Global Green Bond Market – overview

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Climate Bonds Initiative
The Climate Bonds Initiative

We are an investor-focused NGO mobilising debt capital markets for climate solutions.

Climate Bonds Standard & Certification

- Definitions for investors and guidelines for bond issuers
- Assurance through certification

Policy advisory

- Policy models and government advice
- Efforts in emerging markets to grow issuance
- Green innovations e.g. securitization, covered bonds, Islamic Finance

Market intelligence

- Green bonds data base, feeding indices
- State of the market reports, GIIO, global and regional

Capacity building & market development

- Developing expertise to issue, invest in and underwrite green bonds
- Key stakeholders convening & mobilising
What are Green Bonds?

Green bonds are debt securities issued by financial, non-financial or public entities where the proceeds are used to finance 100% green projects and assets.

Just like regular vanilla bonds. “Green” is a bonus feature to the bond.

It’s about the projects and the assets, not the issuer.

The green label is a tool for investors.

<table>
<thead>
<tr>
<th>Proceeds to climate projects</th>
<th>Comparable pricing to vanilla bonds</th>
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<tbody>
<tr>
<td>Refinance as well as new projects</td>
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<table>
<thead>
<tr>
<th>Any entity</th>
<th>Sovereign</th>
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<tbody>
<tr>
<td></td>
<td>Local Government</td>
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<td></td>
<td>Multilateral Development Banks</td>
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<td>Commercial Banks</td>
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<td>Corporates</td>
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<thead>
<tr>
<th>Any structure</th>
<th>Senior unsecured</th>
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<tbody>
<tr>
<td></td>
<td>Asset backed</td>
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<td></td>
<td>Covered Bonds</td>
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<td></td>
<td>Loans, Sukuk, others</td>
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</table>

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<thead>
<tr>
<th>Reporting</th>
<th>Transparency to assets and projects</th>
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<tbody>
<tr>
<td></td>
<td>Independent review</td>
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<td></td>
<td>Reporting on use of proceeds</td>
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</table>
Green bonds: tool to finance the transition

**Global financial markets**
- $90trn bond market
- Investors
  - Seeking yield
  - Want green

**Green bonds**

**Climate mitigation and adaptation requirements**
- Paris agreement
- IEA: Energy sector requires $53trn investment by 2035
- $93trn for infra by 2030
Global green bond market: Up x4.5 over 2014 annual volume

- USD167bn total issuance in 2018
- Over 1,500 green bonds issues
- 44 countries, 8 new, all continents
- 320 issuers (204 new)
- EUR 4.5bn – largest bond (Belgium)
- 5 new sovereign GB issuers: Belgium, Indonesia, Ireland, Lithuania and the Seychelles
- Label diversification increasing

Benefits
- New investors
- Pricing
- Halo

Green bonds by issuer type
Green bond benefits

Issuer benefits

- Investor diversification (regions, types)
- Investor engagement and stickiness
- CSR / Funding alignment supporting reputation

Investor benefits

- Greening AuM through well-understood products
- ‘Access’ to green assets / projects without project risk
- Strong secondary market performance
- Engagement with company management on green

Issuer benefits become more and more apparent and diverse...

...given strong and persistent investor demand for green.
Who buys Green Bonds?

Mainstream investors and ESG specialists

The huge demand for these bonds is coming from a range of investors. Some examples include:

• Mainstream institutional investors; Aviva, BlackRock, States Street
• Specialist ESG (Environmental, Social, Governance) and Responsible Investors; Natixis, Mirova, ACTIAM
• Corporate Treasury; Barclays, Apple
• Sovereign and municipal governments; Central Bank of Peru, California State Treasurer
• Retail investors; World Bank issuances for retail investors through Merrill Lynch Wealth Mangers and Morgan Stanley Wealth Mangers. IFC and SolarCity issuances for retail investors through Incapital
Issuer types: Sovereigns are growing strongly
Use of proceeds: a wider variety of green assets are considered as confidence builds in the format.
Use of proceeds bonds work for all debt formats

- Covered bond
- Sukuk
- Revenue bond
- Schuldschein
- Commercial paper
- Securitisation
- Senior unsecured
- Perpetual/hybrid
- Project finance
- Tranche in a deal
- Private placement
- Retail bond
- MTN programme
- Subordinated bond
- US Muni
- Loan
- Project finance
Market governance: How do you know it is green?

**Overarching market guidelines**
- Global:
  - Climate Bonds Standard
  - Green Bond Principles
- Country-specific:
  - Regulation (China)
  - Exchange guidance
  - Country guidance (Japan, Taiwan etc.)

**Best practice: external review**
- Climate Bonds Certification
  - E.g. Barclays, ANZ, ING
- Second party opinion
  - E.g. World Bank, Engie, TFL, Repsol
- Green Bond rating
- Assurance statement under local regulation
  - E.g.: China Industrial Bank
- Issuer disclosure
  - E.g. US munis,

**Poor practice: No external review**
The Climate Bonds Taxonomy identifies the assets and projects needed to deliver a low carbon economy and gives GHG emissions screening criteria consistent with the 2-degree global warming target set by the COP 21 Paris Agreement. More information is available at https://standard.climatebonds.net/taxonomy.

<table>
<thead>
<tr>
<th>ENERGY</th>
<th>TRANSPORT</th>
<th>WATER</th>
<th>BUILDINGS</th>
<th>LAND USE &amp; MARINE RESOURCES</th>
<th>INDUSTRY</th>
<th>WASTE</th>
<th>ICT</th>
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<tbody>
<tr>
<td>Solar</td>
<td>Private transport</td>
<td>Water monitoring</td>
<td>Residential</td>
<td>Agriculture</td>
<td>Cement production</td>
<td>Preparation</td>
<td>Broadband networks</td>
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<tr>
<td>Wind</td>
<td>Public passenger transport</td>
<td>Water storage</td>
<td>Commercial</td>
<td>Commercial Forestry</td>
<td>Steel, iron &amp; aluminium production</td>
<td>Reuse</td>
<td>Telecommuting software and service</td>
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<tr>
<td>Geothermal</td>
<td>Freight rail</td>
<td>Water treatment</td>
<td>Products &amp; systems for efficiency</td>
<td>Ecosystem conservation &amp; restoration</td>
<td>Glass production</td>
<td>Recycling</td>
<td>Data hubs</td>
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<tr>
<td>Bioenergy</td>
<td>Aviation</td>
<td>Water distribution</td>
<td>Urban development</td>
<td>Fisheries &amp; aquaculture</td>
<td>Chemical production</td>
<td>Biological treatment</td>
<td>Power management</td>
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<td>Hydropower</td>
<td>Water-borne</td>
<td>Flood defence</td>
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<td>Supply chain management</td>
<td>Fuel production</td>
<td>Waste to energy</td>
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<td>Marine Renewables</td>
<td>Nature-based solutions</td>
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<td>Transmission &amp; distribution</td>
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<td>Storage</td>
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</tbody>
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- Certification Criteria approved
- Criteria under development
- Due to commence
Incentives require regulation

Consistent rules support market growth

Voluntary rules drove early market growth, allowed global consistency
Synergies between Green Bonds and SDGs

Many SDGs have a social primary focus, but a climate-resilience and mitigation lens needs to be applied for social goals to be achieved.

Investment in infrastructure assets, whether through green, social or SDG bonds, need to align with climate targets, since failing to act on climate change will compromise the SDGs as a whole.

Climate change presents the single biggest threat to development, and its widespread [...] Urgent action to combat climate change and minimize its disruptions is integral to the successful implementation of the Sustainable Development Goals.

UN: Sustainable Development Goals
Introduction

A large segment of institutional investors have indicated their support for action to address climate change. However, when it comes to environmental criteria, investors currently have too few tools to help ensure that their investments are making a significant impact, particularly for debt based investments. The market needs independent, science-driven guidance on which assets and activities are consistent with a rapid transition to a low-carbon economy.

The Climate Bonds Taxonomy identifies the assets and projects needed to deliver a low carbon economy and gives GHG emissions screening criteria consistent with the 2-degree global warming target set by the COP21 Paris Agreement. It has been developed based on the latest climate science including research from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), and has benefited from the input of hundreds of technical experts from around the world. It can be used by any entity looking to identify which assets and activities, and associated financial instruments, are compatible with a 2-degree trajectory.

First released in 2013, the Climate Bonds Taxonomy is regularly updated based on the latest climate science, emergence of new technologies and on the Climate Bonds Standard Sector Criteria.

Contents

Automatically compatible
Compatible if compliant with screening indicator
Not compatible
More work required
Climate Bonds Certification available

Energy
Transport
Water
Buildings
Land use & marine
Industry
Waste
ICT

Using this document

A traffic light system has been adopted to indicate whether identified assets and projects are considered to be automatically compatible with a 2-degree decarbonisation trajectory. Green Light is automatically compatible. Orange Light is potentially compatible, depending on whether more specific criteria are met. Red Light is incompatible. A Grey circle is used to indicate where further work is required to determine which traffic light colour is appropriate for a specific sub-set of assets or activities.

The Taxonomy is the foundation used by the Climate Bonds Initiative to screen bonds to determine whether assets or projects underlying an investment are eligible for green or climate finance. Where detailed analysis of a sector has been undertaken and specific eligibility Criteria have been developed, bonds in that sector can be Climate Bonds Certified. This is indicated via a blue 'Climate Bonds Certification tick'. Where detailed sector based Criteria for Certification are still under development, this is indicated by a yellow circle. In this case, bonds in this sector cannot yet be certified under the Climate Bonds Standard.