Huge potential market
Green bonds can play an important role in many sectors

Identified Green Investment Potential, 2016-2030

<table>
<thead>
<tr>
<th>Region</th>
<th>$ trillion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East &amp; North Africa</td>
<td></td>
</tr>
<tr>
<td>Eastern &amp; Central Asia</td>
<td></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td></td>
</tr>
<tr>
<td>South Asia</td>
<td></td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td></td>
</tr>
<tr>
<td>East Asia Pacific</td>
<td>15</td>
</tr>
</tbody>
</table>

Demand for Infrastructure by Sector, 2015-2030

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>43</td>
</tr>
<tr>
<td>Transport</td>
<td>29</td>
</tr>
<tr>
<td>Water and waste</td>
<td>21</td>
</tr>
<tr>
<td>Telecom</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: IFC, IIF
Definition of Green Bonds

Green Bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance new and/or existing eligible Green Projects.
Green Bonds driven by investor demand
PRI signatories and their assets

Source: Unpri.org
ESG = Environmental, Social & Governance
Where is Green Bond money used?

Source: Climate Bonds Initiative. The State of the Market in 2016
Global market growth and issuance by sector

Figure 11. Issuance evolution by sector 2010-2017

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

Figure 12. Sector shares, issuance 2010-2017

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

Source SEB (2017) The Green Bond 4Q(1)
Global Green Bond Market Scenarios for Q4 2017 (USD Bn)

Source: SEB analysis based on Bloomberg and SEB data
Cumulative issuance

Source: SEB (2017) The Green Bond 4Q(1)
Green bonds by currency

Figure 9. Currency split, cumulative issuance 2007-2017

Figure 10. Currency split of issuance in 2017 YTD

Source: SEB analysis based on Bloomberg/BNEF and SEB data. YTD through August.
Recent regional development

Regional issuance 2016 vs 2015 (USD bn)

Source: SEB analysis based on Bloomberg data
Top 10 countries 2017
(through October)

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

Source: SEB analysis based on Bloomberg/BNEF and SEB data. YTD through October 10.
Issuer types in OECD and EMDE\(^{(1)}\)

Note 1: IMF definition: Emerging markets and Developing Economies (153 countries)
Source: SEB (2017) The Green Bond 4Q(1)
Who buys green bonds?

Five main groups of investors

**Opportunistic**: Mainstream fixed income investors who are mainly interested in fiduciary performance but also like to have environmental benefit

**Discretionary Mandates**: Mainstream asset managers that have a mandate to invest in a certain type of green bond

**Dedicated**: Mainstream broad market fixed income investors who also have a dedicated SRI/Green portfolio or target

**Specialist**: Investors that exclusively focus on green bonds

**Incidental**: Purchasers who may not have a specific environmental preference, but like the risk/return profile of a green bond

*Source: SEB*
Pricing of Green Bonds

- Created for mainstream investors on the basis of equal pricing
- Law of supply and demand
- Anecdotal evidence in a world of unique transactions
- Bloomberg report (Feb 2017): “Investors are willing to pay a “green premium”. 25bps lower yield for green bonds issued by supranationals in EUR. Apart from that, no consistent premium for green securities

- Three reasons price premiums aren’t more common:
  - Use-of-proceeds green bonds are still tied to corporate risk
  - Green bond governance as a whole is too weak
  - It is nearly impossible to attribute differentials to the green credentials (too small sample to analyse and separate effects)

- Potential effect from increasing climate risk awareness: “…as investors increasingly price environmental risks into models, non-green bonds would require a higher risk-adjusted return.”
Primary issuance pricing in China
For bonds with the same ratings, coupon rates of green bonds are lower than regular bonds
SEB and the Green Bond market
A reliable partner and a global leader in Green Bonds

Investor relations
- SEB has met with nearly 1200 investors worldwide in dedicated Green Bond meetings
- SEB has placed Green Bonds to around 800 investors
- SEB has been and is advising a large amount of investors on how to implement Green Investment strategies

Issuer relations
- SEB is advising issuers of all types globally
  - Advice on establishing Green Bond frameworks
  - Coordinating second opinions
  - Developing issuance strategies

International engagement
- SEB is active in the reference group created to support the UN Climate Fund
- SEB is interacting with a number of governments to develop mechanisms to engage private capital in climate investments
- SEB and GIZ have a strategic alliance on Green Bond market development in G20 emerging markets
- SEB has been invited and been a speaker in high profile event such as
  - UN General Assembly
  - UN Foundation / INCR Investor Summit
  - OECD Roundtable
  - Environmental Finance Conference
  - US State Department

SEB & GIZ Strategic Alliance on Green Bond Market Development in G20 Emerging Markets