUR	500	SE	Financial	0.55	4.42	Aa2/AA-	Cicero - dark	No	No	No
XS1711933033	Swedbank	SWEDA	30/10/2017	0.25	07/11/2022	EUR	500	SE	Financial	0.43	3.80	Aa2/AA-	DNV-GL	No	No	No
XS1241581179	TenneT	TENN	28/05/2015	0.88	04/06/2021	EUR	500	NL	Corporates	0.12	2.13	A3/A-	Oekom	No	GB1	No

A: EUR-denom. (≥EUR500m) green bonds

ISIN	Issuer Name	Ticker	Pricing Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Duration	Rating	2nd party opinion?	CBI cert.	Moody's GBA	S&P GBE
XS1241581096	TenneT	TENN	28/05/2015	1.75	04/06/2027	EUR	500	NL	Corporates	1.17	7.52	A3/A-	Oekom	No	GB1	No
XS1432384664	TenneT	TENN	06/06/2016	1.00	13/06/2026	EUR	500	NL	Corporates	1.10	7.08	A3/A-	Oekom	No	GB1	No
XS1432384409	TenneT	TENN	06/06/2016	1.88	13/06/2036	EUR	500	NL	Corporates	1.84	14.44	A3/A-	Oekom	No	GB1	No
XS1505568136	TenneT	TENN	10/10/2016	1.25	24/10/2033	EUR	500	NL	Corporates	1.66	13.31	A3/A-	Oekom	No	GB1	No
XS1591694481	TenneT	TENN	29/03/2017	3.00	Perp	EUR	1,100	NL	Corporates	2.85	4.79	Baa3/BB+	Oekom	No	GB2	No
XS1632897762	TenneT	TENN	12/06/2017	0.75	26/06/2025	EUR	500	NL	Corporates	0.86	6.25	A3/A-	Oekom	No	GB2	E1
XS1632897929	TenneT	TENN	12/06/2017	1.38	26/06/2029	EUR	500	NL	Corporates	1.37	9.40	A3/A-	Oekom	No	GB2	E1
XS1828037587	TenneT	TENN	22/05/2018	1.38	05/06/2028	EUR	500	NL	Corporates	1.32	8.49	A3/A-	Oekom	No	No	No
XS1828037827	TenneT	TENN	22/05/2018	2.00	05/06/2034	EUR	750	NL	Corporates	1.77	12.89	A3/A-	Oekom	No	No	No
XS1858912915	TERNA	TRNIM	16/07/2018	1.00	23/07/2023	EUR	750	IT	Corporates	0.99	4.39	Baa1/BBB+	Vigeo Eiris	No	No	No
XS1577956789	Three Gorges Finance	YANTZE	14/06/2017	1.30	21/06/2024	EUR	650	CN	Corporates	1.61	5.18	A1/-	No	No	No	E1
XS1720639779	Toyota	TOYOTA	14/11/2017	0.00	21/07/2021	EUR	600	US	Corporates	0.23	2.52	Aa3/AA-	Sustainalytics	No	No	No
XS1038708522	Unibail-Rodamco-Westfield	ULFP	19/02/2014	2.50	26/02/2024	EUR	750	FR	Corporates	0.76	4.76	-/A	Vigeo Eiris	No	No	No
XS1218319702	Unibail-Rodamco-Westfield	ULFP	08/04/2015	1.00	14/03/2025	EUR	500	FR	Corporates	1.03	5.91	-/A	No	No	No	No
XS1140300663	Verbund	VERAV	13/11/2014	1.50	20/11/2024	EUR	500	AT	Corporates	0.66	5.62	Baa1/A-	Oekom	No	No	No
XS1197336263	Vestas Wind	VWSDC	04/03/2015	2.75	11/03/2022	EUR	500	DK	Corporates	1.31	2.76	-/-	DNV-GL	No	No	No
XS1722859532	Westpac Banking	WSTP	16/11/2017	0.63	22/11/2024	EUR	500	AU	Financial	0.96	5.72	Aa3/AA-	EY	No	No	No

Source: Dealogic, Bloomberg, HSBC

B: USD-denom. (≥USD500m) green bonds

ISIN	Issuer Name	Ticker	Issue Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Dur.	Rating	2nd party opinion	CBI certification	Moody's GBA	S&P GBE
US00828EDF34	African Development Bank	AFDB	28/11/2018	3.00	06/12/2021	USD	500	SNAT	Multi-Lateral	2.63	2.76	Aaa/AAA	Cicero - no shading	No	No	No
XS1303791336	Agricultural Bank of China	AGRBK	13/10/2015	2.75	20/10/2020	USD	500	CN	Financial	3.43	1.71	A1/-	Deloitte	No	No	No
US037833BU32	Apple	AAPL	16/02/2016	2.85	23/02/2023	USD	1,500	US	Corporates	3.19	3.81	Aa1/AA+	Sustainalytics	No	No	No
US037833CX61	Apple	AAPL	13/06/2017	3.00	20/06/2027	USD	1,000	US	Corporates	3.70	7.35	Aa1/AA+	Sustainalytics	No	No	No
US045167CY77	Asian Development Bank	ASIA	12/03/2015	2.13	19/03/2025	USD	500	SNAT	Multi-Lateral	2.72	5.71	Aaa/AAA	Cicero - no shading	No	No	No
US045167DQ35	Asian Development Bank	ASIA	09/08/2016	1.00	16/08/2019	USD	800	SNAT	Multi-Lateral	2.64	0.59	Aaa/AAA	Cicero - no shading	No	No	No
US045167DR18	Asian Development Bank	ASIA	09/08/2016	1.75	14/08/2026	USD	500	SNAT	Multi-Lateral	2.74	6.98	Aaa/AAA	Cicero - no shading	No	No	No
US045167EB56	Asian Development Bank	ASIA	01/08/2017	1.88	10/08/2022	USD	750	SNAT	Multi-Lateral	2.63	3.41	Aaa/AAA	Cicero - no shading	No	No	No
US045167EC30	Asian Development Bank	ASIA	01/08/2017	2.38	10/08/2027	USD	500	SNAT	Multi-Lateral	2.81	7.62	Aaa/AAA	Cicero - no shading	No	No	No
US045167EJ82	Asian Development Bank	ASIA	19/09/2018	3.13	26/09/2028	USD	750	SNAT	Multi-Lateral	2.83	8.28	Aaa/AAA	Cicero - no shading	No	No	No
US05351WAA18	Avangrid	AGR	16/11/2017	3.15	01/12/2024	USD	600	US	Corporates	3.82	5.30	Baa1/BBB	Vigeo Eiris	No	No	No
US05463CAD48	Axis Bank	AXSBIN	23/05/2016	2.88	01/06/2021	USD	500	IN	Financial	4.10	2.28	Baa3/BBB-	KPMG	Yes	No	No
US05502JAA88	Azure Power Energy	AZUPOE	27/07/2017	5.50	03/11/2022	USD	500	IN	Corporates	7.41	3.33	Ba3/-	Sustainalytics	Yes	No	No
US059613AC35	Banco Nacional de Costa Rica	BNALCR	20/04/2016	5.88	25/04/2021	USD	500	CR	Financial	7.91	2.07	Ba2/-	No	No	GB2	No
US06051GGB95	Bank of America	BAC	04/11/2016	2.15	09/11/2020	USD	1,000	US	Financial	3.27	1.77	A3/A-	No	Yes	No	No
US06051GHH56	Bank of America	BAC	14/05/2018	3.50	17/05/2022	USD	2,250	US	Financial	3.51	2.23	A3/A-	No	No	No	No
XS1437622621	Bank of China	BCHINA	05/07/2016	3.43	12/07/2019	USD	750	CN	Financial	5.04	0.01	A1/-	EY	No	No	No
XS1437622548	Bank of China	BCHINA	05/07/2016	1.88	12/07/2019	USD	500	CN	Financial	3.53	0.50	A1/-	EY	No	No	No
XS1437622977	Bank of China	BCHINA	05/07/2016	2.25	12/07/2021	USD	1,000	CN	Financial	3.54	2.38	A1/-	EY	No	No	No
XS1512929842	Bank of China	BCHINA	03/11/2016	1.88	09/11/2019	USD	500	CN	Financial	3.25	0.82	Aa3/-	EY	No	No	No
XS1720540134	Bank of China	BCHINA	15/11/2017	3.19	22/11/2022	USD	500	CN	Financial	3.71	0.12	A1/A	EY	Yes	No	No
XS1830915572	Bank of China	BCHINA	31/05/2018	3.05	07/06/2021	USD	500	CN	Financial	3.66	0.16	A1/A	Cicero - dark	Yes	No	No
XS1832452103	Bank of China	BCHINA	31/05/2018	3.15	07/06/2023	USD	500	CN	Financial	3.76	0.16	A1/A	Cicero - dark	Yes	No	No
XS1792571652	Beijing Capital Polaris	BEICAP	19/03/2018	4.25	26/03/2021	USD	500	CN	Corporates	4.61	2.06	Baa3/BBB-	Sustainalytics	No	No	No
US10112RBA14	Boston Properties	BXP	13/11/2018	4.50	01/12/2028	USD	1,000	US	Corporates	4.29	7.75	Baa1/A-	No	No	No	No
US059614AP21	Brazilian Development Bank	BNDES	02/05/2017	4.75	09/05/2024	USD	497	BR	Sub-sovereign	5.11	4.62	Ba2/BB-	Sustainalytics	No	No	No
XS1711039591	China Development Bank	SDBC	09/11/2017	2.75	16/11/2022	USD	500	CN	Sub-sovereign	3.33	3.61	A1/-	EY	Yes	No	No
US24023KAC27	DBS Group Holdings Ltd	DBSSP	18/07/2017	2.96	25/07/2022	USD	500	SG	Financial	3.34	0.04	Aa2/-	Sustainalytics	No	No	No
US25389JAL08	Digital Reality Trust	DLR	18/06/2015	3.95	01/07/2022	USD	500	US	Corporates	3.81	3.08	Baa2/BBB	No	No	No	No
US23338VAH96	DTE Electric	DTE	30/04/2018	4.05	15/05/2048	USD	525	US	Corporates	4.14	16.91	Aa3/A	No	No	No	No
US26442CAX20	Duke Energy Carolinas	DUK	05/11/2018	3.95	15/11/2028	USD	650	US	Corporates	3.66	7.91	Aa2/A	No	No	No	No
US29874QCW24	EBRD	EBRD	13/07/2016	0.88	22/07/2019	USD	650	SNAT	Multi-Lateral	2.67	0.53	NR/-	Cicero - no shading	No	No	No
US29874QDG64	EBRD	EBRD	28/09/2017	1.88	15/07/2021	USD	500	SNAT	Multi-Lateral	2.63	2.42	NR/AAA	Cicero - no shading	No	No	No
US268317AS33	EDF	EDF	07/10/2015	3.63	13/10/2025	USD	1,250	FR	Corporates	4.18	5.87	A3/A-	Vigeo Eiris	No	No	No
US298785GQ39	European Investment Bank	EIB	08/10/2014	2.50	15/10/2024	USD	1,000	SNAT	Multi-Lateral	2.69	5.30	Aaa/AAA	No	No	No	No
US298785HD17	European Investment Bank	EIB	06/04/2016	2.13	13/04/2026	USD	1,500	SNAT	Multi-Lateral	2.74	6.63	Aaa/-	No	No	No	No
US298785HM16	European Investment Bank	EIB	17/05/2017	2.38	24/05/2027	USD	1,500	SNAT	Multi-Lateral	2.80	7.50	Aaa/AAA	No	No	No	No
US29878TDB70	European Investment Bank	EIB	18/04/2018	2.88	13/06/2025	USD	1,500	SNAT	Multi-Lateral	2.72	5.83	Aaa/AAA	No	No	No	No
US30216BGU08	Export Development Canada	EDC	24/05/2017	1.63	01/06/2020	USD	500	CA	Sub-sovereign	2.65	1.36	Aaa/AAA	Cicero - no shading	No	No	No
XS1209864229	Export-Import Bank of India	EXIMBK	24/03/2015	2.75	01/04/2020	USD	500	IN	Sub-sovereign	3.70	1.19	Baa2/BBB-	No	No	No	No
US3136AVKR90	Fannie Mae	FNA	22/02/2017	2.78	25/02/2027	USD	537	US	ABS	3.30	7.02	-/-	Cicero - light	No	No	No
US3136AY2C66	Fannie Mae	FNA	21/11/2017	2.94	25/09/2027	USD	701	US	ABS	3.33	7.48	-/-	Cicero - light	No	No	No
US3136AY6U29	Fannie Mae	FNA	21/12/2017	3.14	25/11/2027	USD	562	US	ABS	3.36	7.37	-/-	Cicero - light	No	No	No
US3136B0YM24	Fannie Mae	FNA	21/02/2018	2.90	25/01/2028	USD	796	US	ABS	3.39	7.67	-/-	Cicero - light	No	No	No
US3136B1XJ86	Fannie Mae	FNA	09/04/2018	3.04	25/03/2028	USD	626	US	ABS	3.41	7.78	-/-	Cicero - light	No	No	No
US3136B2GX47	Fannie Mae	FNA	22/06/2018	3.33	25/06/2028	USD	505	US	ABS	3.42	7.84	-/-	Cicero - light	No	No	No
US3136B3DE75	Fannie Mae	FNA	24/10/2018	3.70	25/09/2030	USD	533	US	ABS	3.56	9.24	-/-	Cicero - light	No	No	No
US31572UAF30	Fibria	FIBRBZ	11/01/2017	5.50	17/01/2027	USD	700	BR	Corporates	5.36	6.27	-/BBB-	Sustainalytics	No	No	No
US39530LAB62	Greenko Dutch	GKOLN	17/07/2017	5.25	24/07/2024	USD	650	IN	Financial	7.63	4.54	Ba2/-	Sustainalytics	No	No	No
US39530XAA28	Greenko Investment	GRENKO	10/08/2016	4.88	16/08/2023	USD	500	IN	Financial	7.69	3.91	-/B+	Sustainalytics	No	No	No
US44920UAG31	Hyundai	HYUCAP	07/03/2016	2.88	16/03/2021	USD	500	KR	Corporates	3.76	2.08	Baa1/A-	No	No	No	No

B: USD-denom. (≥USD500m) green bonds

ISIN	Issuer Name	Ticker	Issue Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Dur.	Rating	2nd party opinion	CBI certification	Moody's GBA	S&P GBE
US45905URL07	IBRD	IBRD	20/02/2015	2.13	03/03/2025	USD	600	SNAT	Multi-Lateral	2.69	5.67	Aaa/-	Cicero - no shading	No	No	No
US45905U6L39	IBRD	IBRD	13/11/2018	3.13	20/11/2025	USD	600	SNAT	Multi-Lateral	2.71	6.13	Aaa/-	Cicero - no shading	No	No	No
XS1830984628	ICBC	ICBCAS	05/06/2018	3.06	14/06/2021	USD	500	CN	Financial	3.65	0.18	A1/-	Cicero - dark	Yes	No	No
XS1830985278	ICBC	ICBCAS	05/06/2018	3.16	14/06/2023	USD	500	CN	Financial	3.77	0.18	A1/-	Cicero - dark	Yes	No	No
US45950VHX73	IFC	IFC	30/03/2016	2.13	07/04/2026	USD	1,200	SNAT	Multi-Lateral	2.69	6.62	Aaa/AAA	Cicero - medium	No	No	No
US45950VLH77	IFC	IFC	17/10/2017	2.00	24/10/2022	USD	1,000	SNAT	Multi-Lateral	2.63	3.61	Aaa/AAA	Cicero - no shading	No	No	No
XS1733877762	Indian Railway	INRCIN	05/12/2017	3.84	13/12/2027	USD	500	IN	Sub-sovereign	4.88	7.38	Baa2/BBB-	KPMG	Yes	No	No
XS1898122301	Industrial Bank	INDUBK	13/11/2018	3.49	20/11/2021	USD	600	CN	Financial	3.74	0.12	Baa2/-	Cicero - no shading	Yes	No	No
US45685NAA46	ING	INTNED	08/11/2018	4.63	06/01/2026	USD	1,250	NL	Financial	4.60	5.88	Baa1/A-	Oekom	Yes	No	No
US461070AP91	Interstate Power & Light Co	LNT	19/09/2018	4.10	26/09/2028	USD	500	US	Corporates	3.88	7.72	Baa1/A-	No	No	No	No
US46128MAJ09	Inversiones CMPC	CMPCCI	30/03/2017	4.38	04/04/2027	USD	500	CL	Corporates	5.08	6.72	Baa3/BBB-	Sustainalytics	No	No	No
US48305QAC78	Kaiser Foundation Hospitals	KPERM	25/04/2017	3.15	01/05/2027	USD	575	US	Corporates	3.62	7.18	-/AA-	Sustainalytics	No	No	No
US500769GF56	KFW	KFW	07/10/2014	1.75	15/10/2019	USD	1,500	DE	Sub-sovereign	2.69	0.75	Aaa/AAA	Cicero - dark	No	No	No
US500769GU24	KFW	KFW	10/11/2015	1.88	30/11/2020	USD	1,000	DE	Sub-sovereign	2.65	1.84	Aaa/AAA	Cicero - dark	No	No	No
US500769HD99	KFW	KFW	22/11/2016	2.00	30/11/2021	USD	1,500	DE	Sub-sovereign	2.62	2.78	Aaa/AAA	Cicero - dark	No	No	No
US500769HP20	KFW	KFW	27/09/2017	2.00	29/09/2022	USD	1,000	DE	Sub-sovereign	2.65	3.54	Aaa/AAA	Cicero - dark	No	No	No
US49835LAB71	klabin Finance	KLAB	12/09/2017	4.88	19/09/2027	USD	500	BR	Corporates	6.27	6.78	-/BB+	Sustainalytics	No	No	No
US50048MBX74	Kommunalbanken	KBN	04/02/2015	2.13	11/02/2025	USD	500	NO	Sub-sovereign	2.79	5.61	Aaa/AAA	Cicero - no shading	No	No	No
US50048MCD02	Kommunalbanken	KBN	19/10/2016	1.38	26/10/2020	USD	500	NO	Sub-sovereign	2.68	1.75	Aaa/AAA	Cicero - no shading	No	No	No
US50046PAU93	Kommuninvest	KOMINS	15/03/2016	1.50	23/04/2019	USD	600	SE	Sub-sovereign	2.63	0.29	Aaa/AAA	Cicero - medium	No	No	No
US50049GAB86	Kommuninvest	KOMINS	16/05/2017	1.88	01/06/2021	USD	500	SE	Sub-sovereign	2.66	2.32	Aaa/AAA	Cicero - medium	No	No	No
US50064YAN31	Korea Hydro & Nuclear Power	KOHNPW	19/07/2018	3.75	25/07/2023	USD	600	KR	Corporates	3.54	4.08	Aa2/AA	Sustainalytics	No	No	No
US59284MAA27	Mexico City Airport Trust	MEXCAT	22/09/2016	4.25	31/10/2026	USD	1,000	MX	Corporates	6.15	6.39	Baa1/BBB+	Sustainalytics	No	GB1	No
US59284MAB00	Mexico City Airport Trust	MEXCAT	22/09/2016	5.50	31/10/2046	USD	1,000	MX	Corporates	6.62	12.96	Baa1/BBB+	Sustainalytics	No	GB1	No
US59284MAC82	Mexico City Airport Trust	MEXCAT	13/09/2017	3.88	30/04/2028	USD	1,000	MX	Corporates	5.77	7.50	Baa1/BBB+	Sustainalytics	No	GB1	E1
US59284MAD65	Mexico City Airport Trust	MEXCAT	13/09/2017	5.50	31/07/2047	USD	3,000	MX	Corporates	6.61	12.88	Baa1/BBB+	Sustainalytics	No	GB1	E1
US595620AS49	MidAmerican Energy	BRKHEC	29/01/2018	3.65	01/08/2048	USD	700	US	Corporates	4.10	17.21	Aa2/A+	Deloitte	No	No	No
US606822AH76	Mitsubishi UFJ	MUFG	06/09/2016	2.53	13/09/2023	USD	500	JP	Financial	3.51	4.32	A1/A-	Sustainalytics	No	No	No
XS1509084775	MTR Corp	MTRC	24/10/2016	2.50	02/11/2026	USD	600	HK	Corporates	3.55	6.96	Aa2/AA+	Sustainalytics	No	No	No
US62630CAH43	Municipality Finance	KUNTA	27/09/2016	1.38	21/09/2021	USD	500	FI	Sub-sovereign	2.69	2.61	Aa1/AA+	Cicero - no shading	No	No	No
US629598AS28	Nacional Financiera, S.N.C.	NAFIN	29/10/2015	3.38	05/11/2020	USD	500	MX	Sub-sovereign	4.00	1.74	A3/-	Sustainalytics	No	No	No
US63254ABA51	National Australia Bank	NAB	11/06/2018	3.63	20/06/2023	USD	750	AU	Financial	3.55	4.07	Aa3/AA-	No	Yes	No	No
XS1587035996	National Bank of Abu Dhabi	FABUH	27/03/2017	3.00	30/03/2022	USD	587	AE	Financial	3.94	3.01	Aa3/AA-	Vigeo Eiris	No	No	No
US65562QAW50	Nordic Investment Bank	NIB	23/09/2014	2.25	30/09/2021	USD	500	SNAT	Multi-Lateral	2.64	2.61	Aaa/AAA	Cicero - no shading	No	No	No
US63983TBB08	NWB Bank	NEDWBK	18/03/2016	2.38	24/03/2026	USD	1,250	NL	Sub-sovereign	2.86	6.52	Aaa/AAA	Cicero - no shading	No	No	No
US63983TBK07	NWB Bank	NEDWBK	07/11/2017	2.13	15/11/2021	USD	500	NL	Sub-sovereign	2.69	2.74	Aaa/AAA	Cicero - no shading	No	No	No
US63983TBN46	NWB Bank	NEDWBK	15/11/2018	3.00	21/12/2021	USD	1,000	NL	Sub-sovereign	2.69	2.80	Aaa/AAA	Cicero - no shading	No	No	No
US63983TBP93	NWB Bank	NEDWBK	27/11/2018	3.13	05/12/2022	USD	500	NL	Sub-sovereign	2.73	3.65	Aaa/AAA	Cicero - no shading	No	No	No
US71567PAJ93	Perusahaan Penerbit	INDOIS	22/02/2018	3.75	01/03/2023	USD	1,250	ID	Sub-sovereign	4.23	3.75	Baa2/BBB-	Cicero - medium	No	No	No
US843646AS92	Southern Power	SO	10/11/2016	1.95	15/12/2019	USD	600	US	Corporates	3.44	0.91	Baa1/BBB+	Deloitte	No	No	No
US843646AM23	Southern Power	SO	12/11/2015	4.15	01/12/2025	USD	500	US	Corporates	4.28	5.91	Baa1/BBB+	No	No	No	No
US85511XAC48	Star Energy	STAREN	18/04/2018	6.75	24/04/2033	USD	580	ID	Corporates	7.78	5.91	Ba3/-	Carbon Trust	No	No	No
XS1856795510	State Bank of India	SBIIN	19/09/2018	4.50	28/09/2023	USD	650	IN	Financial	4.25	4.17	Baa2/BBB-	KPMG	Yes	No	No
US865622BY94	Sumitomo Mitsui	SUMIBK	14/10/2015	2.45	20/10/2020	USD	500	JP	Financial	3.24	1.72	A1/A	No	No	No	No
US05674XAA90	Suzano	SUZANO	07/07/2016	5.75	14/07/2026	USD	700	BR	Corporates	5.34	5.90	-/BBB-	No	No	No	No
US00254EMD12	Swedish Export Credit	SEK	16/06/2015	1.88	23/06/2020	USD	500	SE	Sub-sovereign	2.70	1.42	Aa1/AA+	Cicero - no shading	No	No	No
XS1743657683	Swire Properties	SWIPRO	03/01/2018	3.50	10/01/2028	USD	500	HK	Corporates	4.14	7.49	A2/-	Sustainalytics	No	No	No
US89114QBT40	Toronto-Dominion Bank	TD	07/09/2017	1.85	11/09/2020	USD	1,000	CA	Financial	2.99	1.62	Aa1/AA-	DNV-GL	No	No	No

Source: Dealogic, Bloomberg, HSBC

C: Other currency (≥USD500m equiv.) green bonds

ISIN	Issuer Name	Ticker	Pricing Date	Coupon	Maturity Date	Ccy	Size (mn)	Country	Issuer Type	Yield	Dur.	Rating	2nd party opinion	CBI certification	Moody's GBA	S&P GBE
CND10000G602	Agricultural Development Bank of China	ADBCH	21/12/2016	3.79	23/12/2019	CNY	10,000	CN	Sub-sovereign	2.79	0.93	-/-	CECEP	No	No	No
CND10000H6B4	Bank of Beijing	BOBJ	17/04/2017	4.30	19/04/2020	CNY	12,000	CN	Financial	3.90	1.20	-/-	EY	No	No	No
CND10000F3J6	Bank of Communications	BOCOM	18/11/2016	2.94	22/11/2019	CNY	10,000	CN	Financial	3.25	0.85	-/-	Deloitte	No	No	No
CND10000F3H0	Bank of Communications	BOCOM	18/11/2016	3.25	22/11/2021	CNY	20,000	CN	Financial	3.49	2.69	-/-	Deloitte	No	No	No
CND100009Z36	Bank of Jiangxi	NANCHB	12/07/2016	3.41	14/07/2019	CNY	3,500	CN	Financial	3.34	0.50	-/-	No	No	No	No
CND10000H8W6	Bank of Najing	NANJBK	25/04/2017	4.40	27/04/2020	CNY	4,000	CN	Financial	3.60	1.21	-/-	EY	No	No	No
CND100009HB1	Bank of Qingdao	QDBANK	10/03/2016	3.25	14/03/2019	CNY	3,500	CN	Financial	3.48	0.18	-/-	No	No	No	No
CND10000H8X4	China Development Bank	SDBC	27/04/2017	4.19	02/05/2022	CNY	10,000	CN	Sub-sovereign	3.47	2.98	-/-	PwC	No	No	No
CA12593CAF82	CPPIB Capital	CPPIBC	13/06/2018	3.00	15/06/2028	CAD	1,500	CA	Financial	2.78	8.17	Aaa/AAA	Cicero - medium	No	No	No
XS1051861851	European Investment Bank	EIB	27/03/2014	2.25	07/03/2020	GBP	1,800	SNAT	Multi-Lateral	0.94	1.12	Aaa/AAA	No	No	No	No
AU3CB0249787	European Investment Bank	EIB	03/01/2018	2.70	12/01/2023	AUD	750	SNAT	Multi-Lateral	2.41	3.78	Aaa/AAA	No	No	No	No
US29878TCX00	European Investment Bank	EIB	10/01/2018	2.38	18/01/2023	CAD	700	SNAT	Multi-Lateral	2.20	3.78	Aaa/-	No	No	No	No
CND100009FT7	Industrial Bank	INDUBK	28/01/2016	2.95	29/01/2019	CNY	10,000	CN	Financial	2.60	0.06	-/-	No	No	No	No
CND100009ZH0	Industrial Bank	INDUBK	15/07/2016	3.20	18/07/2019	CNY	20,000	CN	Financial	3.52	0.51	-/-	No	No	No	No
CND10000F3W9	Industrial Bank	INDUBK	16/11/2016	3.40	17/11/2021	CNY	20,000	CN	Financial	3.51	2.67	-/-	No	No	No	No
XS1268337844	KFW	KFW	23/07/2015	1.63	05/06/2020	GBP	1,000	DE	Sub-sovereign	1.00	1.37	Aaa/AAA	Cicero - dark	No	No	No
XS1764081110	KFW	KFW	31/01/2018	1.38	02/02/2028	SEK	5,000	DE	Sub-sovereign	1.10	8.40	Aaa/AAA	Cicero - no shading	No	No	No
XS1508534861	Kommuninvest	KOMINS	21/10/2016	0.00	05/05/2020	SEK	5,000	SE	Sub-sovereign	-0.13	1.32	Aaa/AAA	Cicero - medium	No	No	No
XS1824244807	Landshypotek Bank	LANHYP	16/05/2018	0.75	25/05/2023	SEK	5,250	SE	Financial	0.67	4.28	-/AAA	Cicero - dark	No	No	No
AU3SG0001878	New South Wales Treasury Corp	NSWTC	09/11/2018	3.00	15/11/2028	AUD	1,800	AU	Sub-sovereign	2.75	8.46	Aaa/AAA	EY	Yes	No	No
CA68323ADL58	Province of Ontario	ONT	22/01/2016	1.95	27/01/2023	CAD	1,550	CA	Sub-sovereign	2.34	3.83	Aa2/A+	Cicero - no shading	No	No	No
CA68323AER10	Province of Ontario	ONT	25/01/2018	2.65	05/02/2025	CAD	1,000	CA	Sub-sovereign	2.53	5.52	Aa2/A+	Cicero - no shading	No	No	No
AU000XQLQAD1	Queensland Treasury	QTC	15/03/2017	3.00	22/03/2024	AUD	750	AU	Sub-sovereign	2.39	4.76	Aa1/AA+	DNV-GL	Yes	No	No
CND100009FS9	Shanghai Pudong Development Bank	SHANPU	27/01/2016	2.95	29/01/2019	CNY	20,000	CN	Financial	2.52	0.06	-/-	No	No	No	No
CND100009JH4	Shanghai Pudong Development Bank	SHANPU	25/03/2016	3.20	29/03/2021	CNY	15,000	CN	Financial	3.35	2.06	-/-	No	No	No	No
CND100009ZG2	Shanghai Pudong Development Bank	SHANPU	14/07/2016	3.40	18/07/2021	CNY	15,000	CN	Financial	3.70	2.34	-/-	No	No	No	No
CND10000C3W2	State Grid Corporation of China	CHGRID	19/10/2016	2.80	20/10/2019	CNY	5,000	CN	Corporates	3.49	0.76	-/-	No	No	No	No
CND10000C3X0	State Grid Corporation of China	CHGRID	19/10/2016	2.99	20/10/2021	CNY	5,000	CN	Corporates	3.72	2.60	-/-	No	No	No	No
XS1222743061	Transport for London	TRANLN	17/04/2015	2.13	24/04/2025	GBP	400	GB	Corporates	1.83	5.77	Aa3/AA-	DNV-GL	No	No	No

Source: Dealogic, Bloomberg, HSBC

D: Corporate green bonds, by use of proceeds

ISIN	Pricing Date	Company	Ticker	Coupon	Maturity Date	Currency	Outstanding (LCLmn)	Outst. (USDmn)	Sector	Wind	Solar	Hydro	Geo	Bio	Unspecified	Energy efficiency	Water	Waste Mgt	Low carbon buildings	Low carbon transport	Forestry	Green materials
FR0011637586	20/11/2013	EDF	EDF	2.25	27/04/2021	EUR	1,400	1,881	Utilities	Y	Y			Y								
XS1038708522	19/02/2014	Unibail-Rodamco-Westfield	ULFP	2.5	26/02/2024	EUR	750	1,030	Real Estate							Y			Y			
XS1057055060	08/04/2014	Iberdrola International BV	IBESM	2.5	24/10/2022	EUR	750	1,035	Utilities	Y	Y	Y	Y			Y						
FR0011911239	12/05/2014	GDF Suez SA	ENGIFP	1.375	19/05/2020	EUR	1,200	1,651	Utilities	Y		Y		Y		Y						
FR0011911247	12/05/2014	GDF Suez SA	ENGIFP	2.375	19/05/2026	EUR	1,300	1,788	Utilities	Y		Y		Y		Y						
XS1084043451	26/06/2014	Hera SpA	HERIM	2.375	04/07/2024	EUR	500	681	Utilities		Y			Y		Y	Y					
XS1140300663	13/11/2014	Verbund AG	VERAV	1.5	20/11/2024	EUR	500	624	Utilities	Y		Y										
XS1197336263	04/03/2015	Vestas Wind Systems A/S	VWSDC	2.75	11/03/2022	EUR	500	554	Utilities	Y												
XS1218319702	08/04/2015	Unibail-Rodamco-Westfield	ULFP	1	14/03/2025	EUR	500	539	Industrials							Y			Y			
XS1222743061	17/04/2015	Transport for London - TfL	TRANLN	2.125	24/04/2025	GBP	400	598	Real Estate							Y				Y		
XS1241581179	28/05/2015	TenneT Holding BV	TENN	0.875	04/06/2021	EUR	500	547	Industrials	Y												
XS1241581096	28/05/2015	TenneT Holding BV	TENN	1.75	04/06/2027	EUR	500	547	Utilities	Y												
XS1242327168	29/05/2015	BRF SA	BRFSBZ	2.75	03/06/2022	EUR	500	549	Utilities	Y	Y	Y		Y		Y	Y			Y	Y	
US25389JAL08	18/06/2015	Digital Realty Trust LP	DLR	3.95	01/07/2022	USD	500	500	Consumer, Cyclical										Y			
US268317AS33	07/10/2015	EDF	EDF	3.625	13/10/2025	USD	1,250	1,250	Real Estate						Y							
US843646AM23	12/11/2015	Southern Power Co	SO	4.15	01/12/2025	USD	500	500	Utilities	Y	Y											
US037833BU32	16/02/2016	Apple Inc	AAPL	2.85	23/02/2023	USD	1,500	1,500	Utilities	Y	Y	Y	Y	Y		Y	Y	Y	Y			Y
US44920UAG31	07/03/2016	Hyundai Capital Services Inc	HYUCAP	2.875	16/03/2021	USD	500	500	Industrials											Y		
XS1398476793	14/04/2016	Iberdrola International BV	IBESM	1.125	21/04/2026	EUR	1,000	1,127	Consumer, Cyclical	Y	Y	Y	Y			Y						
FR0013170834	09/05/2016	Fonciere des Regions	COVFP	1.875	20/05/2026	EUR	500	569	Utilities							Y		Y				
XS1432384664	06/06/2016	TenneT Holding BV	TENN	1	13/06/2026	EUR	500	568	Real Estate	Y												
XS1432384409	06/06/2016	TenneT Holding BV	TENN	1.875	13/06/2036	EUR	500	568	Utilities	Y												
XS1434560642	13/06/2016	Southern Power Co	SO	1	20/06/2022	EUR	600	678	Utilities	Y	Y											
XS1435056426	13/06/2016	Southern Power Co	SO	1.85	20/06/2026	EUR	500	565	Utilities	Y	Y											
XS1490726590	08/09/2016	Iberdrola International BV	IBESM	0.375	15/09/2025	EUR	700	788	Real Estate	Y	Y	Y	Y			Y						
US59284MAA27	22/09/2016	Mexico City Airport Trust	MEXCAT	4.25	31/10/2026	USD	1,000	1,000	Utilities							Y						
US59284MAB00	22/09/2016	Mexico City Airport Trust	MEXCAT	5.5	31/10/2046	USD	1,000	1,000	Industrials							Y						
FR0013213295	06/10/2016	EDF	EDF	1	13/10/2026	EUR	1,750	1,951	Industrials	Y	Y			Y								
XS1505568136	10/10/2016	TenneT Holding BV	TENN	1.25	24/10/2033	EUR	500	557	Utilities	Y												
CND10000C3W2	19/10/2016	State Grid Corp of China	CHGRID	2.8	20/10/2019	CNY	5,000	743	Utilities	Y												
CND10000C3X0	19/10/2016	State Grid Corp of China	CHGRID	2.99	20/10/2021	CNY	5,000	743	Utilities	Y												
XS1509084775	24/10/2016	MTR Corp (CI) Ltd	MTRC	2.5	02/11/2026	USD	600	600	Utilities										Y	Y		
US843646AS92	10/11/2016	Southern Power Co	SO	1.95	15/12/2019	USD	600	600	Industrials	Y	Y											
XS1527758145	24/11/2016	Iberdrola Finanzas SAU	IBESM	1	07/03/2024	EUR	750	792	Utilities	Y	Y	Y	Y			Y						
US31572UAF30	11/01/2017	Fibra Overseas Finance Ltd	FIBRBZ	5.5	17/01/2027	USD	700	700	Utilities					Y			Y	Y			Y	
XS1550149204	09/01/2017	ENEL	ENELIM	1	16/09/2024	EUR	1,250	1,322	Basic Materials	Y	Y	Y				Y						
XS1575444622	28/02/2017	Iberdrola Finanzas SAU	IBESM	1	07/03/2025	EUR	1,000	1,058	Utilities	Y	Y	Y	Y			Y						
FR0013245859	15/03/2017	ENGIE SA	ENGIFP	0.875	27/03/2024	EUR	700	751	Utilities							Y						
FR0013245867	15/03/2017	ENGIE SA	ENGIFP	1.5	27/03/2028	EUR	800	859	Utilities							Y						
XS1591694481	29/03/2017	TenneT Holding BV	TENN	2.995	Perp	EUR	1,100	1,184	Utilities	Y												
US46128MAJ09	30/03/2017	Inversiones CMPC SA	CMPCCI	4.375	04/04/2027	USD	500	500	Utilities							Y	Y				Y	
US48305QAC78	25/04/2017	Kaiser Foundation Hospitals	KPERM	3.15	01/05/2027	USD	575	575	Basic Materials							Y	Y	Y	Y			Y
XS1613140489	09/05/2017	Repsol	REPSM	0.5	23/05/2022	EUR	500	544	Consumer, Non-cyclical							Y						
XS1577956789	14/06/2017	Three Gorges	YANTZE	1.3	21/06/2024	EUR	650	729	Energy			Y										
XS1632897762	12/06/2017	TenneT Holding BV	TENN	0.75	26/06/2025	EUR	500	560	Utilities	Y												
XS1632897929	12/06/2017	TenneT Holding BV	TENN	1.375	26/06/2029	EUR	500	560	Utilities	Y												

D: Corporate green bonds, by use of proceeds

ISIN	Pricing Date	Company	Ticker	Coupon	Maturity Date	Currency	Outstanding (LCLmn)	Outst. (USDmn)	Sector	Wind	Solar	Hydro	Geo	Bio	Unspecified	Energy efficiency	Water	Waste Mgt	Low carbon buildings	Low carbon transport	Forestry	Green materials
US037833CX61	13/06/2017	Apple Inc	AAPL	3	20/06/2027	USD	1,000	1,000	Utilities	Y	Y	Y	Y	Y		Y	Y	Y	Y			Y
ES0200002022	28/06/2017	Adif Alta Velocidad	ADIFAL	0.8	05/07/2023	EUR	600	683	Industrials							Y				Y		
US05502JAA88	27/07/2017	Azure Power Energy Ltd	AZUPOE	5.5	03/11/2022	USD	500	500	Industrials		Y											
FR0013281755	04/09/2017	Icade SA	ICADFP	1.5	13/09/2027	EUR	600	714	Utilities							Y		Y				
XS1676952481	30/08/2017	SSE plc	SSELN	0.875	06/09/2025	EUR	600	713	Real Estate	Y												
XS1682538183	06/09/2017	Iberdrola Finanzas SAU	IBESM	1.25	13/09/2027	EUR	750	894	Utilities	Y	Y	Y	Y			Y						
US49835LAB71	12/09/2017	klabin Finance SA	KLAB	4.875	19/09/2027	USD	500	500	Utilities						Y							
US59284MAC82	13/09/2017	Mexico City Airport Trust	MEXCAT	3.875	30/04/2028	USD	1,000	1,000	Basic Materials							Y	Y	Y	Y			
US59284MAD65	13/09/2017	Mexico City Airport Trust	MEXCAT	5.5	31/07/2047	USD	3,000	3,000	Industrials							Y	Y	Y	Y			
FR0013284247	19/09/2017	ENGIE SA	ENGIFP	0.375	28/02/2023	EUR	500	600	Industrials	Y		Y		Y		Y						
FR0013284254	19/09/2017	ENGIE SA	ENGIFP	1.375	28/02/2029	EUR	750	900	Utilities	Y		Y		Y		Y						
XS1704789590	17/10/2017	IREN SpA	IREIM	1.5	24/10/2027	EUR	500	588	Utilities		Y	Y				Y	Y	Y				
XS1702729275	12/10/2017	innogy Finance BV	IGYGY	1.25	19/10/2027	EUR	850	1,006	Utilities	Y	Y	Y	Y			Y				Y		
XS1718393439	08/11/2017	Gas Natural Fenosa	NTGYSM	0.875	15/05/2025	EUR	800	928	Utilities	Y	Y											
XS1720639779	14/11/2017	Toyota Motor Credit Corp	TOYOTA	0	21/07/2021	EUR	600	708	Utilities							Y						
XS1721244371	14/11/2017	Iberdrola International BV	IBESM	1.875	Perp	EUR	1,000	1,180	Consumer, Cyclical	Y		Y										
XS1720192696	16/11/2017	Orsted A/S	ORSTED	2.25	24/11/3017	EUR	500	589	Utilities						Y							
XS1721760541	16/11/2017	Orsted A/S	ORSTED	1.5	26/11/2029	EUR	750	883	Utilities						Y							
US05351WAA18	16/11/2017	Avangrid Inc	AGR	3.15	01/12/2024	USD	600	600	Utilities	Y	Y					Y						
XS1725553066	04/12/2017	CGNPC International Ltd	CHGDNU	1.625	11/12/2024	EUR	500	593	Utilities	Y	Y											
XS1732400319	30/11/2017	Ferrovie dello Stato Italiane	FERROV	0.875	07/12/2023	EUR	600	714	Utilities											Y		
XS1750986744	09/01/2018	ENEL	ENELIM	1.125	16/09/2026	EUR	1,250	1,492	Industrials	Y	Y	Y	Y									
FR0013310505	10/01/2018	ENGIE SA	ENGIFP	1.375	Perp	EUR	1,000	1,195	Utilities	Y	Y	Y	Y	Y								
XS1794209459	15/03/2018	Paprec Holding SA	PAPREC	4	31/03/2025	EUR	575	708	Utilities						Y							
XS1792571652	19/03/2018	Beijing Capital Polaris	BEICAP	4.25	26/03/2021	USD	500	500	Utilities							Y	Y	Y		Y		
XS1797138960	19/03/2018	Iberdrola International BV	IBESM	2.625	Perp	EUR	700	863	Utilities						Y							
XS1799545329	12/04/2018	ACS Servicios	ACSSCE	1.875	20/04/2026	EUR	750	925	Utilities							Y	Y	Y				
US85511XAC48	18/04/2018	Star Energy	STAREN	6.75	24/04/2033	USD	570	570	Industrials				Y									
ES0200002030	23/04/2018	Adif Alta Velocidad	ADIFAL	1.25	04/05/2026	EUR	600	733	Energy							Y				Y		
US23338VAH96	30/04/2018	DTE Electric Co	DTE	4.05	15/05/2048	USD	525	525	Industrials	Y	Y					Y						
XS1828037587	22/05/2018	TenneT Holding BV	TENN	1.375	05/06/2028	EUR	500	589	Utilities	Y												
XS1828037827	22/05/2018	TenneT Holding BV	TENN	2	05/06/2034	EUR	750	883	Utilities	Y												
XS1847692636	21/06/2018	Iberdrola Finanzas SAU	IBESM	1.25	28/10/2026	EUR	750	870	Utilities	Y												
XS1858912915	16/07/2018	TERNA	TRNIM	1	23/07/2023	EUR	750	878	Utilities	Y	Y	Y	Y	Y		Y						
US50064YAN31	19/07/2018	Korea Hydro & Nuclear	KOHNPW	3.75	25/07/2023	USD	600	600	Utilities	Y	Y	Y				Y				Y		
XS1867412006	04/09/2018	CGNPC International Ltd	CHGDNU	2	11/09/2025	EUR	500	579	Utilities	Y	Y											
XS1875284702	28/08/2018	SSE plc	SSELN	1.375	04/09/2027	EUR	650	760	Utilities	Y												
XS1881533563	12/09/2018	IREN SpA	IREIM	1.95	19/09/2025	EUR	500	581	Utilities		Y	Y				Y		Y				
FR0013372299	10/10/2018	Societe du Grand Paris	SOGRPR	1.125	22/10/2028	EUR	1,750	2,016	Utilities									Y		Y		
US461070AP91	19/09/2018	Interstate Power & Light Co	LNT	4.1	26/09/2028	USD	500	500	Utilities	Y	Y											
XS1886399093	26/09/2018	Getlink SE	GETFP	3.625	01/10/2023	EUR	550	646	Utilities							Y		Y		Y		
XS1893621026	09/10/2018	EDP Finance BV	EDPPL	1.875	13/10/2025	EUR	600	689	Industrials	Y	Y											
XS1900101046	22/10/2018	Schiphol Group	LUCSHI	1.5	05/11/2030	EUR	500	573	Utilities							Y			Y	Y		
XS1901055472	24/10/2018	EnBW	ENBW	1.875	31/10/2033	EUR	500	570	Industrials	Y	Y							Y		Y		
US26442CAX20	05/11/2018	Duke Energy Carolinas LLC	DUK	3.95	15/11/2028	USD	650	650	Utilities		Y					Y						

Source: Dealogic, Bloomberg, HSBC

Disclosure appendix

Analyst Certification

The following analyst(s), economist(s), or strategist(s) who is(are) primarily responsible for this report, including any analyst(s) whose name(s) appear(s) as author of an individual section or sections of the report and any analyst(s) named as the covering analyst(s) of a subsidiary company in a sum-of-the-parts valuation certifies(y) that the opinion(s) on the subject security(ies) or issuer(s), any views or forecasts expressed in the section(s) of which such individual(s) is(are) named as author(s), and any other views or forecasts expressed herein, including any views expressed on the back page of the research report, accurately reflect their personal view(s) and that no part of their compensation was, is or will be directly or indirectly related to the specific recommendation(s) or views contained in this research report: Michael Ridley and Peter Barnshaw

Important disclosures

Fixed income: Basis for financial analysis

This report is designed for, and should only be utilised by, institutional investors. Furthermore, HSBC believes an investor's decision to make an investment should depend on individual circumstances such as the investor's existing holdings and other considerations.

HSBC believes that investors utilise various disciplines and investment horizons when making investment decisions, which depend largely on individual circumstances such as the investor's existing holdings, risk tolerance and other considerations. Given these differences, HSBC has three principal aims in its fixed income research: 1) to identify long-term investment opportunities based on particular themes or ideas that may affect the future earnings or cash flows of companies in corporate credit and based on country-specific ideas or themes that may affect the performance of these bonds in the case of covered bonds, in both cases on a six-month time horizon; 2) to identify trade ideas on a time horizon of up to three months, relating to specific instruments and segments of the yield curve, which are predominantly derived from relative value considerations or driven by events and which may differ from our long-term credit opinion on an issuer. Buy or Sell refer to a trade call to buy or sell that given instrument; 3) to express views on the likely future performance of sectors, benchmark indices or markets in our fixed income strategy products. HSBC has assigned a fundamental recommendation structure, as described below, only for its long-term investment opportunities.

HSBC believes an investor's decision to buy or sell a bond should depend on individual circumstances such as the investor's existing holdings and other considerations. Different securities firms use a variety of terms as well as different systems to describe their recommendations. Investors should carefully read the definitions of the recommendations used in each research report. In addition, because research reports contain more complete information concerning the analysts' views, investors should carefully read the entire research report and should not infer its contents from the recommendation. In any case, recommendations should not be used or relied on in isolation as investment advice.

HSBC Global Research is not and does not hold itself out to be a Credit Rating Agency as defined under the Hong Kong Securities and Futures Ordinance.

Definitions for fundamental credit and covered bond recommendations from 22 April 2016

Overweight: For corporate credit, the issuer's fundamental credit profile is expected to improve over the next six months. For covered bonds, the bonds issued in this country are expected to outperform those of the other countries in our coverage over the next six months.

Neutral: For corporate credit, the issuer's fundamental credit profile is expected to remain stable over the next six months. For covered bonds, the bonds issued in this country are expected to perform in line with those of the other countries in our coverage over the next six months.

Underweight: For corporate credit, the issuer's fundamental credit profile is expected to deteriorate over the next six months. For covered bonds, the bonds issued in this country are expected to underperform those of other countries in our coverage over the next six months.

Prior to this date, fundamental recommendations for corporate credit were applied on the following basis:

Overweight: The credits of the issuer were expected to outperform those of other issuers in the sector over the next six months.

Neutral: The credits of the issuer were expected to perform in line with those of other issuers in the sector over the next six months.

Underweight: The credits of the issuer were expected to underperform those of other issuers in the sector over the next six months.

Distribution of fundamental credit and covered bond recommendations

As of 07 January 2019, the distribution of all independent fundamental credit recommendations published by HSBC is as follows:

	All Covered issuers		Issuers to whom HSBC has provided Investment Banking in the past 12 months	
	Count	Percentage	Count	Percentage
Overweight	88	22	46	52
Neutral	231	57	109	47
Underweight	89	21	19	21

Source: HSBC

For the distribution of non-independent ratings published by HSBC, please see the disclosure page available at <http://www.hsbcnet.com/gbm/financial-regulation/investment-recommendations-disclosures>.

To view a list of all the independent fundamental recommendations disseminated by HSBC during the preceding 12-month period, and the location where we publish our quarterly distribution of non-fundamental recommendations, please use the following links to access the disclosure page:

Clients of Global Research and Global Banking and Markets: www.research.hsbc.com/A/Disclosures

Clients of HSBC Private Banking: www.research.privatebank.hsbc.com/Disclosures

HSBC & Analyst disclosures**Disclosure checklist**

Company	Ticker	Recent price	Price date	Disclosure
GETLINK GROUP	GETP.PA	11.70	07 Jan 2019	7
IBERDROLA	IBE.MC	7.12	07 Jan 2019	1, 2, 4, 5, 6, 7
KFW BANKENGRUPPE	-	-	-	2, 6
NEDERLANDSE WATERSCHAPSBANK	-	-	-	1, 5, 6, 7
TORONTO DOMINION BANK	TD.TO	67.69	07 Jan 2019	1, 4, 5, 6, 7

Source: HSBC

- 1 HSBC has managed or co-managed a public offering of securities for this company within the past 12 months.
- 2 HSBC expects to receive or intends to seek compensation for investment banking services from this company in the next 3 months.
- 3 At the time of publication of this report, HSBC Securities (USA) Inc. is a Market Maker in securities issued by this company.
- 4 As of 30 November 2018, HSBC beneficially owned 1% or more of a class of common equity securities of this company.
- 5 As of 30 November 2018, this company was a client of HSBC or had during the preceding 12 month period been a client of and/or paid compensation to HSBC in respect of investment banking services.
- 6 As of 30 November 2018, this company was a client of HSBC or had during the preceding 12 month period been a client of and/or paid compensation to HSBC in respect of non-investment banking securities-related services.
- 7 As of 30 November 2018, this company was a client of HSBC or had during the preceding 12 month period been a client of and/or paid compensation to HSBC in respect of non-securities services.
- 8 A covering analyst/s has received compensation from this company in the past 12 months.
- 9 A covering analyst/s or a member of his/her household has a financial interest in the securities of this company, as detailed below.
- 10 A covering analyst/s or a member of his/her household is an officer, director or supervisory board member of this company, as detailed below.

- 11 At the time of publication of this report, HSBC is a non-US Market Maker in securities issued by this company and/or in securities in respect of this company
- 12 As of 03 Jan 2019, HSBC beneficially held a net long position of more than 0.5% of this company's total issued share capital, calculated according to the SSR methodology.
- 13 As of 03 Jan 2019, HSBC beneficially held a net short position of more than 0.5% of this company's total issued share capital, calculated according to the SSR methodology.

HSBC and its affiliates will from time to time sell to and buy from customers the securities/instruments, both equity and debt (including derivatives) of companies covered in HSBC Research on a principal or agency basis or act as a market maker or liquidity provider in the securities/instruments mentioned in this report.

Analysts, economists, and strategists are paid in part by reference to the profitability of HSBC which includes investment banking, sales & trading, and principal trading revenues.

Whether, or in what time frame, an update of this analysis will be published is not determined in advance.

Non-U.S. analysts may not be associated persons of HSBC Securities (USA) Inc, and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with the subject company, public appearances and trading securities held by the analysts.

Economic sanctions imposed by the EU and OFAC prohibit transacting or dealing in new debt or equity of Russian SSI entities. This report does not constitute advice in relation to any securities issued by Russian SSI entities on or after July 16 2014 and as such, this report should not be construed as an inducement to transact in any sanctioned securities.

For disclosures in respect of any company mentioned in this report, please see the most recently published report on that company available at www.hsbcnet.com/research. HSBC Private Banking clients should contact their Relationship Manager for queries regarding other research reports. In order to find out more about the proprietary models used to produce this report, please contact the authoring analyst.

Additional disclosures

- 1 This report is dated as at 09 January 2019.
- 2 All market data included in this report are dated as at close 08 January 2019, unless a different date and/or a specific time of day is indicated in the report.
- 3 HSBC has procedures in place to identify and manage any potential conflicts of interest that arise in connection with its Research business. HSBC's analysts and its other staff who are involved in the preparation and dissemination of Research operate and have a management reporting line independent of HSBC's Investment Banking business. Information Barrier procedures are in place between the Investment Banking, Principal Trading, and Research businesses to ensure that any confidential and/or price sensitive information is handled in an appropriate manner.
- 4 You are not permitted to use, for reference, any data in this document for the purpose of (i) determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments, (ii) determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument, and/or (iii) measuring the performance of a financial instrument.
- 5 As of 28 Dec 2018 HSBC owned a significant interest in the debt securities of the following company(ies): KFW BANKENGRUPPE, NEDERLANDSE WATERSCHAPSBANK

Production & distribution disclosures

1. This report was produced and signed off by the author on 08 Jan 2019 14:54 GMT.
2. In order to see when this report was first disseminated please see the disclosure page available at <https://www.research.hsbc.com/R/34/cgRXzfk>

Disclaimer

Legal entities as at 30 November 2017

'UAE' HSBC Bank Middle East Limited, Dubai; 'HK' The Hongkong and Shanghai Banking Corporation Limited, Hong Kong; 'TW' HSBC Securities (Taiwan) Corporation Limited; 'CA' HSBC Securities (Canada) Inc.; HSBC Bank, Paris Branch; HSBC France; 'DE' HSBC Trinkaus & Burkhardt AG, Düsseldorf; 000 HSBC Bank (RR), Moscow; 'IN' HSBC Securities and Capital Markets (India) Private Limited, Mumbai; 'JP' HSBC Securities (Japan) Limited, Tokyo; 'EG' HSBC Securities Egypt SAE, Cairo; 'CN' HSBC Investment Bank Asia Limited, Beijing Representative Office; The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch; The Hongkong and Shanghai Banking Corporation Limited, Seoul Securities Branch; The Hongkong and Shanghai Banking Corporation Limited, Seoul Branch; HSBC Securities (South Africa) (Pty) Ltd, Johannesburg; HSBC Bank plc, London, Madrid, Milan, Stockholm, Tel Aviv; 'US' HSBC Securities (USA) Inc, New York; HSBC Yatirim Menkul Degerler AS, Istanbul; HSBC México, SA, Institución de Banca Múltiple, Grupo Financiero HSBC; HSBC Bank Australia Limited; HSBC Bank Argentina SA; HSBC Saudi Arabia Limited; The Hongkong and Shanghai Banking Corporation Limited, New Zealand Branch incorporated in Hong Kong SAR; The Hongkong and Shanghai Banking Corporation Limited, Bangkok Branch; PT Bank HSBC Indonesia; HSBC Qianhai Securities Limited

Issuer of report

HSBC Bank plc
8 Canada Square, London
E14 5HQ, United Kingdom
Telephone: +44 20 7991 8888
Fax: +44 20 7992 4880
Website: www.research.hsbc.com

This document is issued and approved in the United Kingdom by HSBC Bank plc for the information of its Clients (as defined in the Rules of FCA) and those of its affiliates only. It is not intended for Retail Clients in the UK. If this research is received by a customer of an affiliate of HSBC, its provision to the recipient is subject to the terms of business in place between the recipient and such affiliate. In Australia, this publication has been distributed by The Hongkong and Shanghai Banking Corporation Limited (ABN 65 117 925 970, AFSL 301737) for the general information of its "wholesale" customers (as defined in the Corporations Act 2001). Where distributed to retail customers, this research is distributed by HSBC Bank Australia Limited (ABN 48 006 434 162, AFSL No. 232595). These respective entities make no representations that the products or services mentioned in this document are available to persons in Australia or are necessarily suitable for any particular person or appropriate in accordance with local law. No consideration has been given to the particular investment objectives, financial situation or particular needs of any recipient. The document is distributed in Hong Kong by The Hongkong and Shanghai Banking Corporation Limited and in Japan by HSBC Securities (Japan) Limited. In Korea, this publication is distributed by The Hongkong and Shanghai Banking Corporation Limited, Seoul Securities Branch ("HBAP SLS") for the general information of professional investors specified in Article 9 of the Financial Investment Services and Capital Markets Act ("FSCMA"). This publication is not a prospectus as defined in the FSCMA. It may not be further distributed in whole or in part for any purpose. HBAP SLS is regulated by the Financial Services Commission and the Financial Supervisory Service of Korea.

Each of the companies listed above (the "Participating Companies") is a member of the HSBC Group of Companies, any member of which may trade for its own account as Principal, may have underwritten an issue within the last 36 months or, together with its Directors, officers and employees, may have a long or short position in securities or instruments or in any related instrument mentioned in the document. Brokerage or fees may be earned by the Participating Companies or persons associated with them in respect of any business transacted by them in all or any of the securities or instruments referred to in this document. This publication is distributed in New Zealand by The Hongkong and Shanghai Banking Corporation Limited, New Zealand Branch incorporated in Hong Kong SAR.

The information in this document is derived from sources the Participating Companies believe to be reliable but which have not been independently verified. The Participating Companies make no guarantee of its accuracy and completeness and are not responsible for errors of transmission of factual or analytical data, nor shall the Participating Companies be liable for damages arising out of any person's reliance upon this information. All charts and graphs are from publicly available sources or proprietary data. The opinions in this document constitute the present judgement of the Participating Companies, which is subject to change without notice. From time to time research analysts conduct site visits of covered issuers. HSBC policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

This document is neither an offer to sell, purchase or subscribe for any investment nor a solicitation of such an offer. This document is intended for the use of institutional and professional customers and is not intended for the use of private customers of the Participating Companies. This document is intended for distribution in the United States solely to "major US institutional investors" as defined in Rule 15a-6 of the US Securities Exchange Act of 1934 and may not be furnished to any other person in the United States. Each major US institutional investor that receives this document by such act agrees that it shall not distribute or provide a copy of the document to any other person. Such recipient should note that any transactions effected on their behalf will be undertaken through HSBC Securities (USA) Inc. in the United States. Note, however, that HSBC Securities (USA) Inc. is not distributing this report, has not contributed to or participated in its preparation, and does not take responsibility for its contents. In Singapore, this publication is distributed by The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch for the general information of institutional investors or other persons specified in Sections 274 and 304 of the Securities and Futures Act (Chapter 289) ("SFA") and accredited investors and other persons in accordance with the conditions specified in Sections 275 and 305 of the SFA. Only Economics or Currencies reports are intended for distribution to a person who is not an Accredited Investor, Expert Investor or Institutional Investor as defined in SFA. The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch accepts legal responsibility for the contents of reports pursuant to Regulation 32C(1)(d) of the Financial Advisers Regulations. This publication is not a prospectus as defined in the SFA. This publication is not a prospectus as defined in the SFA. It may not be further distributed in whole or in part for any purpose. The Hongkong and Shanghai Banking Corporation Limited Singapore Branch is regulated by the Monetary Authority of Singapore. Recipients in Singapore should contact a "Hongkong and Shanghai Banking Corporation Limited, Singapore Branch" representative in respect of any matters arising from, or in connection with this report. Please refer to The Hongkong and Shanghai Banking Corporation Limited Singapore Branch's website at www.business.hsbc.com.sg for contact details. HSBC México, S.A., Institución de Banca Múltiple, Grupo Financiero HSBC is authorized and regulated by Secretaría de Hacienda y Crédito Público and Comisión Nacional Bancaria y de Valores (CNBV).

The document is intended to be distributed in its entirety. Unless governing law permits otherwise, you must contact a HSBC Group member in your home jurisdiction if you wish to use HSBC Group services in effecting a transaction in any investment mentioned in this document. HSBC Bank plc is registered in England No 14259, is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. (070905)

In Canada, this document has been distributed by HSBC Securities (Canada) Inc. (member IIROC), and/or its affiliates. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offense.

If you are an HSBC Private Banking ("PB") customer with approval for receipt of relevant research publications by an applicable HSBC legal entity, you are eligible to receive this publication. To be eligible to receive such publications, you must have agreed to the applicable HSBC entity's terms and conditions ("KRC Terms") for access to the KRC, and the terms and conditions of any other internet banking service offered by that HSBC entity through which you will access research publications using the KRC. Distribution of this publication is the sole responsibility of the HSBC entity with whom you have agreed the KRC Terms.

If you do not meet the aforementioned eligibility requirements please disregard this publication and, if you are a customer of PB, please notify your Relationship Manager. Receipt of research publications is strictly subject to the KRC Terms, which can be found at <https://research.privatebank.hsbc.com/> – we draw your attention also to the provisions contained in the Important Notes section therein.

© Copyright 2019, HSBC Bank plc, ALL RIGHTS RESERVED. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, on any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of HSBC Bank plc. MCI (P) 065/01/2019, MCI (P) 016/02/2018

[1111131]