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**Market Risk of Green  
Bonds and Green Banking**

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**SEB**

# A decade of Green Bonds





Launches its first Green Bonds  
**SEK 2,325,000,000**  
6-year 3.5% Green Bonds  
Investing to reduce global warming

Sole Lead Manager  


Key Investors

  
Länsförsäkringar  
Bank & Försäkring

  
Andra  
AP-fonden  
Second Swedish National Pension Fund

Senior Co-Manager  


Co-Manager  








# Green Bonds defined



## GREEN BOND DEFINITION



Green Bonds are any type of **bond instrument** where the **proceeds** will be **exclusively** applied to finance or re-finance in part or in full new and/or existing **eligible Green Projects** (see section 1 Use of Proceeds) and which are aligned with the **four core components of the GBP**.



# The Green Bond universe\*

<b>Mitigation &amp; Environmental preservation</b>	➤ Renewable Energy	<ul style="list-style-type: none"> <li>▪ Wind, solar etc.</li> <li>▪ Related infrastructure</li> </ul>
	➤ Energy Efficiency	<ul style="list-style-type: none"> <li>▪ Energy storage and recovery, district heating/cooling, smart grids</li> </ul>
	➤ Green Buildings	<ul style="list-style-type: none"> <li>▪ Building efficiency incl. environmental certification systems such as LEED, BREEAM or equivalent</li> </ul>
	➤ Pollution Prevention and Control	<ul style="list-style-type: none"> <li>▪ Waste water management</li> <li>▪ Recycling and waste-to-energy</li> </ul>
	➤ Environmentally Sustainable Management of Living Natural Resources and Land Use	<ul style="list-style-type: none"> <li>▪ Sustainable agriculture</li> <li>▪ Sustainable forest management</li> </ul>
	➤ Terrestrial and Aquatic Biodiversity Conservation	<ul style="list-style-type: none"> <li>▪ Protection of coastal, marine and watershed management</li> <li>▪ Nature reserve management</li> </ul>
	➤ Clean Transportation	<ul style="list-style-type: none"> <li>▪ Public transportation and related infrastructure</li> <li>▪ Alternative fuel vehicles</li> </ul>
	➤ Sustainable Water and Waste-water Management	<ul style="list-style-type: none"> <li>▪ Infrastructure for clean and / or drinking water</li> <li>▪ Energy recovery from waste water</li> </ul>
	➤ Eco-efficient Products, Production Technologies and Processes	<ul style="list-style-type: none"> <li>▪ Eco labelled and certified products</li> <li>▪ Resource efficient packaging and distribution</li> </ul>
<b>Adaptation</b>	➤ Climate Change Adaptation	<ul style="list-style-type: none"> <li>▪ Flood protection</li> <li>▪ Disaster early warning systems</li> </ul>

\* Examples of the Green Bond universe as outlined in the Green Bond Principle June 2017

# The five pillars of Green Bonds

A concept of simplicity built on five pillars

<b>1</b> <b>Definition</b> Use of proceeds	<b>2</b> <b>Selection</b> Process for project evaluation/selection	<b>Verification</b> Assurance through external review	<b>Monitoring</b> Management of proceeds	<b>Reporting</b> Transparency
<ul style="list-style-type: none"> <li>Identification and definition of investment areas / assets which are eligible for Green Bond financing</li> </ul> <p>The Green Bond universe is divided into the following areas that target climate stress:</p> <ul style="list-style-type: none"> <li>Mitigation</li> <li>Adaptation</li> <li>Environmental</li> </ul>	<ul style="list-style-type: none"> <li>The Green Bond selection process ensures the right assets in line with the Green Bond framework are evaluated and selected</li> </ul> <p>Establish procedures and secure ongoing monitoring</p> <ul style="list-style-type: none"> <li>It is recommended to include climate competence in the selection process</li> <li>Climate competence function(s) often has veto right in the selection process</li> </ul>	<ul style="list-style-type: none"> <li>Credibility is essential for the long-term development of the Green Bond market place</li> </ul> <ul style="list-style-type: none"> <li>Second opinion conducted by an independent third party specialist</li> <li>The primary objective is to verify the 'Greenness' of the investor's projects/areas</li> <li>Additionally, external assurance providers to verify the selection process in line with the Green Bond framework</li> </ul>	<ul style="list-style-type: none"> <li>The proceeds raised via the Green Bond should be earmarked to support lending to the established eligible Green criteria</li> </ul> <ul style="list-style-type: none"> <li>There are several ways an issuer can earmark Green Bond proceeds, for example                             <ul style="list-style-type: none"> <li>Earmarked account</li> <li>Balanced earmarked positions</li> <li>Virtual Green balance sheet</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>To uphold credibility it is essential to be transparent towards investors and the market</li> </ul> <ul style="list-style-type: none"> <li>Obtained via an annual publically available investor letter</li> <li>The letter should include a list of areas financed, a selection of project examples and a summary of the investor's Green development</li> <li>Identification of relevant impact measurements</li> </ul>
<p><b>The Green Bond universe</b></p> <ul style="list-style-type: none"> <li>Energy efficiency and other energy related initiatives (e.g. renewables) are driving the market at the moment</li> <li>Other project types include energy efficiency, sustainable housing, water management and waste management</li> </ul>	<p><b>Overview of selection process</b></p>	<p><b>Who provides second opinions?</b></p> <ul style="list-style-type: none"> <li>Cicero, DNV, Oekom, Sustainalytics, Vigeo</li> </ul> <p><b>Why does SEB use Cicero?</b></p> <ul style="list-style-type: none"> <li>It's a non for profit academic institution</li> <li>Cicero is broadly recognized, providing research for G8, OECD, UN and the World Bank</li> <li>They have a well developed international network of climate scientists which can be activated for regional development</li> </ul>	<p><b>Example of earmarking</b></p>	<p><b>The investor letter</b></p>

Pillars **1** + **2** + **4** + **5** = the four principles of the Green Bond Principles

# Green Bond Principles – a voluntary process

## Overview

In efforts to develop standards for the green bond market, in January 2014 a consortium of major banks developed a set of voluntary guidelines called the Green Bond Principles “GBP”.

- ▶ These were updated in 2015, 2016 and 2017 and continue to evolve.

### 1. Use of Proceeds:

- ▶ Issuer should declare the eligible green project categories upfront, providing clear environmental benefits.

### 2. Process for Project Evaluation and Selection:

- ▶ Issuer should outline the process of selection and work to establish impact objectives.

### 3. Management of Proceeds:

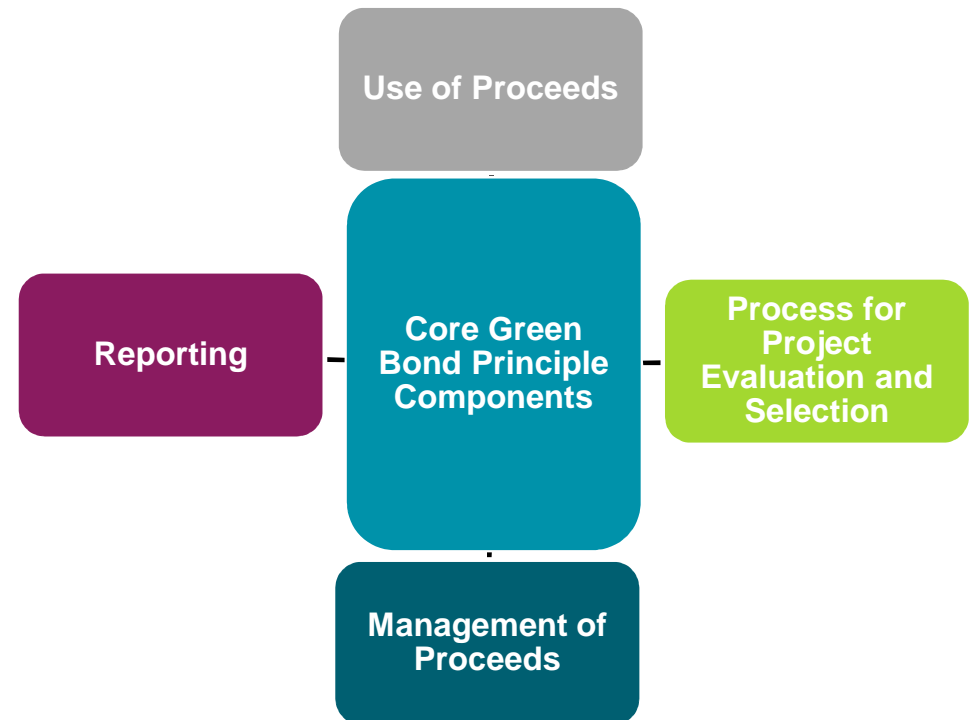
- ▶ Funds should be segregated or otherwise tracked.

### 4. Reporting:

- ▶ Issuers should report at least annually on the use of proceeds, allocated amounts and expected impact.

### Recommendations - External Reviews:

- ▶ The GBP encourage a high level of transparency and recommended that an issuer’s process for project evaluation and selection be supplemented by and external review.



# Key documents in the Green Bond process

## Green Bond Framework

### NACIONAL FINANCIERA S.N.C. GREEN BOND

FRAMEWORK OVERVIEW AND SECOND-PARTY  
REVIEW BY SUSTAINALYTICS

October 7<sup>th</sup>, 2015

## Second Opinion

23 November 2015

### 'Second Opinion' on IFC's Green Bond Framework

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## Annual investor reporting

### Green Bond IMPACT REPORT JUNE 2016



## The Green Bond Principles



### Voluntary Process Guidelines for Issuing Green Bonds

#### Introduction

The Green Bond market aims to enable and develop the key role debt markets can play in funding projects that contribute to environmental sustainability. The Green Bond Principles (GBP) promote integrity in the Green Bond market through guidelines that recommend transparency, disclosure and reporting. They are intended for use by market participants and are designed to drive the provision of information needed to increase capital allocation to such projects. With a focus on the use of proceeds,

#### The 2017 Edition of the GBP

This edition of the GBP benefits from the input of the Autumn 2016 consultation of GBP Members and Observers, as well as from the working groups coordinated by the GBP Executive Committee which reflected on the key themes that surfaced from the consultation. There was also an emphasis on widening the working groups beyond the GBP Executive Committee to participants with relevant expertise from GBP Members and Observers. This update also aims to reflect ongoing feedback from the wider Green Bond stakeholder community and to take into account recent market developments.

The 2017 update remains framed by the same four core components (Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds and Reporting). It also continues to underline the importance of the use of the recommended templates framing issuer alignment with the GBP and the content of external reviews available at the Resource Centre at [www.icmagroup.org/gssbresourcecentre](http://www.icmagroup.org/gssbresourcecentre). The 2017 edition reflects overall the growing maturity of the GBP

# Green Bond market ecosystem and investor sentiment

Drivers overview
<b>Economic</b>
<ul style="list-style-type: none"> <li>Climate stress a financial risk</li> <li>Action vs. business as usual</li> <li>Allocation to resource efficiency</li> </ul>
<b>Regulatory environment</b>
<ul style="list-style-type: none"> <li>Increasing focus on the need of climate financing</li> <li>Recognition of financial stability risk</li> </ul>
<b>Regional benchmarks</b>
<ul style="list-style-type: none"> <li>Challenges and opportunities differ</li> <li>Regions are at different stages in the transition</li> </ul>
<b>International initiatives</b>
<ul style="list-style-type: none"> <li>✓ UNPRI</li> <li>✓ COP21</li> <li>✓ G20 Green Finance Study Group</li> </ul>



Green Bond Funds - examples	
SSgA	BlackRock
AXA	Allianz
Calvert	Amundi
Mirova	Colombia Threadneedle
Storebrand / SPP	Erste AM
SEB	NN

Green Bond listings	
Oslo	Amsterdam
Nasdaq Stockholm	Borsa Italia
London	Johannesburg
Luxembourg	Mexico City
Shenzhen	Riga
Paris	Lisbon

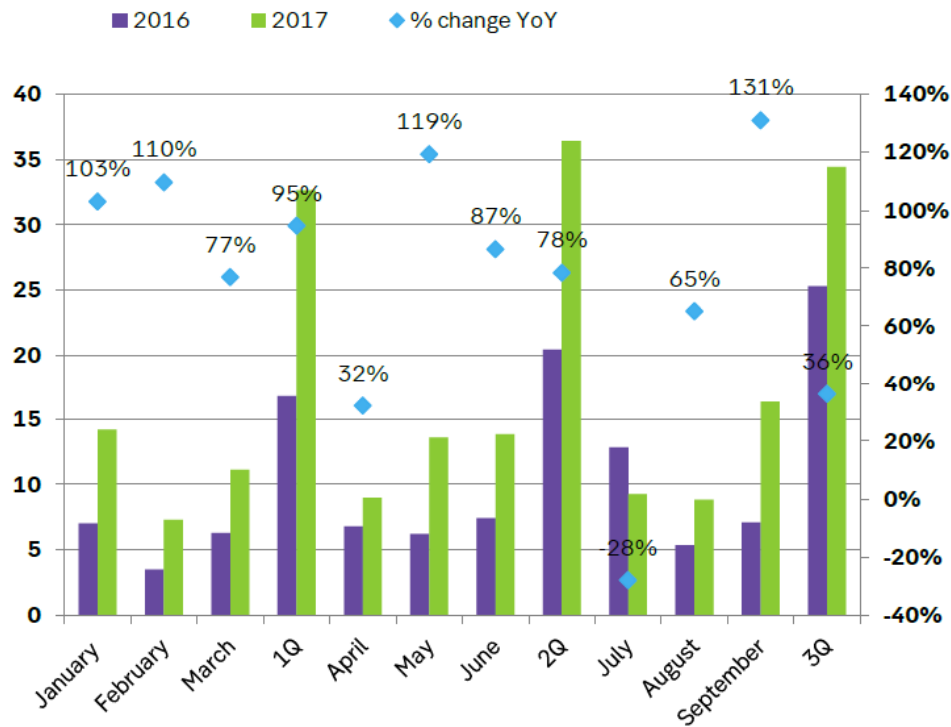
  

Green Bond indices	
Solactive	
Bloomberg/ MSCI	
S&P/Dow Jones	
BAML	
Shenzhen / Luxembourg	
Various China Green Bond indices	



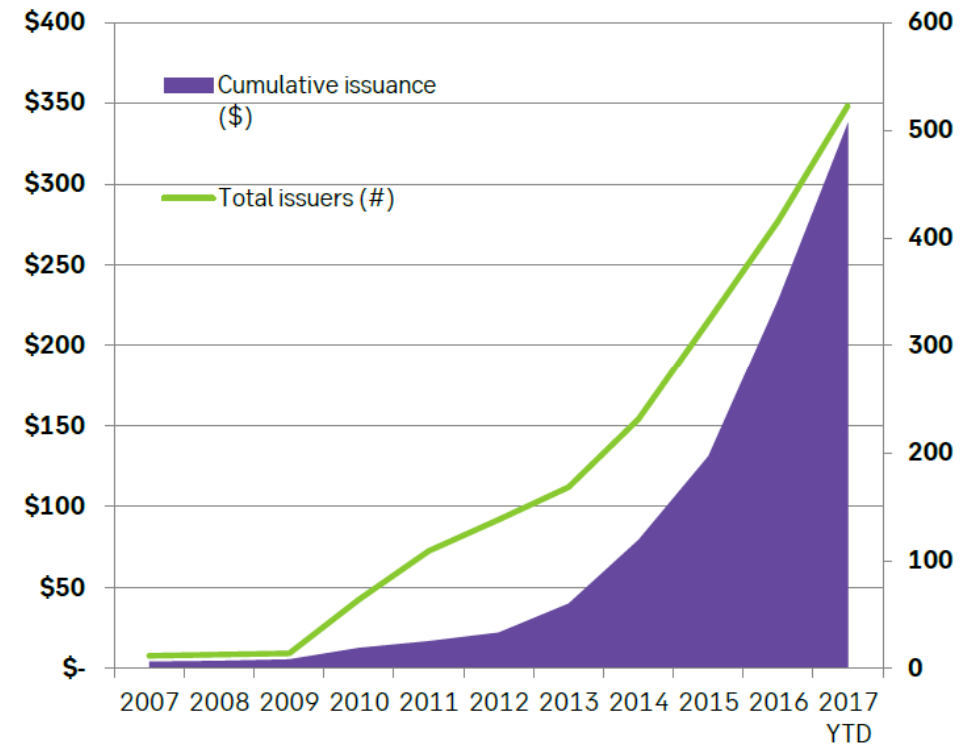
# Global Green Bonds issuance: 2017 (YTD) and cumulative

Figure 1. Periodic issuance (USD Bn) and % change YoY



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

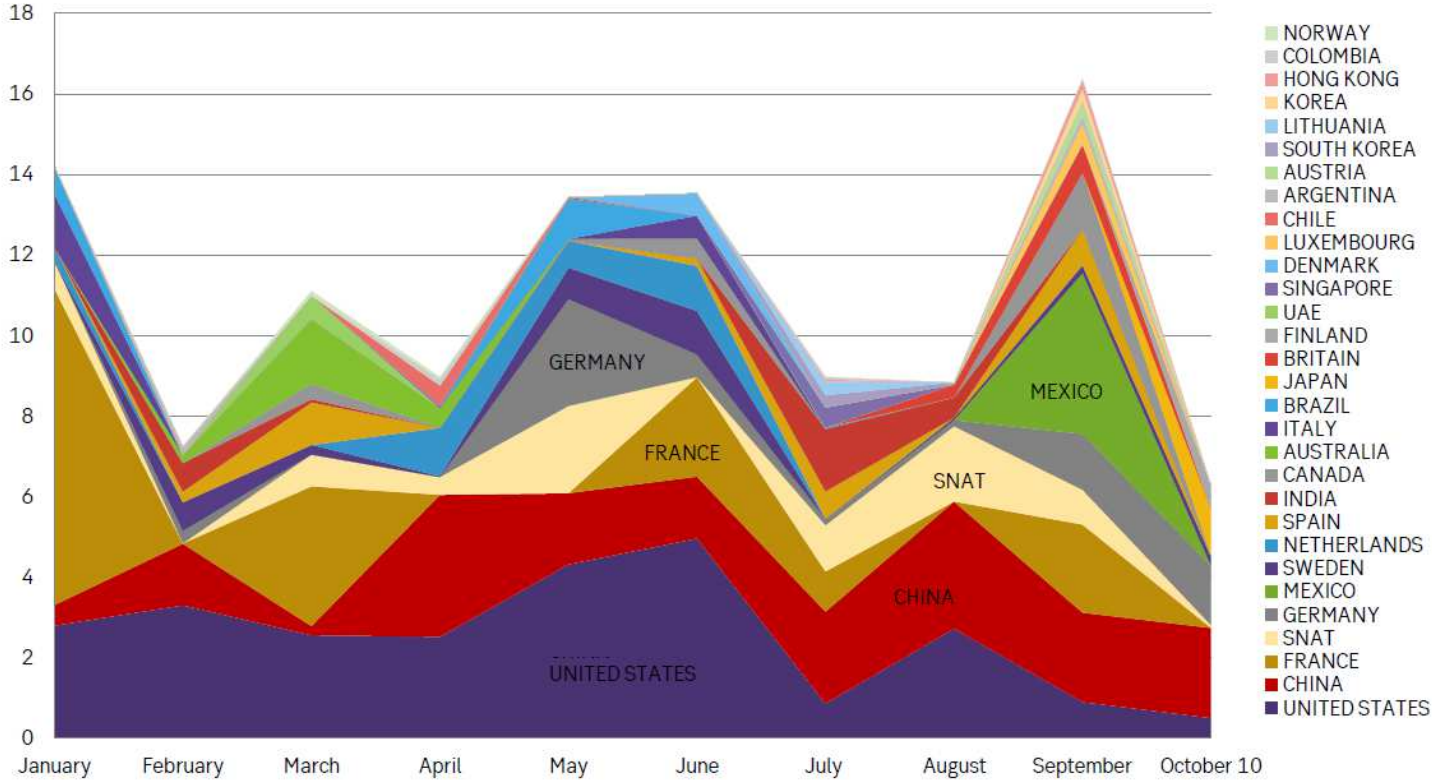
Figure 2. Total cumulative issuance (USD Bn) and # of issuers



Source: SEB analysis based on Bloomberg/BNEF and SEB data. YTD through October 10.

# Country league table 2017

Figure 5. Geographic distribution of green bond issuance in 2017 (USD Bn)



Note: Country of Domicile classifications and terminology from Bloomberg used. SUPRANAT = Supranational, Taiwan = Chinese Taipei. Top issuers labelled in chart for illustration.

Source: SEB analysis based on Bloomberg/BNEF and SEB data. YTD through October 10.

Figure 3. Top 10 countries in 2017, incl. Supranational (USD Bn)

Rank	Region	Issuance	2017 Trajectory YTD
1	UNITED STATES	25.4	
2	CHINA	19.0	
3	FRANCE	17.0	
4	SNAT	8.0	
5	GERMANY	6.7	
6	MEXICO	4.0	
7	SWEDEN	3.3	
8	NETHERLANDS	3.3	
9	SPAIN	3.1	
10	INDIA	2.8	

Source: SEB analysis based on Bloomberg/BNEF and SEB dat. YTD through October 10.

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**Thank you!**

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