Market Risk of Green Bonds and Green Banking

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A decade of Green Bonds
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*

<table>
<thead>
<tr>
<th>Mitigation &amp; Environmental preservation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy</td>
<td>Wind, solar etc.</td>
</tr>
<tr>
<td></td>
<td>Related infrastructure</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>Energy storage and recovery, district heating/cooling, smart grids</td>
</tr>
<tr>
<td>Green Buildings</td>
<td>Building efficiency incl. environmental certification systems such as LEED, BREEAM or equivalent</td>
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<tr>
<td>Pollution Prevention and Control</td>
<td>Waste water management</td>
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<tr>
<td></td>
<td>Recycling and waste-to-energy</td>
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<tr>
<td>Environmentally Sustainable</td>
<td>Sustainable agriculture</td>
</tr>
<tr>
<td>Management of Living Natural Resources</td>
<td>Sustainable forest management</td>
</tr>
<tr>
<td>and Land Use</td>
<td></td>
</tr>
<tr>
<td>Terrestrial and Aquatic Biodiversity</td>
<td>Protection of coastal, marine and watershed management</td>
</tr>
<tr>
<td>Conservation</td>
<td>Nature reserve management</td>
</tr>
<tr>
<td>Clean Transportation</td>
<td>Public transportation and related infrastructure</td>
</tr>
<tr>
<td>Sustainable Water and Waste-water</td>
<td>Alternative fuel vehicles</td>
</tr>
<tr>
<td>Management</td>
<td>Infrastructure for clean and / or drinking water</td>
</tr>
<tr>
<td>Eco-efficient Products, Production</td>
<td>Energy recovery from waste water</td>
</tr>
<tr>
<td>Technologies and Processes</td>
<td></td>
</tr>
<tr>
<td>Nature reserve management</td>
<td></td>
</tr>
<tr>
<td>Adaptation</td>
<td></td>
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<tr>
<td>Climate Change Adaptation</td>
<td>Flood protection</td>
</tr>
<tr>
<td></td>
<td>Disaster early warning systems</td>
</tr>
</tbody>
</table>

* 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

**Definition**
- Use of proceeds
  - Identification and definition of investment areas/assets which are eligible for Green Bond financing

**Selection**
- Process for project evaluation/selection
  - The Green Bond selection process ensures the right assets in line with the Green Bond framework are evaluated and selected

**Verification**
- Assurance through external review
  - Credibility is essential for the long-term development of the Green Bond market place
    - Second opinion conducted by an independent third party specialist
    - The primary objective is to verify the ‘Greenness’ of the investor’s projects/areas
    - Additionally, external assurance providers to verify the selection process in line with the Green Bond framework

**Monitoring**
- Management of proceeds
  - The proceeds raised via the Green Bond should be earmarked to support lending to the established eligible Green criteria
    - There are several ways an issuer can earmark Green Bond proceeds, for example
      - Earmarked account
      - Balanced earmarked positions
      - Virtual Green balance sheet

**Reporting**
- Transparency
  - To uphold credibility it is essential to be transparent towards investors and the market
    - Obtained via an annual publically available investor letter
    - The letter should include a list of areas financed, a selection of project examples and a summary of the investor’s Green development
    - Identification of relevant impact measurements

The Green Bond universe is divided into the following areas that target climate stress:
- Mitigation
- Adaptation
- Environmental

Overview of selection process:
- Overall guidelines
- Eligible Green criteria
- Process for project evaluation
- Approval of eligible assets/projects

Who provides second opinions?
- Cicero, DNV, Oekom, Sustainalytics, Vigeo

Why does SEB use Cicero?
- It’s a non for profit academic institution
- Cicero is broadly recognized, providing research for G8, OECD, UN and the World Bank
- They have a well developed international network of climate scientists which can be activated for regional development

Example of earmarking:
- The investor letter
  - Group Consolidation Account
    - Existing cash pool
    - Extended “Green” cash pool

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 an 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 7th, 2015

Second Opinion

23 November 2015

‘Second Opinion’ on IFC’s Green Bond Framework

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The Green Bond Principles

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 issuance alignment with the GBP and the content of external reviewers available at the Resource Centre at www.domgroup.org/greensourcescentre. The 2017 edition reflects overall the growing maturity of the GBP

Voluntary Process Guidelines for Issuing Green Bonds

Introduction
The Green Bond market aims to enable and develop the key role that 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 address 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 green projects. With a focus on the use of innovations.
Green Bond market ecosystem and investor sentiment

Drivers overview

- **Economic**
  - Climate stress a financial risk
  - Action vs. business as usual
  - Allocation to resource efficiency

- **Regulatory environment**
  - Increasing focus on the need of climate financing
  - Recognition of financial stability risk

- **Regional benchmarks**
  - Challenges and opportunities differ
  - Regions are at different stages in the transition

- **International initiatives**
  - UNPRI
  - COP21
  - G20 Green Finance Study Group

Investor engagement continues to grow through UNPRI* signatories

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

- **Green Bond listings**
  - Oslo
  - Nasdaq Stockholm
  - London
  - Luxembourg
  - Mexico City
  - Riga
  - Lisbon
  - Amsterdam
  - Borsa Italia
  - Johannesburg
  - Shenzhen / Luxembourg
  - Various China Green Bond indices

- **Green Bond indices**
  - Solactive
  - Bloomberg / MSCI
  - S&P/Dow Jones
  - BAML

Source: SEB analysis
Global Green Bonds issuance: 2017 (YTD) and cumulative

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

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.

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Thank you!

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