

# The Green Bond



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[SEB Green Bonds Website](#)

## Letter to the Reader

*Time for the Green Bond Principles' (GBP) Annual Meeting*

*We noticed that a number of our competitors are starting to pitch for election to the Executive Committee of the GBP. We are also up for re-election, but won't be using the same approach; instead we hope that our strategy of collaborations and sharing our intelligence with the broader market on an ongoing basis will gain your vote and allow us to continue to contribute to the GBP, as we have done since its inception.*

*As example, SEB has over the last 6 months allocated ½ a person to chair a working group, on behalf of the GBP, and interview external reviewers to structure and formalise the way reviewers work with their assessments – a task which has been heavily in demand as market participants seek greater clarity on the increasingly complex universe of such independent assessments. The outcome will be shared at the upcoming GBP AGM.*

*(Continues on Page 2)*

## Christopher Flensburg

Head of Climate & Sustainable Finance, SEB



## Executive Summary

Following an unbridled winter, the green bond market shifted towards a more tentative pattern of issuance growth through the spring, with brighter growth prospects emerging from some slightly overcast patches by April. Our 2018 base-case issuance scenario is maintained at **USD 175 bn for 2018**, with the possibility to surprise to the upside once again and cross to **USD 210 bn**.

Helped by a very generous February, issuance in **1Q18** just managed to break though the previous year's 1Q record USD 31 bn of issuance, rising by 9% to **USD 34 bn**. Issuance activity may have been dampened in 1Q18 while credit spreads widened significantly. Total cumulative issuance surpassed the **USD 400 bn** mark in 1Q.

April issuance rose by 32% YoY (to USD 11.5 bn) on the back of more attractive market conditions which lured numerous repeat issuers as well as newcomers, boosting 2018 issuance to **45.4 bn** (up 14% YoY); a figure that it took until the end of May to surpass last year.

Issuance from both **agencies** and **municipalities** appear below their potential, down -42% and -19% YoY, respectively. We are placing agencies on watch for a **downgrade** to their potential for 2018 issuance at the same time as we are placing an **upgrade** on the potential for **sovereigns**. The corporate green bond market has been a bright spot overall, with **non-financial corporates and financials** up by 44% and 23% YoY.

Geographic activity is already very broad and dispersed; with 31 jurisdictions featuring green bonds in 2018, compared to 40 in 2017 (and 50 in total since 2007). The center of gravity for the market continued its shift towards **Europe** in 2018 (33% of 2017 issuance to 51% by April).

With USD 7.3 bn of issuance the U.S. vaulted over Belgium's sovereign-led contribution, back into a familiar first place which it had held all throughout 2017. Green securitisations account for two thirds of U.S. issuance; with Fannie Mae cataloguing their USD 4.3 bn of green MBS issued that account for 60% of all U.S. issuance YTD.

In terms of currencies, a very active **corporate and sovereign EUR** market continued to dominate. **USD** returned to the stage and **CAD, AUD, and SEK** also proved popular currencies to target for supranational issuers raising green capital in 2018. The percentage of all SEK denominated bond issuance in green format set a world record of 12% by the end of Q1 2018 (and 11.7% YTD), up from 6.6% over the course of 2017.

**Social & sustainability bond** issuance surged to USD 6 bn by April (see [market snapshot](#)) and a solid pipeline of announced green, social and sustainability bond deals remains for March, or later in 2018 ([section 2](#)). New green bond [relative value & pricing analysis](#) available via SEB Research Portal.

## SEB Climate & Sustainable Finance Review

*Guest contributors welcomed in this edition:*

[Vasakronan](#) presents its 5 years of green bond experience, and [EBRD](#) offers reflections on impact reporting & financing the SDGs.

Further, summaries are provided from UN Environment's [Inquiry into the Design of a Sustainable Financial System](#) in addition to the [Sustainable Insurance Forum](#) joint position paper. [SEB](#) has also published its first Green Bond Investor Report.

## Letter to the Reader (cont.):

### **Time for the Green Bond Principles' (GBP) Annual Meeting**

...This is an example of how we have used our seat on the GBP Executive Committee to help acquire, consolidate and share knowledge, as we have been offering to the public through our regular market updates such as this one you are reading now.

### **Moving on to the UN's Sustainable Development Goals (SDGs)**

For 10 years we have learned about green and environmental factors and now we slowly begin to have an infrastructure and knowledge base which allows us to understand the basic financial links.

However, with the market moving forward beyond Climate Action, we are met with a further 16 goals with broad definitions and intangible performance measures, and so the obvious question to us becomes: How do we engage and keep the quality high at the same time?

The foundation of The Green Bond market is not built on a set of pre-requirements but on the back of activating existing competence and infrastructures to share best practice. By securing high transparency and clear communication, issuers have managed to obtain the trust of investors and even to some degree (based on the access and mission) improved their overall standing.

So we ask – can this be replicated with SDG Bonds and if so – where are the strengths, weaknesses and pitfalls. It is interesting to observe that the SDGs were constructed for and by governments, but have become of such interest to the private sector.

At SEB we think it is possible to expand across the SDGs, however, we also believe that a long lasting implementation of the SDGs will require a quantifiable performance of the relevant SDG – just like you have CO<sub>2</sub> for Climate, you will need to identify the individual SDGs “CO<sub>2</sub>” measurement, to assure money managers to allocate and steer allocations.

This can be done. In fact, last year, in a close collaboration with NWB Bank, SEB initiated a University-driven research on Affordable Housing, creating a pan-European Benchmark, which allows us to gain an understanding of the economic impact of well-driven (or the opposite) housing strategies.

In this edition of The Green Bond we received a contribution from Vasakronan (the World's 1<sup>st</sup> Corporate Green Bond issuer), and the European Bank for Reconstruction and Development (EBRD) who graciously share their views with our readership and the market on these complex issues.

Enjoy your reading,

**Christopher Flensburg**

Head of Climate & Sustainable Finance, SEB



## 1. Green Bond Market Review and 2018 Outlook

Following an unbridled winter which lifted 2017 full year issuance up **68%** Year-over-Year (YoY) to **USD 163 billion**<sup>1</sup>, the green bond market shifted towards a more tentative pattern of issuance growth through the spring, with brighter growth prospects emerging from some slightly overcast patches by April. Total cumulative issuance surpassed the USD 400 billion mark in March (Figure 1).<sup>2</sup>

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The market continues to mature and diversify; with over a dozen repeat issuers coming to market in the first quarter of 2018 (1Q18); some large economies featuring heightened activity (e.g. in Spain, Germany, Japan, and Indonesia) alongside new sectors (e.g. shipping), while issuers in other jurisdictions are taking time to digest the rapid acceleration and development of the market, and consolidating strategies elsewhere.

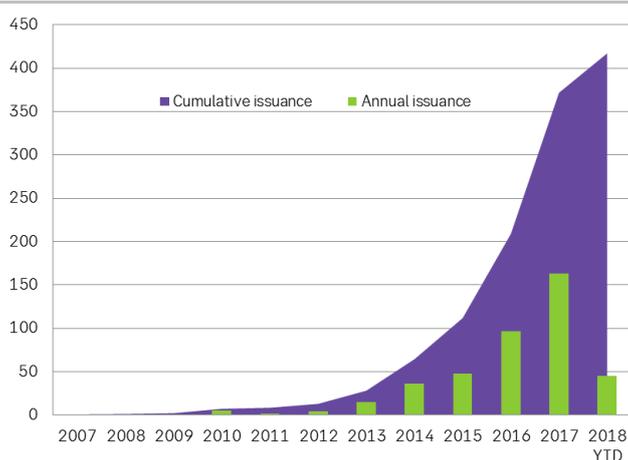
### Siri Sachs

Research Associate, Climate & Sustainable Finance; Associate, Corporate Finance

Helped by a very generous February, issuance in **1Q18** just managed to break through the previous year's 1Q record USD 31.1 billion of green bond issuance, rising by 9% to **USD 33.8 billion**. Issuance activity may have been dampened in 1Q18 while credit spreads widened significantly (e.g., the Libor–OIS Spread had been rising to levels previously seen in the 2008 Financial Crisis).

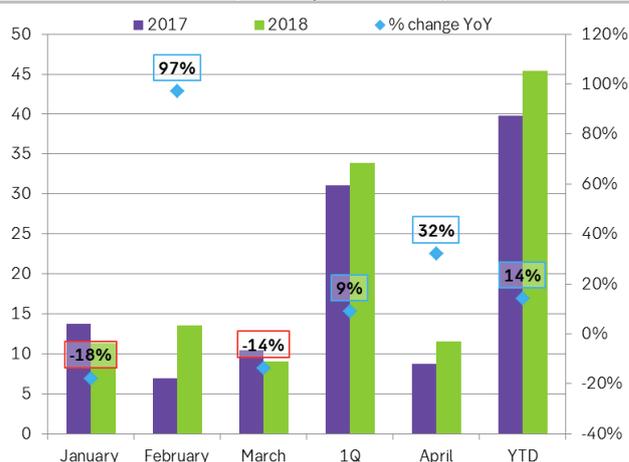
As shown in Figure 2, by the end of April velocity of issuance had picked up somewhat on the back of more supportive market conditions, with a 14% increase in cumulative issuance - YoY from April 2017<sup>3</sup>) to **45.4 billion**; a figure that it took until the end of May to surpass last year. A solid pipeline of announced deals remains for 2Q, or later in 2018 (see [Section 2](#)).

Figure 1. Total Cumulative Issuance (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data

Figure 2. Periodic issuance (USD Bn) and % change YoY



Source: SEB analysis based on Bloomberg and SEB data

The center of gravity for the market continued its shift towards **Europe** in 2018 (33% of 2017 issuance to 51% in 2018 Year-to-Date (YTD)<sup>4</sup> as shown in Figure 5). This shift occurred alongside increasing policy attention, as the European Commission adopted its sweeping [Action Plan on Sustainable Finance](#) in March (discussed in the previous edition), followed in April by the European Parliament's Committee on Economic and Monetary Affairs (ECON) [backing a resolution](#) to further harmonise EU capital markets with long-term sustainable objectives, in support of sustainable finance.

January 2018 may have appeared quieter historically (down -18% YoY), but was in fact very busy with **USD 11.3 billion** of issuance with participation from a wide range of corporates and financials, as well as supnationals. When adjusting for the USD 7.5 billion French green sovereign OAT issued last January, issuance in fact stands 51% higher YoY.

<sup>1</sup> SEB's revised 2017 year-end figure has not changed since the last edition, and matches BNEF/Bloomberg figures.

<sup>2</sup> SEB uses Bloomberg (BNEF) data which includes self-labelled green bonds as well as those tagged by Bloomberg as green bonds. For methodologies used to qualify green bonds see Bloomberg (2018) *Guide to Green Bonds on the Bloomberg Terminal*. Asset-level bonds, schuldscheine and private placements are included and pure plays are excluded. The data are supplemented by SEB from other sources to provide a more current assessment of issuance, since there is a lag for some green bonds being uploaded to the Bloomberg Terminal.

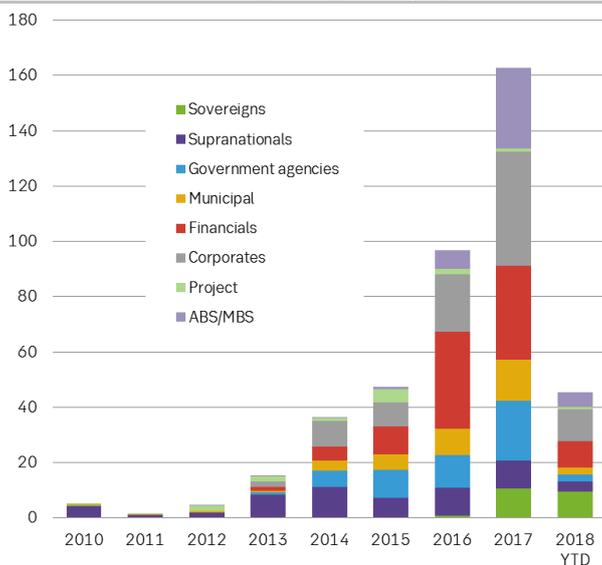
<sup>3</sup> Henceforth, YoY will refer to the period of 28 April 2017 to 30 April 2018.

<sup>4</sup> Henceforth, YTD will refer to the period of 1 January 2018 – 30 April 2018.

February 2018 was an exceptionally strong month, nearly doubling in volume YoY; with USD 13.6 billion slamming the door on the down-month historical trend by rising 28% from January levels.<sup>5</sup> However it was only an exceptional numerical month because of Belgium's EUR 4.5 billion green sovereign, following Indonesia's USD 1.25 billion inaugural green sukuk sovereign. Without these issues, February would have been more reflective of the fall in corporate issuance.

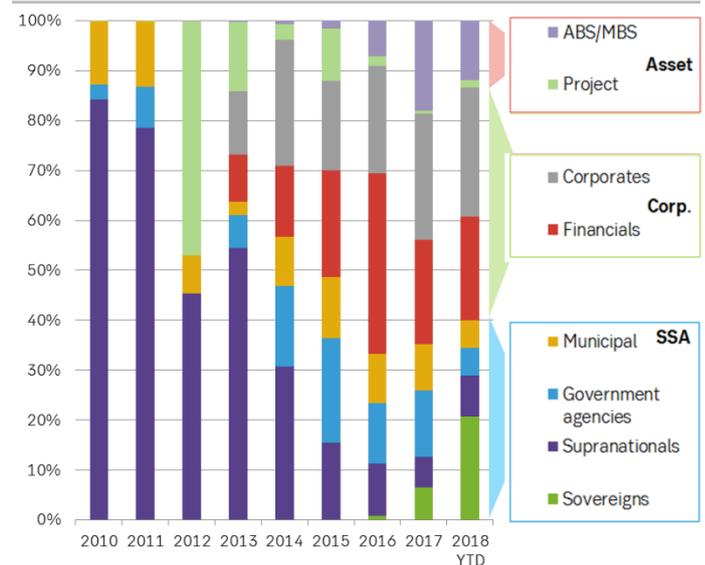
March was a slower month comparatively, down by 14% YoY with SSA issuance lagging across all categories, but still turning in a good set of trades totaling USD 9 billion. More notably, March featured the return of corporate borrowers, with large issues by Iberdrola and Paprec as well as Chinese financials.

**Figure 3. Green bond market growth (USD Bn) by sector**



Source: SEB analysis based on Bloomberg and SEB data. SSA: Sovereign, sub-sovereign (municipal/regional), Supranational and Agency.

**Figure 4. Sectoral evolution (% share of annual issuance)**



Source: SEB analysis based on Bloomberg and SEB data

April issuance rose by 32% YoY (to USD 11.5 billion) on the back of more attractive market conditions which attracted numerous repeat issuers as well as newcomers. France returned with a third EUR tap (USD 1.3 billion) of its sovereign, and the World Bank (IBRD) added a 19<sup>th</sup> currency to its roster of green bonds, with a Hong Kong dollar trade that also became the first supranational benchmark sized green bond issued in Hong Kong SAR, China.

International banks which had been somewhat absent since January came back in force, as well as agencies. Notable repeat deals include EUR 750 million from ABN AMRO, EUR 500 million from BNP Paribas, and SEK 3 billion from Kommuninvest, all of which SEB had the privilege to participate in, and there were also deals from ADIF-Alta Velocidad and BerlinHyp. Notable new corporate borrowers in April include ACS (Spain), DTE Electric (United States), Star Energy Geothermal (Indonesia), and Zuercher Kantonalbank (Switzerland).

A powerful constitution of underlying green infrastructure investment dynamics on both risk and opportunity sides of the equation as well as new policy attention stands ready to continue to support the momentum from 2017 and bolster green bond issuance in 2018.

As an example of market-led action, the overall buoyant first quarter also featured a number of announcements in the green bonds space; notably the launch of the [Green Bond Pledge](#) that seeks to have cities, public authorities and companies commit to increased use of green bond finance to ensure new infrastructure meets the challenges of climate change and contributes to the accelerated transformation of the economy that is necessary and achievable by 2020. The initiative, which was also welcomed by the [UN](#), was developed to build momentum for the September 2018 [Global Climate Action Summit](#) in San Francisco, by a dozen organisations

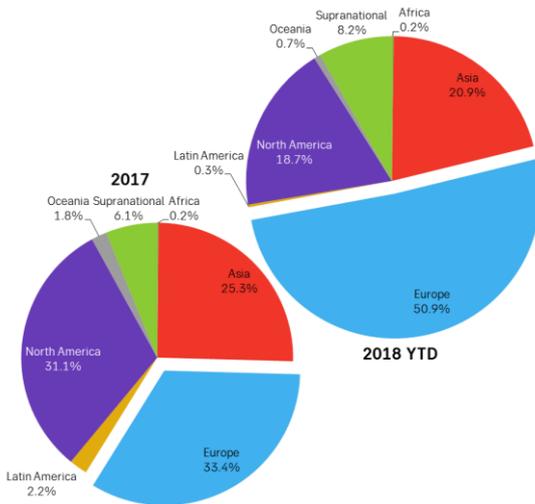
<sup>5</sup> SEB uses the "deal effective date" listed on Bloomberg to determine month of transaction to reflect a more accurate picture of the market dynamics and momentum around the time of the transaction (as opposed to the more arbitrary dates of announcements or settlements).

including CBI, Mission2020, CERES, CDP, Citizens Climate Lobby, California Governor's Office, California Treasurer's Office, Global Optimism, NRDC and The Climate Group.

The same groups also released an [invitation](#) to institutional investors to be signatories supporting the proposition that climate-related risk will increasingly exert pressure on infrastructure and capital project integrity, which bond issuers and investors must pay attention to when committing public resources and investment capital.

In Japan, Nippon Yusen Kaisha (NYK) announced it would become the world's first shipping company to issue a labelled green bond; which came alongside the International Maritime Organisation (IMO) reaching a landmark agreement that the shipping industry should target cutting emissions by a minimum of 50% by 2050 from 2008 levels.

**Figure 5. Regional distribution of green bond issuance**



Source: SEB analysis based on Bloomberg and SEB data

**Figure 6. Top 15 geography by issuance in 2018, incl. Supranational**

| Rank | Geography     | YTD 4/2018 (USD Bn) |
|------|---------------|---------------------|
| 1    | UNITED STATES | 7.30                |
| 2    | BELGIUM       | 5.55                |
| 3    | CHINA         | 4.83                |
| 4    | FRANCE        | 4.03                |
| 5    | SNAT          | 3.72                |
| 6    | SPAIN         | 2.73                |
| 7    | SWEDEN        | 2.27                |
| 8    | GERMANY       | 1.86                |
| 9    | INDONESIA     | 1.83                |
| 10   | ITALY         | 1.53                |
| 11   | NETHERLANDS   | 1.42                |
| 12   | NORWAY        | 1.24                |
| 13   | POLAND        | 1.23                |
| 14   | CANADA        | 1.19                |
| 15   | JAPAN         | 0.94                |

Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

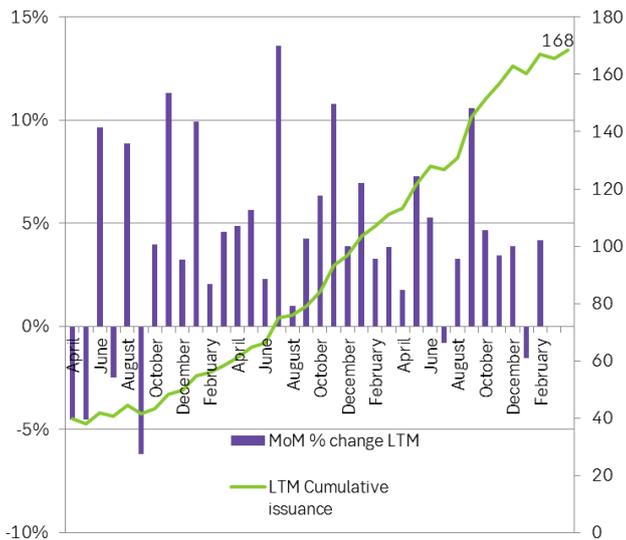
Geographic activity is already very broad and dispersed; with 31 jurisdictions<sup>6</sup> (excluding Supranationals) featuring green bond issuance in 2018, compared to 40 in 2017 (and 50 in total since 2007). In March and April, Iceland (Landsvirkjun) and Lebanon (Fransa Bank) joined the ranks of countries with domestic green bond issuers.

In terms of country rank, with USD 7.3 billion of issuance YTD the United States' vaulted over Belgium's sovereign-led contribution, back into a familiar first place which it had held all throughout 2017. Green securitisations account for two thirds of U.S. issuance; with Fannie Mae cataloguing their USD 4.3 billion of green MBS issued through March that account for 60% of all U.S. issuance YTD. At least three other US-securitisations occurred in 1Q focused on rooftop solar PV as well as PACE receivables. The remaining third is equally split between corporates (MidAmerican Energy and DTE Electric) and 18 municipalities, led by the California Infrastructure & Economic Development Bank, followed by the State of New York and D.C. Water.

As shown in Figure 8, a less serrated, more regular and granulated Chinese market returned to third place, matching 2017 issuance levels with 22 issuers adding USD 4.8 billion YTD. The distribution is dominated (78%) by corporate borrowers, split between financials (50%) and non-financial corporates (28%); the remainder comes from agencies (such as China Export-Import Bank) along with a burgeoning set of green securitisations and project bonds.

<sup>6</sup> Classified by Ultimate Parent Country of Risk.

Figure 7. Last Twelve Months Analysis / % change (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data

Figure 8. Chinese issuance compared (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data.

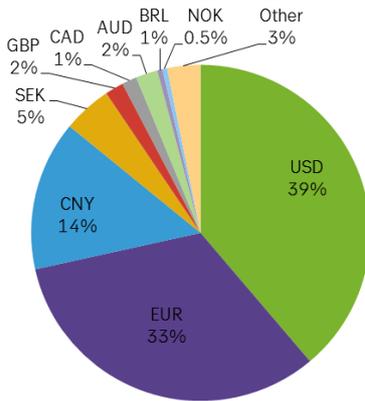
The French green bond market, held steady in fourth place with only six individual issuers; with the Agence France Tresor's sovereign OAT taking making up a third of the volume and two thirds coming from corporate non-financial (Engie, Paprec) and financials (BNP Paribas, CA-CIB and Fonciere INEA).

Supranationals held steady rounding out the top five (as is relatively usual in recent years), with five multilateral and regional development banks active in a wide variety of currencies and maturities through taps as well as new lines, totaling USD 3.7 billion. The European Investment Bank was leading the pack into April by volume, accounting for 73% of supranational issuance YTD on its own. Spain's sixth place rank was due to a burgeoning corporate non-financial sector accounting for 93% of issuance spread across three repeat issuers and the aforementioned new entrant ACS.

A bustling March and April helped Sweden to climb the ranks to seventh place with USD 2.3 billion of issuance courtesy of 11 repeat issuers. The field is led Vasakronan, the largest Swedish issuer, which marks its fifth year anniversary as the first corporate green bond issuer globally (also providing [a contribution to this edition](#)). Close behind in 2018 (and also by cumulative volume) is Kommuninvest, which returned with the aforementioned SEK benchmark transaction. This benchmark, as well as the many repeat issues and activity of foreign borrowers (e.g. KfW with the largest foreign issuer SEK green bond to date, and IFC with the longest SEK green bond to date) boosted the percentage of all SEK denominated bond issuance in green format to a world record of 12% by the end of Q1 2018 (and 11.7% YTD), up from 6.6% over the course of 2017.

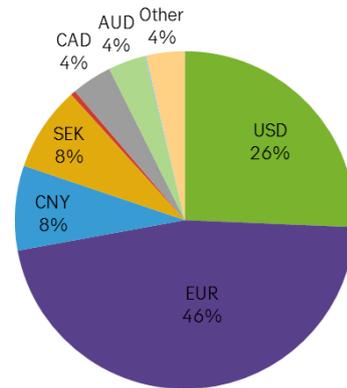
In terms of other currencies (Figures 7-8), the key takeaway from 1Q18 was that the market shifted towards Euros (46%). This trend is driven by strength in the corporate EUR market, with financials as well as non-financial corporates, such as utilities, alongside sovereigns favouring EUR. The USD green bond market (26%) made its return to the stage with the retrospective integration of Fannie Mae's green MBS (as they report figures quarterly), the Indonesian sovereign sukuk, but also large trades from MidAmerican Energy, Swire Properties and 18 U.S. municipalities. CAD, AUD, and SEK also proved popular currencies to target for supranational issuers raising green capital in 2018.

**Figure 9. Outstanding green bonds by currency 2008-2018**



Source: SEB analysis based on Bloomberg and SEB data

**Figure 10. 2018 YTD green bond issuance by currency**



Source: SEB analysis based on Bloomberg and SEB data. SNAT: Supranational

SEB's annual regional analysis (described in previous editions) suggests that 2018 will be a year of consolidation with more modest growth. This is reflected in our base-case scenario which we maintain showing the market having the potential to grow to **USD 175 billion in 2018**, with the possibility to surprise to the upside once again and cross to **USD 210 billion**. This range was constructed "bottom up" through a sector-by-sector analysis described in edition 1Q 2018 (1) that examines the potential for issuance across geographies and within the categories of Sovereign, Supranational, Agency, Municipal (and sub-sovereign), Corporate, Securitizations, and Project Bonds.

An analysis of moving Last Twelve Months (LTM) of green bond issuance shown in Figure 7 visualises how cumulative LTM figures have trended ever higher over the last two years, surpassing USD 100 billion in January 2017, peaking in December 2017 at USD 163 billion, pausing in January and then rising up to USD 168 billion over the last three months. This trend bodes well for our base case scenario of USD 175 billion of issuance for 2018.

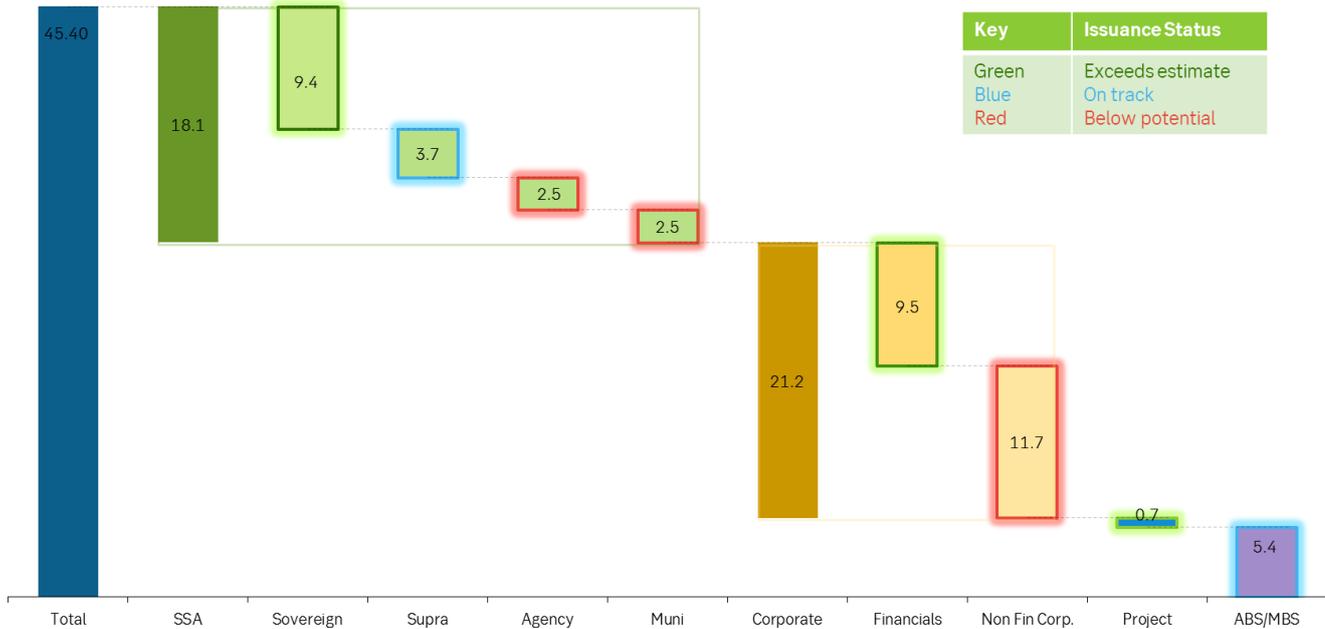
A waterfall diagram presented in Figure 11 shows how the USD 45.5 billion of issuance YTD can be broken down by classical public (SSA) and private (corporate and asset level) splits. In terms of SSA issuance, sovereign issuance is exceeding our expectations (closing in on full year 2017 levels already) and as such put our view for the year-end potential of USD 14 billion on watch for an upgrade.

Supranationals are well on track, up 126% YoY, and around a third of the way towards our view of their potential already. However, issuance from both agencies (such as National Development Banks and other domestic public financial institutions) and municipalities are well below their potential, down -42% and -19% YoY, respectively. We are placing agencies on watch for a downgrade to their potential for 2018 issuance.

The corporate green bond market has been a bright spot overall, with non-financial corporates and financials up by 44% and 23% YoY, respectively. Financials are doing very well and look to be on track to exceed our estimate based on the assumptions we set in place at the beginning of the year. Despite the even more promising result from non-financial corporates, we believe even this level of issuance is below its potential, due to the fact that some truly expansive geographies and sectors have yet to even get going.

With regards to other types of green bond issuers, securitisations appear to be well on track even though they are down by 24% YoY. This is because Fannie Mae green MBS have only been published through to March at the time of this publication. Finally, it has been a fairly busy year to date for green private placement project bonds, which are also proving popular financing mechanisms in emerging and developing economies.

Figure 11. Green bond issuance in 2018 by sector and sub-sector (USD Billion)



Notes: ABS/MBS = Asset Backed Securities/Mortgage Backed Securities; SSA = Sovereign, Supranational, Agency and Municipal, Regional and other sub-sovereign; Financials include Real Estate and Insurance; N-F Corp. = Non-Financial Corporates. SEB uses the BICS sector classification system with some adjustments using Bloomberg/MSCI green bond sector classifications. Bloomberg (see Guide to Green Bonds on the Bloomberg Terminal) methodologies used to qualify green bonds, including Schuldscheine and private placements, and excluding pure plays.

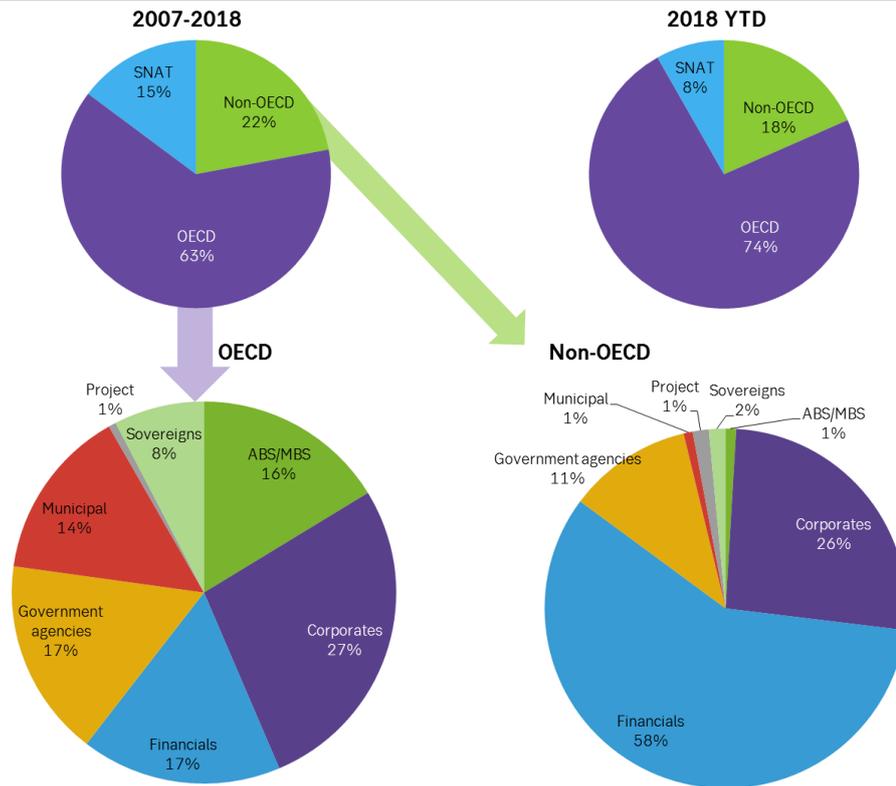
Source: SEB analysis based on Bloomberg/BNEF and SEB data.

### Expanding Emerging Market Opportunity

Over the last decade 78% of green bond issuance has occurred in OECD markets and from supranational institutions. As illustrated in Figure 10, in the OECD, issuance is relatively evenly distributed across types of green bonds and sectors, with 44% coming from private, corporate issuers. Consistent with the geographic trends described above, 2018 so far has shifted further in this direction with 82% coming from OECD domiciled issuers as well as supranationals.

Non-OECD issuance, particularly from Emerging Markets and Developing Economies (EMDEs) began picking up in earnest after China regulated its green bond market in 2015, and continued its increasingly important growth trend throughout 2017, rising to 25% in 2017 and leading to a larger universe of higher yielding EM opportunities becoming available to investors. This figure fell back to 18% YTD, but was comparable to where it stood this time last year, so could easily rise again. The sectoral distribution in EMDEs looks completely different, and is heavily weighted towards corporate bonds; split between financials (58%), where the CNY presence is obvious, and non-financial corporates (26%).

Figure 12. Regional evolution of green bond markets 2015-2017 (USD Bn)



Source: SEB analysis based on Bloomberg and SEB data

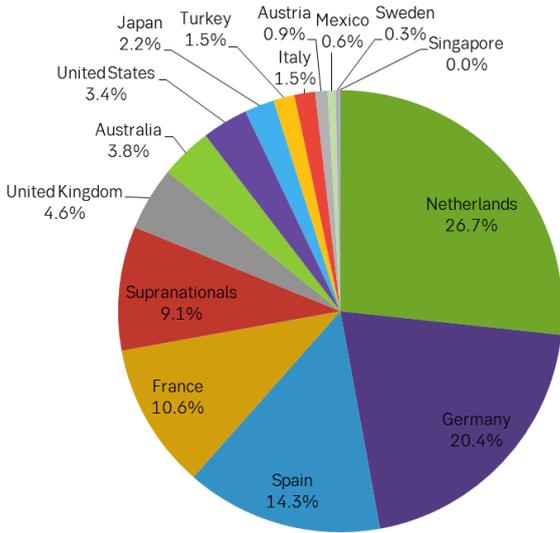
### Social and Sustainability Bond Market Update

As noted above, growth prospects for the green bond market in 2018 can be expected to be balanced by issuers and investors taking time to absorb the impressive acceleration that has occurred in the market to date, while calibrating their strategies and also considering opportunities via **emergent social and sustainability bond** financing channels.

Following the elaboration of the UN Sustainable Development Goals (discussed in this edition in a [contribution from the EBRD](#)), and the subsequent elaboration of the Social Bond Principles and Sustainability Bond Guidelines, this trend is already clearly visible in the market and can almost be superimposed with the growth pattern exhibited in the green bond market (compare Figure 11 with Figure 3) with issuance surpassing USD 16 billion in 2017.

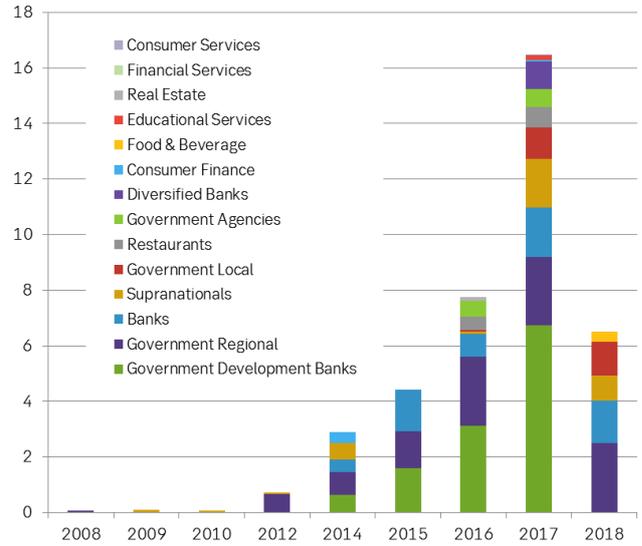
The market started off the year with vigour, reaching USD 5.5 billion already by February with corporate issuance from ANZ, municipal issuance from North-Rhine Westphalia and Madrid, as well as from the World Bank (IBRD) and surpassing USD 6 billion by the end of April. Cumulative social/sustainability bond issuance stands at USD 39 billion since 2008; its geography dominated by European issuers and supnationals, and its sectoral issuer composition split 74% SSA and 26% corporate (Figures 13 and 14). The pipeline also looked strong for the rest of 2018, with the European Investment Bank announcing on the margins of the IMF/World Bank Group Spring Meetings plans for a new debt product: a Sustainability Awareness Bond, highlighting the Bank's key role in sustainable finance both in and outside of Europe.

**Figure 13. Geography of Social/Sustainability Bond Market**



Source: SEB analysis based on Bloomberg and SEB data. Cumulative outstanding issuance. Social & Sustainability bonds qualified as per the Social Bond Principles and Sustainability Bond Guidelines.

**Figure 14. Social/Sustainability bond market (USD Bn) by sub-sector**



Source: SEB analysis based on Bloomberg and SEB data (BICS Level 4). Social & Sustainability bonds qualified as per the Social Bond Principles and Sustainability Bond Guidelines. 2018 ytd.

## 2. Publicly Announced Green, Social & Sustainability Bond Pipeline<sup>7</sup>

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- Al Omrane (Dirham)
- Auckland Council (NZD)
- Banco Nacion Argentina
- BBVA
- Brookfield Renewable Partners
- City of Barcelona
- Credit Suisse (EUR)
- EIB Sustainability Bond
- Henang Yuguang (RMB)
- IREDA (Green Masala)
- Jacinta Solar Farm (USD)
- Japan Retail Fund Investment (REIT)
- KfW
- Louisiana Local Govt. Environmental Facilities & Community Development Authority
- Manulife Financial
- Massachusetts Water Resources Authority
- Mexico City (MXN)
- New Development Bank (Green Panda)
- Nigeria Green Sovereign (Tap)
- Nippon Yusen Kaisha (NYK)
- Sogn og Fjordane Energi AS
- State Bank of India (USD)

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<sup>7</sup> As of 7 May 2018

### 3. Green Corporate Bonds – the issuer perspective

## VASAKRONAN

**Thomas Nystedt**  
Group Treasurer

**Anna Denell**  
Head of Sustainability

*Note that this text is provided by the contributing party and constitutes the opinion of the party and not necessarily that of SEB. SEB plays a role in enabling its stakeholders to benefit from a broad overview of initiatives by allowing key market participants to contribute through The Green Bond.*

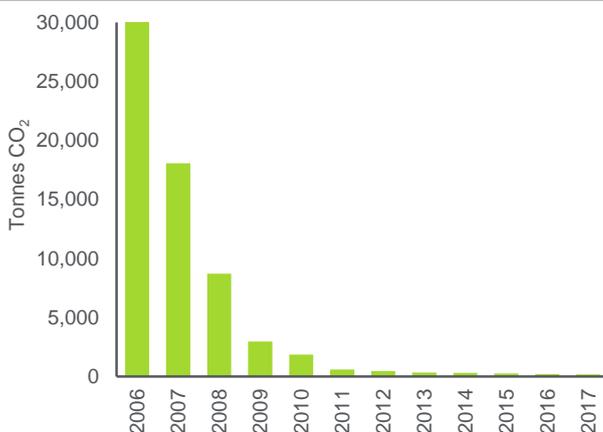
### The company Vasakronan

Vasakronan is an experienced Green Bond issuer, being the world's first company to issue a green bond in November 2013. The company is the leading commercial property company in Sweden with operations in four major growth regions – Stockholm, Uppsala, Gothenburg and Malmö. Vasakronan's portfolio comprises 176 properties with a total area of 2.4 million square meters, valued at SEK 128 billion (March 31, 2018). The company is jointly owned by the First, Second, Third and Fourth Swedish National Pension Funds. On May 7, 2018, Moody's assigned a first-time A3 long-term issuer rating to Vasakronan with a stable rating outlook.

In close cooperation with their tenants, Vasakronan has lowered the energy consumption in their buildings by 54 percent since 2009. By supplying the properties with renewable or climate neutral energy, the company has also reduced their carbon emissions in Scope 1 and 2 by 97 percent (**Figure 3.1.**). As per December 31 2017, Vasakronan had reduced the average energy consumption in all buildings to 100 kWh per square meter and had certified 84 percent of its building stock, mostly according to the international and widely used LEED rating system (**Figure 3.2.**). The ambition is to have a 100 percent certified portfolio, to reach LEED Platinum for all new construction and major renovation projects, and to reach at least LEED Gold for all existing buildings.

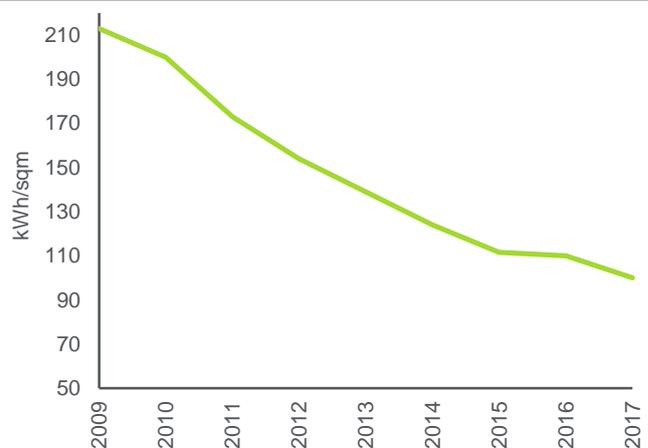
Since November 2013, Vasakronan has continued to be the largest issuer of green corporate bonds in Sweden. At year-end 2017, Vasakronan's total investments approved for financing with the proceeds from the green bonds amounted to SEK 14.2 billion. During the first quarter of 2018, Vasakronan increased the outstanding volume of green bonds by SEK 2.9 billion, bringing the total outstanding amount to SEK 10.9 billion. During the same quarter, the company issued its first green bond in the Norwegian market with a nominal amount of NOK 400 million.

**Figure 3.1. Carbon emissions**



Source: Vasakronan

**Figure 3.2. Energy performance**



Source: Vasakronan

### What kind of environmental impact do buildings have?

Buildings have an impact on the environment throughout their life cycle, from construction to operations, renovation and demolition. One of the largest environmental impacts is energy consumption. In fact, buildings are responsible for nearly 40 percent of the energy consumption globally and therefore stand for a large proportion of greenhouse gas emissions. For this reason, it is obvious that all property owners need to do all they can to reduce the energy consumption in their existing buildings, and supply them with renewable, climate neutral energy. To focus on low energy consumption when developing new buildings is also important, but is definitely not enough.

An almost forgotten environmental impact from buildings, it seems, is the consumption of materials, especially in new construction projects. Construction works consume heavy amounts of materials and produce a lot of waste. One of the most widely used materials for construction

work is concrete. Concrete is a desirable material in many ways; except for when it comes to the impact it has on the environment. Concrete is a composite material composed of fine and coarse aggregate, typically sand and gravel, bonded together with a fluid cement (cement paste) that hardens over time. The materials used for cement are non-renewable and the production of it involves large emissions of carbon dioxide. Wood, on the contrary, if sourced responsibly, has a much lower environmental impact, and actually locks up coal. Regardless of which material being used, all developers should focus on reducing the total amount consumed in order to reduce the waste.

**Figure 3.3. Hubben**



Hubben. A new construction where we have focused on reducing waste. When the project was completed we could note that waste per produced square meters amounted to 38 kg, of which nothing went to landfill.

Source: Vasakronan

### ***Why are so many real estate companies issuing green bonds?***

If buildings have such a large environmental impact, why are there so many green bond issuers from the real estate sector? Moreover, why are they issuing bonds for new construction projects? Wouldn't the best thing, from an environmental perspective, be to not build at all? Evidently, the answer is no. Firstly there is a huge need for new buildings, offices and housing in particular. Secondly, there is a very large difference in environmental impact between business as usual/standard practice and low environmental impact practice.

How do you determine what should be considered low environmental impact practice and what is not? Environmental certification systems are one way. In the building sector, there are many environmental certification systems, both for new construction as well as existing buildings. Many real estate companies had already started to certify their new construction projects long before green bonds evolved, as a way to attract new tenants and to retain their existing tenants.

By supporting the best new construction projects through green bonds, it will be easier to quickly push the legislation bars and force everyone that constructs a new building to do it with the lowest environmental impact possible. This could be seen as an environmental "race to the top". Therefore green real estate bonds are doing a great job in reducing the measurable environmental impact not only in the projects that are actually being financed through the green bonds, but also by creating an incentive for more developers to go deep green in their practice and by doing so, indirectly push the bars of legislation towards more stringent environmental outcomes.

However, improving new construction projects will only change the overall energy consumption in the society on the margin. It is possible that a larger environmental benefit should occur, if the green real estate bonds were also supporting the crucial work of reducing the energy consumption in the existing building stock, which has to be lowered to half of what it is today, by 2030.

### ***The effect of Green Bonds***

By issuing green bonds the focus on sustainability has increased within the whole company. We have experienced a closer cooperation between the Sustainability and the Treasury team. Green bonds can be seen as a way of demonstrating everything good that our employees do within the field of sustainability. By promising investors that we will obtain a certain criteria, we have to be even more focused and structured when planning our projects. We also have to ensure that we have the right methods for analysis and reporting as we issue a Bondholder's report with details on where the money has been invested.

In addition to all the positive effects in our sustainability work, we also note that our funding has been affected in a positive way. Due to the great demand for sustainable investment opportunities we experience lower funding costs. Green bonds can also be perceived as a tool for communication with our investors. It gives us an opportunity to have a dialogue with them about how risks and sustainability are interconnected, in particular in the real estate industry. This in turn leads to a closer relationship with our investors. The green bonds have also broadened our investor base, as there is capital earmarked for green bonds.

Another positive effect of raising the bar for our sustainability work is that we now meet the high standards for loans provided by The European Investment Bank and The Nordic Investment Bank. This broadens our funding base even more and keeps the organization alert. This ensures that we keep the highest standards possible in our projects.

Recently Vasakronan updated its original green bond framework. By setting up an updated Green Bond framework, Vasakronan aims to take further steps towards mobilizing debt capital markets for climate change and towards offering investors further insight on Vasakronan's sustainability strategy in line with its commitments. CICERO provided a second opinion to the updated Green Bond framework and it resulted in a dark green label.

## 4. Reporting and Green Bond Issuance



**Isabelle Laurent**  
Deputy Treasurer & Head of Funding

*Note that this text is provided by the contributing party and constitutes the opinion of the party and not necessarily that of SEB. SEB plays a role in enabling its stakeholders to benefit from a broad overview of initiatives by allowing key market participants to contribute through The Green Bond.*

When EBRD issued its inaugural Green Bond in 2010, it seemed an obvious decision. Having been established in 1991 to promote the transition to open market-based economies in central and eastern Europe and the former Soviet Union, EBRD was the first multilateral development bank to have an explicit requirement in its mandate “to promote in the full range of its activities, environmentally sound and sustainable development”. While our countries of operations have since been extended to cover Mongolia, Turkey and the southern and eastern Mediterranean, EBRD remains one of the largest investors in environmental projects in our region. Indeed, while EBRD applies strict environmental and social standards to all our investments, projects undertaken under our Green Economy Transition (“GET”) approach now constitute over 40% of EBRD’s operating assets.

The diverse environmental goals of GET projects undertaken has meant that the proceeds of EBRD’s Green Bonds were ab initio directed to a broader range of categories than was typical, complementing energy efficiency and renewable energy projects with water and waste management projects, as well as investments in sustainable transport. While EBRD has been assessing and reporting on greenhouse gas emissions since 2003, in the last few years there has been a concerted effort to work towards appropriate reporting metrics for all project categories.

The fourth core component of the Green Bond Principles (“GBP”) emphasises “reporting” by issuers, although it was originally focused around the less onerous requirement to account for the allocation of Green Bond proceeds either on a project-by-project or on an aggregated portfolio basis. Nevertheless, even in the GBP’s initial form, it recommended reporting on the positive environmental impact of the investments funded by Green Bond proceeds, encouraging “the use of quantitative and/or qualitative performance indicators which measure, where feasible, the impact of the specific investments (e.g. reductions in greenhouse gas emissions, number of people provided with access to clean power or clean water, or avoided vehicle miles travelled, etc.”

Impact reporting has, however, garnered increasing attention, as a means for the Green Bond market to underline its credibility and contribution to increasing capital allocation to environmental sustainability projects. Furthermore, there is a growing clamour from investors for impact reporting that appears to be driven by their internal reporting obligations, which are designed to assess the relative merits of individual Green Bonds and report to their own investors and beneficiaries. It may also be driven by the need to comply with regulatory requirements such as France’s ground-breaking Article 173, the joint agreement of China Securities Regulatory Commission and the Ministry for Environmental Protection on listed companies’ environmental disclosure, and/or recommendations by market and regulatory bodies such as the Task Force on Climate-Related Financial Disclosures.

The 2017 update of the GBP goes further in emphasising the importance of disclosing the key underlying methodology and/or assumptions used in the quantitative determination that may help inform market participants. This is, of course, critical in allowing investors to appraise the comparability of the estimated impacts, but also in facilitating alternative assessments and calculations to be carried out independent of a specific methodology.

To enhance the transparency and integrity of the Green Bond market, a significant effort has been undertaken by the GBP’s Working Group on Impact Reporting to establish voluntary guidelines that aim at a harmonised framework for impact reporting. The remit for this working group, which includes issuers, investors, underwriters and environmental advocacy and advisory groups, is to focus on the conveyance of information reflecting the environmental benefits of the assets funded by Green Bonds that are aligned with the GBP. The goal is both to reduce the uncertainty for issuers and ensure the timely availability of relevant information for investors and wider stakeholders by agreement on the best practice for disclosure, both quantitative and qualitative, of the “impact” resulting from Green Bond investment.

In recognition that not all Green Bond issuers may be in a position to report under any proposed core metrics, additional sustainability indicators have been devised for water and waste management projects. These have frequently centred on the number of people (or the percentage of the population) benefitting from the relevant project, and thus focus on output reporting rather than on impact (defined as changes to the broader environment), or even outcome (where the focus is on changes to/for the beneficiaries). This highlights the tension

between the drive to enhance the integrity and transparency of environmental finance funded through Green Bonds, and the need to ensure that reporting requirements are not so onerous that it debars Green Bond issuance by the wide variety of issuers that would allow the Green Bond market to fulfill its goal of promoting and amplifying the important role that financial markets can play in helping to address environmental issues.

These “other sustainability indicators” may also align well and facilitate reporting against the Sustainable Development Goals (“SDGs”). While the 17 SDGs, were primarily conceived as a universal set of goals, targets and indicators by which member states of the United Nations are expected to steer their policies and objectives over the next 12 years, it would seem that over the last 18 months it is the private sector that have been most active in interrogating how to apply and adapt these goals and targets to their activities. Indeed, when on an investor roadshow in Europe last summer, we were repeatedly asked about how the projects funded by EBRD’s Green Bond issues contributed to the SDGs, we set about the more detailed mapping of our Green Project Portfolio (“GPP”) by category to specific targets<sup>8</sup>. Solely focusing on direct outputs and outcomes, it enabled us to see that our GPP is aligned with 12 of the 17 goals (See **Figure 4.1**). This reflects the fact that not all of the SDGs may be considered investible, whereas others focus primarily on social outcomes, and are covered by EBRD’s Social Bond programme<sup>9</sup>, which to date has encompassed microfinance projects and health-related investments.

**Figure 4.1. The Sustainable Development Goals**



EBRD’s Environmental Sustainability bonds support the implementation of 12 of the Sustainable Development Goals (SDGs) in its countries of operations.

Source: EBRD

The SDGs create a useful, broad and accessible universal language for sustainable finance practitioners to assess and report on their green (and social) projects, and they also find reflection in the work on developing a Sustainability Taxonomy that was being undertaken by the EU High Level Expert Group on Sustainable Finance convened by the European Commission. While the ostensible purpose of creating a robust classification system is to bring clarity to the market on what may be deemed green and/or sustainable, it is hard to envision how a taxonomy may provide a framework for evaluating the benefits, co-benefits and trade-offs associated with a green project. Without such a holistic approach, project selection may be sub-optimal, with too great a focus on one objective at the expense of others.

The encouragement for all issuers to provide qualitative information on the impact of their projects to be funded by Green Bonds thus contributes to a broader perspective on the benefits and risks of funded projects, as well as helping to broaden the issuer base to those who may be unable to report under core impact metrics. It also serves to underline the insufficiency of quantitative reporting alone, given that these are estimates, rather than a precise science that produces comparable and aggregable data. Indeed, these deficiencies may arise or be

<sup>8</sup> The full mapping can be found on the EBRD website (see page 28-32): <http://www.ebrd.com/focus-on-environment.pdf>

<sup>9</sup> <http://www.ebrd.com/work-with-us/sri/funding.html>

accentuated by differences in focus, for instance between the more precise measurements of CO<sub>2</sub> “avoided” or “reduced” by contrast with CO<sub>2</sub> “savings”, which are highly dependent on pre-assumptions.

There is often a misconception that a benefit of quantitative reporting would be to direct investors to Green Bonds that fund projects estimated to provide the largest CO<sub>2</sub> savings, thereby implementing investment strategies for a 2°C scenario. Quite apart from the reality that such a scenario is ill-defined, with different countries having disparate nationally determined contributions, it is not a given that a low carbon pathway is determined by the biggest delta in CO<sub>2</sub>. Indeed, there may be a greater importance in the future on technologies that do not provide significant CO<sub>2</sub> savings, such as indoor hydroponic food production, or biofuel technology that can turn agricultural waste into ethanol, and use the methane produced as a by-product to power the factory. This, as well as the lack of precision of estimates of CO<sub>2</sub> savings are only a few of the reasons why one should be sceptical of the value of assessing Green Bonds based on the calculation of CO<sub>2</sub> savings per US Dollar invested.

It is clear that both quantitative and qualitative reporting by Green Bond issuers will remain a key tool by which the market seeks to assess what is green or, indeed, to determine whether an asset is sufficiently green to meet eligibility criteria. They may also serve to underline the important contribution that the Green Bond market may play in financing the SDGs.

***Inquiry into the Design of a Sustainable Financial System****Making Waves: Aligning the Financial System with Sustainable Development Summary for SEB*

Simon Zadek &amp; Nick Robins

17 April 2018

*Note that this text is provided by the contributing party and constitutes the opinion of the party and not necessarily that of SEB. SEB plays a role in enabling its stakeholders to benefit from a broad overview of initiatives by allowing key market participants to contribute through The Green Bond.*

**5. Summary from Making Waves: Aligning the Financial System with Sustainable Development**

Financing the Sustainable Development Goals (SDGs) and the Paris Agreement commitments on climate requires trillions of dollars per year. Much of the finance needed will have to come from private sources, yet inadequate private capital is being deployed in ways that are aligned to these goals and commitments.

The Inquiry into the Design of a Sustainable Financial System was initiated by UN Environment to advance options to align the financial system with sustainable development. 'Making Waves: Aligning the Financial System with Sustainable Development' is its final, global report.

The report reviews the Inquiry's core analysis, summarizes progress made in aligning the financial system with sustainable development between 2014 and 2017, reflects on the lessons that can be learned from the Inquiry's approach, and highlights what still needs to be done and what success could look like. It finds real signs that a shift to a sustainable financial system is well under way.

***Evidence of Change***

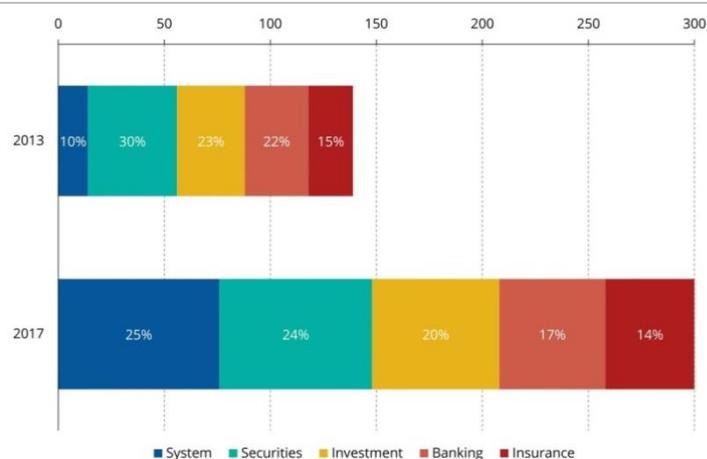
Sustainability is becoming part of the routine practice within financial institutions and regulatory bodies. A growing number of commitments to action are being made, matched by the beginnings of the urgently needed reallocation of capital.

In market practice, there has been a fourteen-fold increase in labelled green bond issuance from US\$11 billion in 2013 to US\$155 billion in 2017. Key to this growth has been the market-creating role of public authorities, including key development banks. Yet such progress needs to be set against the scale of the global bond market of around US\$100 trillion.

Divestments in carbon-intensive assets reached an estimated US\$5 trillion in 2016, set against investments in coal, oil and gas over the same period of around US\$710 billion. The increased membership of the Principles for Responsible Investment to over 1,900 signatories, with combined assets under management of US\$70 trillion, is also a welcome development.

National action is critical, and there are a growing number of ambitious roadmaps (such as Indonesia, Mongolia, Morocco and Switzerland). Each is important, but some catalyse broader international action. For example, China's Guidelines for Establishing a Green Financial System are the world's most comprehensive set of national commitments, covering priorities across banking, capital markets and insurance.

The global number and range of policy measures to advance aspects of sustainable finance has increased. At the end of 2013, 139 subnational, national-level and international policy and regulatory measures were in place across 44 jurisdictions. Four years on, the number of measures has risen to 300 in 54 jurisdictions (**Figure 5.1.**), with a substantial rise in system-level initiatives.

**Figure 5.1. The Doubling in Policy and Regulatory Measures, 2013-2017**

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There has been a striking growth in international initiatives to share experience, stimulate action and promote cooperation on key rules and standards. Other structurally significant initiatives include the G20 Green Finance Study Group (GFSG), co-chaired by China and the UK, with UN Environment serving as its Secretariat. The GFSG continued under the German G20 Presidency in 2017 and is operating as the Sustainable Finance Study Group under the Argentinian G20 Presidency in 2018.

### ***Lessons from the Inquiry***

The most salient aspects of the Inquiry's approach were to shape a narrative that demonstrated the need for system change in finance in pursuit of sustainable development, a focus on being the 'messenger' of existing practice, 'crowding in' independently championed innovations, and convincing new financial actors that sustainable development was also their business.

The Inquiry benefited from the positioning, leadership and patient capital of UN Environment, which created the possibility of risk-taking innovations not always common to international organizations, building on previous breakthrough initiatives such as UN Environment's Green Economy programme.

With the completion of the Inquiry's mandate, considerable effort has been deployed to ensure its work is picked up. Key aspects of its work will continue through Sustainable Finance at the G20, coalitions for actions such as the Network of Financial Centres for Sustainability, the Sustainable Digital Finance Alliance and the Sustainable Insurance Forum.

Similarly, country-specific work will increasingly involve other parts of the United Nations system, partly catalysed by the support provided by the Inquiry to the UN Secretary-General's leadership in championing sustainable finance.

### ***Getting the Financial System We Need***

Clearly, some capital is flowing to the new economy. But far more is continuing to support the old economy, through an inability or unwillingness on the part of owners and intermediaries to redeploy it.

The next phase in sustainable finance will be about making the shift from acknowledgement to alignment. It will be multidimensional and non-linear. It will involve mainstreaming as well as the replacement of the mainstream by new, better ways of doing finance. It will encompass a sense of purpose for the financial system matched by a decentralized model of delivery. All this will mean new performance metrics for the financial system, ones that measure the extent to which sustainability is really part of the process of finance as well as its outcomes.

The engagement of increasingly influential players, the growth of ambitious, powerful coalitions of actors that can support collaborative action, and the shifting focus towards pivotal areas such as the potential of digital finance, the roles of rating agencies, China's Belt and Road Initiative and engagement of key policy platforms such as the G20 all point to further action.

The Inquiry's work with the World Bank Group in producing the 'Roadmap for a Sustainable Financial System' enabled us to identify some of the developments needed to accelerate the flow of sustainable finance. Some actions can be taken by market actors, such as disclosure, but even these may need policy or regulatory interventions to advance at scale and speed. Other measures require policy interventions in the broadest sense, which would include a combination of policy, regulatory, standard-setting, judicial and fiscal actions, often working in concert with, and supportive of, market innovations and broader developments.

The Inquiry has been part of a wave of change that has started to link the financial system with sustainable development. The evidence indicates the potential for a strong next wave of action.



## 6. Summary from Joint SIF/IAIS Issues Paper on Climate Change Risks to the Insurance Sector

The Sustainable Insurance Forum (SIF) and the International Association of Insurance Supervisors (IAIS) have developed a draft Issues Paper on Climate Change Risks to the Insurance Sector. This paper was open for public consultation during the month of April. The following is a summary of the key findings of the paper. The final version of the paper is expected to be released in July 2018.



Joint SIF/IAIS Issues Paper on Climate Change Risks to the Insurance Sector  
 Summary for SEB  
 May 2018

**Jeremy McDaniels**  
 SIF Programme Manager

*Note that this text is provided by the contributing party and constitutes the opinion of the party and not necessarily that of SEB. SEB plays a role in enabling its stakeholders to benefit from a broad overview of initiatives by allowing key market participants to contribute through The Green Bond.*

### Context

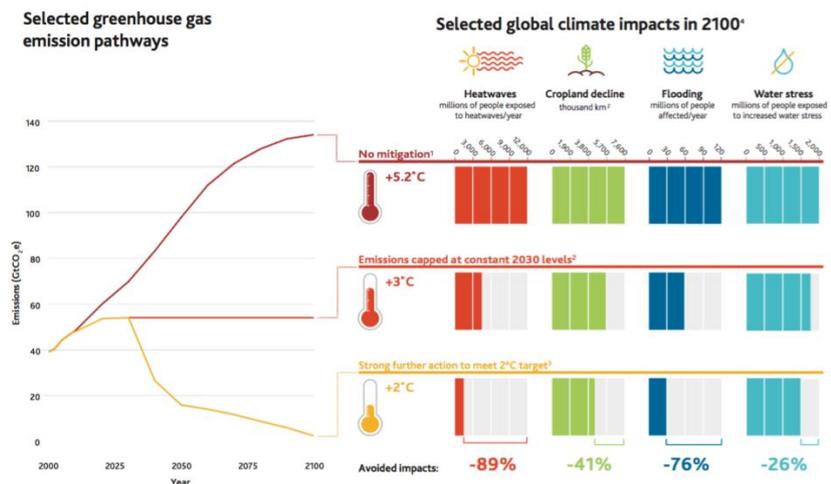
Climate change will have significant yet highly differentiated impacts on human and environmental systems around the world, including an increasing frequency and severity of natural catastrophes. Responses to climate change – such as new policies, market shifts, technological innovation, and social change – will also have major impacts, including on the structure and function of the global economy. In recent years, there has been increasing recognition at the global level – including at the Financial Stability Board, the G20, and the United Nations – that climate change will also affect the financial system, including insurance firms. These and other developments have prompted insurance supervisors to begin examining the relevance of climate change for insurance supervision, both individually, and collaboratively through the SIF – a global platform for supervisory collaboration convened by the United Nations Environment Programme.

The objectives of this Issues Paper are to raise awareness for insurers and supervisors of the challenges presented by climate change, including current and contemplated supervisory approaches for addressing these risks. The paper is intended to be primarily descriptive and is not meant to create supervisory expectations. Nevertheless, the paper may shed light on the need for additional, more specific joint material from the IAIS and the SIF to support supervisors in their efforts to better understand and address climate change risks.

### Climate Risks and the Insurance Sector

Warming of the climate system is unequivocal, with recent climate changes causing widespread impacts on human and natural systems. Going forward, climate change is set to pose mounting human and environmental costs by the end of the century – even under scenarios reflecting mitigation and adaptation efforts.

**Figure 6.1. Emissions Scenarios and Climate Impacts in 2100**



Source: Bank of England, 2017, based on analysis by the UK Met Office and AVOID2 programme

In its role as risk manager, risk carrier and investor, the global insurance sector plays a cornerstone role in the management of climate-related risks and opportunities for individuals, households, firms, other financial institutions, and public authorities.

- **Physical risks**, arising from climate trends (i.e. changing weather patterns and sea level rise) and shocks (i.e. natural disasters and extreme weather events such as storms, drought, and heatwaves). The costs of physical impacts are stark - the series of major hurricanes and other natural disasters in 2017 has made it the year of highest insured losses ever, expected to come to US\$135 billion.
- **Transition Risks**, arising from disruptions and shifts associated with the transition to a low-carbon economy, motivated by policy, market, technological, or reputational factors affecting the value of financial assets.

While certain climate factors are long-term in nature, many are already proving to be material for firms – affecting underwriting, investment, market, strategic, operational, and reputational risks.

Climate change will have differential impacts across insurance firms, depending on their core underwriting business areas and investment allocation strategies. However, over the long term, climate change is likely to have implications for all insurance firms, either through underwriting or investment channels. The complex, interrelated, non-linear, and dynamic challenges presented by climate risks require a strategic response across business lines and levels of management within insurance firms, and at a higher level, coordination across the insurance value chain.

### **Relevance for Insurance Supervisors**

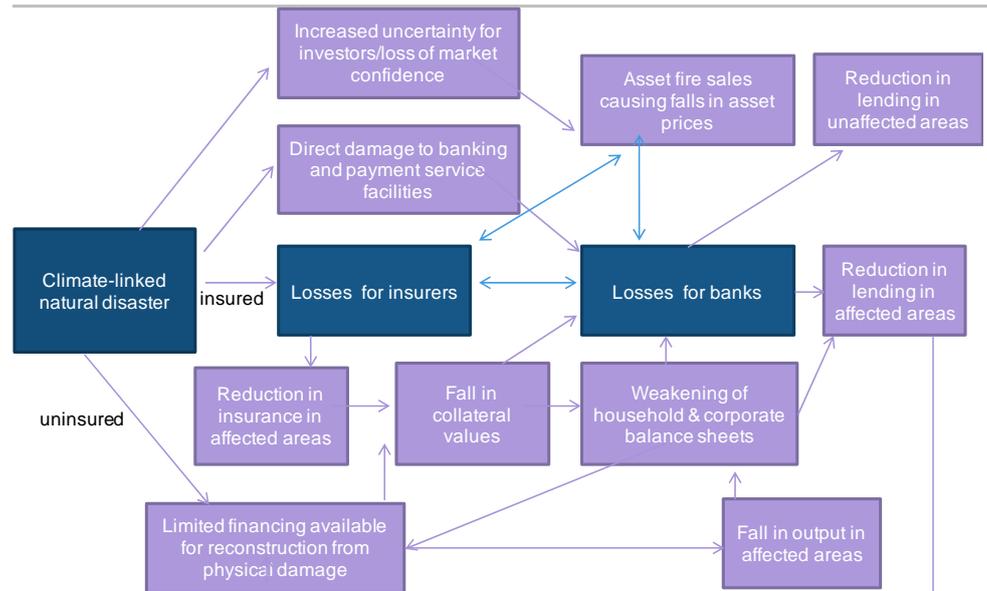
Stemming from their responsibility to provide oversight of new and emerging risks affecting regulated entities, insurance supervisors have a strategic interest in understanding how climate change may affect the safety and soundness of individual insurers, and insurance markets in aggregate.

**Figure 6.2. Implications of climate change for the core objectives of insurance supervisors**

| <b>Core objective</b>   | <b>Implications of Climate Change</b>   | <b>Potential Responses</b>   |
|---|---|--|
| Solvency and stability of insurance firms   | Potential for physical and transition risks to pose risks for solvency of individual firms, stemming from underwriting and investment activities  | <ul style="list-style-type: none"> <li>• Supervisory engagement to quantify potential financial risks associated with physical climate damages (i.e. underwriting liabilities)</li> <li>• Surveys and Disclosure requirements</li> </ul> |
| Market conduct, consumer protection, access and affordability, conduct and compliance | Potential for climate change render assets uninsurable (redlining); transparency for consumers on climate change practices and strategies; delivering enabling conditions for insurance product development | <ul style="list-style-type: none"> <li>• Assessment of firm conduct on climate change issues</li> <li>• Supporting consumer awareness and literacy</li> <li>• Engagement with other policymaking bodies</li> </ul>                       |
| Macroprudential stability   | Potential for transition risks issues to pose systemic risks to the financial system and macro-economy  | <ul style="list-style-type: none"> <li>• Assessments of exposure to high carbon assets risk</li> <li>• Alignment of investments with climate goals</li> </ul>  |

While climate change may not appear immediately relevant to the supervision of insurance firms in certain jurisdictions, the wide range of potential impacts on the economy, high degree of uncertainty associated with impact scale and time horizons, and the potentially systemic and transformative nature of such factors across the industry, compels a strategic response. In this respect, climate change is similar to other newly arising complex risks – such as cyber risk. Importantly, direct climate impacts on the insurance sector – such as high insured or uninsured losses resulting from climate-related natural disasters – may have indirect impacts on the rest of the financial system, with implications for supervision.

**Figure 6.3. A transmission map from a natural disaster to financial sector losses and the macroeconomy**



Source: Bank of England, 2016

The IAIS Insurance Core Principles (ICPs) set a global framework for the supervision of the insurance sector. While they do not address specific thematic risk issues, the ICPs provide the basis for supervisors to identify and respond to new and emerging risks facing the insurance sector – such as those arising from climate change. Key ICPs of relevance may include:

- ICP 7 (Corporate Governance)
- ICP 8 (Risk Management and Internal Controls)
- ICP 15 (Investment)
- ICP 16 (Enterprise Risk Management for Solvency Purposes)
- ICP 19 (Conduct of Business)
- ICP 20 (Public Disclosure)

Going forward, the IAIS may seek to reflect further on the relevance of climate change across other ICPs, and take steps to consider how climate change may factor within ongoing review processes of ICPs alongside other new and emerging risks.

### ***Supervisory Approaches to Climate Change Risks***

Members of the SIF have taken a range of actions to better understand physical and transition risks facing insurance firms' underwriting and investment businesses, and to strengthen mechanisms for ensuring safety, soundness and stability.

Figure 6.4.

| <b>Assessing Climate Change as an Emerging Risk</b>                    |   |
|--|---|
| Mandates and Objectives  | Identifying the relevance of climate factors to their core supervisory mandates and objectives.   |
| Initial Assessment   | Examining how climate change may impact the insurance sector. This can take the form of an initial 'stock-take' of risks, exposures, and strategic responses to climate issues by firms in the local market.  |
| Signalling Expectations  | Making public statements, including high-level speeches, setting out rationale for action, intended next steps, and expectations from firms.  |
| <b>Responding to Climate Change risks through Supervisory Practice</b> |   |
| Risk Frameworks  | Considering how climate change may be relevant across the mainstream risk framework used to supervise insurance firms, examining underwriting, investment, operational, strategic, and reputational dimensions.   |
| Information and Data gathering   | Providing or endorsing of voluntary disclosure guidelines, conducting voluntary surveys, undertaking data calls, or implementation of new mandatory disclosure requirements.  |
| Engagement Strategies and Examination Tools                            | Asking questions to firms regarding their understanding of, responses to, and strategic perspectives on climate change risks and opportunities, including: firm capitalisation, capital adequacy, and solvency, impacts of climate change on firms' underwriting strategies, behaviour in responding to climate-related claims, and long-term transition plans. |
| Stress Testing   | Integrating climate change factors and trends into stress tests for liability shock events for general insurance firms, starting with an increasing severity and confluence of extreme weather events.  |
| Examining Transition Risks   | Exploring the potential for transition risks to affecting underwriting business and investment portfolio valuation, through exposure assessments, scenario analysis, and evaluation of alignment with low-carbon scenarios.   |
| <b>Collaboration and Cooperation</b>                                   |   |
| Convening  | Bringing insurers, other financial institutions, and civil society stakeholders together to collaborate on climate change issues – such as understanding financing gaps associated with climate goals.  |
| Engagement with Public Authorities                                     | Working with other financial supervisors, regulators, and government on climate change issues – including integrating insurance into national roadmaps, applying insurance sector lessons elsewhere in the financial system, and working with related agencies to reduce risks.   |
| International Engagement   | Learning from experience in other jurisdictions, including through platforms such as the SIF.   |

## Case studies

Ten case studies of supervisory action set out the state-of-the-art in supervisory action on climate change risks, including the development of methodologies for portfolio risk assessment and scenario analysis.

**Australia:** Australian Prudential Regulation Authority (APRA)

**Brazil:** Superintendência de Seguros Privados (SUSEP)

**France:** Autorité de Contrôle Prudenciel et de Résolution (ACPR)

**Italy:** Istituto per la Vigilanza Sulle Assicurazioni (IVASS)

**Netherlands:** De Nederlandsche Bank (DNB)

**Sweden:** Finansinspektionen (FI)

**UK:** Bank of England Prudential Regulation Authority (PRA)

**USA – National Association of Insurance Commissioners (NAIC)\***

**USA – California:** California Department of Insurance (CDI)

**USA – Washington State:** Office of the Insurance Commissioner (OIC)

## Conclusions

Climate risks present significant material challenges for the insurance sector, which are likely to grow over time. Through their underwriting and investment activities insurers are exposed to the broad range of physical and transition risks that may arise from climate change, which may affect their capacity to write insurance business and pay claims. While certain parts of the insurance sector – such as large diversified general insurers, and global reinsurers – are well-positioned to manage the physical risks posed by climate change, other types of insurance businesses may have little understanding of how climate change may affect their activities and operations. In this context, it is imperative that resilience to climate risks be achieved by all insurers, regardless of size, speciality, domicile, or geographic reach.

Many insurance supervisors have recognised the importance of their role in addressing climate risks, in line with their mandates to ensure the safety and soundness of firms and the insurance sector as a whole. However, there is a diversity of views, priorities, and strategies among supervisors. It is evident that climate risks will require ongoing and intensifying scrutiny by supervisors. Going forward, insurance supervisors should seek to increase their understanding of climate risk, and develop supervisory capabilities to be able to accurately evaluate the insurance sector's actions to achieve climate resilience, across underwriting and investment activities.

Additional supporting material from the IAIS and the SIF on best practices for addressing climate risk issues in line with the ICPs may be helpful for supervisors and insurers.

## 7. SEB published new Green Bond Investor Report

SEB has published its first Green Bond Investor Report, describing the environmental impact from SEB's inaugural green bond, issued in February 2017.

Figure 7.1. SEB Green Bond Investor report



Source: sebgroup.com

### SEB – press release

#### SEB published new Green Bond Investor Report

25 April 2018

*Note that this text is provided by the contributing party and constitutes the opinion of the party and not necessarily that of SEB. SEB plays a role in enabling its stakeholders to benefit from a broad overview of initiatives by allowing key market participants to contribute through The Green Bond.*

SEB has used proceeds from the 4.9 billion Swedish kronor (500 million euros) bond to grant green loans for environmental projects within for example renewable energy, sustainable forestry, green buildings and clean transportation in Sweden, Norway and Finland.

"We are convinced that green financing solutions are key in developing a sustainable society. We will continue to support our customers and intend to further develop and expand sustainable financing in the next few years", says Joachim Alpen, Co-head of Large Corporates & Financial Institutions.

Alpen says SEB needs to further develop both systems and processes in order to enable further penetration of green assets into the bank's products and services.

SEB was a key partner when the World Bank issued its first green bond for institutional investors in 2008, and the bank has been a leader in the development of the global market for green bonds ever since. Today, SEB is a global sustainable finance specialist and advisor. To date, SEB has facilitated the issuance of green bonds at a total value of 17.7 billion dollars.

The new Green Bond Investor Report describes the environmental impact of SEB's own green bond, for example, how the proceeds were distributed among categories, energy savings and CO2 reduction. In 2017, projects that received financing through the bank's green bond helped reduce CO2 emissions by close to 220,200 tonnes. This corresponds to emissions from around 140,000 cars running an average distance of 12,000 kilometres per year.

The report also illustrates how SEB's green bond is aligned with UN's Sustainable Development Goals (SDG).



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