Green Taxonomies, Sustainability standards, accreditation, disclosure and reporting

Cedric RIMAUD, CFA
Due Diligence Tools

- Investment preferences of investors
- Must evolve in line with investor demand
- Help distinguish green projects from other investments
- Creates comparability of sustainability characteristics of various financial instruments

The ever-expanding list of initiatives includes:

- Task Force on Climate-related Financial Disclosures (TCFD)
- OECD Center on Green Finance
- UK Green Finance Taskforce
- The Central Banks and Supervisors Network for Greening the Financial System
- and many more...
The Green Bond market

The $484bn labelled green bond market
Outstanding, end Dec 2018

$1.06tn other climate-aligned bonds
Outstanding, end June 2018

$1tr labelled green bonds by 2020

The $90tr global bond market
Why use Green Bonds in Climate Change?

1. **They marry environmental concerns with economic growth and global finance:** feature on mainstream investment manager agendas.

2. **Green bonds are about ‘grey-to-green’ business adaptation, i.e. about strategy.** This moves the discussion from CSR to CEO/CFO.

3. **They are a conduit into national debates about countries’ sustainable development pathways and similarly for companies.**

4. **Green bonds involve an unprecedented global collaboration across interest groups:** buy-side, sell-side, politics, academics, civil society.

5. **Bonds are well understood instruments, so this is a way to build the market quickly, before moving on to more challenging areas:** EM, decarbonizing banks’ loan books etc.
Key 2018 figures

- USD167.3bn total green bond issuance
- 3% growth on 2017
- 1,543 green bond issues from 320 issuers
- 204 new issuers, bringing the total to 625
- 44 countries, of which 8 are new countries
- EUR4.5bn (USD5.5bn) was largest single green bond, issued by the Kingdom of Belgium
- New sovereign green bonds from Belgium, Indonesia, Ireland, Lithuania, Poland and the Seychelles, and two taps of France’s GrOAT
ASEAN issuance is growing and diversifying

Sovereign sukuk and loans fuel 2018 green bond market growth

Green bond issuance in ASEAN

Note: All 2018 data as of 30 November 2018
Bonds and debt instruments come in many flavours, and any of them can be labelled Green

- Covered bond
- Sukuk
- Revenue bond
- Schuldschein
- Commercial paper
- Securitisation
- Senior unsecured
- Perpetual/hybrid
- Project finance
- Tranche in a deal
- Loan
- Private placement
- Subordinated bond
- Retail bond
- MTN programme
- US Muni
- Project finance
Green bond guidance is spreading

Incentives require regulation

Voluntary rules drove early market growth, allowed global consistency
The TEG was established in June 2018 to assist the Commission in the implementation of the Action Plan, which is based on the HLEG’s work. In particular the TEG is tasked with the development of:

1. Technical screening criteria for environmentally sustainable economic activities under the EU taxonomy;

2. An EU Green Bond Standard;

3. Minimum standards for the methodology of "low carbon" and "positive carbon impact" indices; and

4. Metrics allowing improving disclosure on climate-related information.
Globally accepted principles for labelling in the green bond markets were established in 2014.

Green Bond Principles have four core components:
1. Use of proceeds
2. Process for Project Selection
3. Management of Proceeds
4. Reporting
Plus various options for External Review
Climate Bonds Standard & Certification Scheme is the most robust approach globally

The Climate Bonds Standard and Certification Scheme is a *Fair Trade*-like labelling scheme for green bonds. **Rigorous scientific criteria** ensure that it is consistent with the 2 degrees Celsius warming limit in the goals of the Paris Climate Agreement.

The Scheme is **used globally by bond issuers, governments and investors** to prioritise investments which genuinely contribute to addressing climate change.

The Climate Bonds Standard is **fully aligned with the Green Bond Principles and the Green Loan Principles**.

It is made up of two parts:
1. **Climate Bonds Standard** details the management and reporting processes
2. **Climate Bonds Taxonomy** and **Sector-by-Sector Eligibility Criteria** detail the climate credentials and technical thresholds which the assets must meet
Benefits of Certification to the Issuer

- **Investor diversification** – low-carbon integrity of the bond attracts a much broader base of investors

- **Lower cost of capital** – green bonds enable issuers to raise large amounts of capital to support environmental investments that may not otherwise be available or may have been funded using expensive capital

- **High oversubscription** – strong demand for green bonds generally outstrip supply

- **Stickier Pool of Investors** – Green Bond Investors invest to the long term, matching maturity with project life

- **Tighter yields** – there is a view that stronger pricing will be achieved for future green bond issuance

- **Green flavor** – enhances issuer reputation
Sovereign green bonds – why issue?

**Benefits:**
- Raising capital to finance infrastructure in line with its national contribution to meeting the goals of the Paris Agreement
- Attracting new investors
- Providing policy certainty
- Improving collaboration between ministries
- Drawing international attention to its environmental policies

**Impact of sovereign green bonds:**
- Kick-starting a domestic market
- Providing scale and liquidity to the green bond market
- Using signalling power to other market stakeholders
- Diversifying the green bond market/tapping into new investor segments
The march of sovereign green bonds continued throughout 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Size (USD)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>2016, 2018</td>
<td>2 billion</td>
<td>First Sovereign issuer</td>
</tr>
<tr>
<td>France</td>
<td>2017-2018</td>
<td>16.7 billion</td>
<td>Largest Sovereign issuer to date; tied with France’s ambitious climate goals</td>
</tr>
<tr>
<td>Fiji</td>
<td>2017</td>
<td>50 million</td>
<td>First emerging market issuer. Linked to hosting UN Climate Summit in 2017 First “Small Island State” issuer Bond size is equivalent to 2% of its national debt</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2017</td>
<td>30 million</td>
<td>First Climate Bonds Certified Sovereign Bond; Oil exporting country</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2018</td>
<td>1.25 billion</td>
<td>First Green Sovereign Sukuk, First Sovereign in Asia</td>
</tr>
<tr>
<td>Belgium</td>
<td>2018</td>
<td>5.4 billion</td>
<td>Third Sovereign issuer from Europe</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2018</td>
<td>24 million</td>
<td>This is ambitious and large for an emerging European economy</td>
</tr>
<tr>
<td>Ireland</td>
<td>2018</td>
<td>USD3.5bn</td>
<td>Third largest sovereign bond after the Republic of France’s Green OAT and Belgium’s Green OLO.</td>
</tr>
<tr>
<td>Seychelles</td>
<td>2018</td>
<td>USD15m</td>
<td>World’s first blue sovereign bond. Proceeds are expected to eligible activities related to sustainable fisheries and marine projects.</td>
</tr>
</tbody>
</table>
In 2018 we witnessed a dramatic rise in the issuance of sustainability, SDG and social bonds, underscoring increasing label diversification. (SDG = Sustainable Development Goals from the UN)

Taking all labelled issuance into account shows the total sustainable bond market growing to USD226.1bn, or up 13% in 2018.

While the Climate Bonds Initiative remains focused on green bonds which are specifically linked to climate-change mitigation, adaptation and resilience, we acknowledge that other labelled bonds are also financing climate change solutions.
GBP’s Pillars form a platform for green bond labelling

The Green Bond Principles

<table>
<thead>
<tr>
<th>Pillar 1</th>
<th>Pillar 2</th>
<th>Pillar 3</th>
<th>Pillar 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of proceeds – identifying eligible projects</td>
<td>Process for project evaluation and selection</td>
<td>Management of Proceeds: Ring-fencing or notional equivalence</td>
<td>Reporting: use of proceeds, impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External review recommendation</td>
</tr>
</tbody>
</table>
Climate Bonds Taxonomy

ENERGY
- Solar
- Wind
- Geothermal
- Bioenergy
- Hydropower
- Marine Renewables
- Transmission & distribution
- Storage

TRANSPORT
- Private transport
- Public passenger transport
- Freight rail
- Aviation
- Water-borne

WATER
- Water monitoring
- Water storage
- Water treatment
- Water distribution
- Flood defence

BUILDINGS
- Residential
- Commercial
- Products & systems for efficiency
- Urban development
- Nature-based solutions

LAND USE & MARINE RESOURCES
- Agriculture
- Commercial Forestry
- Ecosystem conservation & restoration
- Fisheries & aquaculture
- Supply chain management

INDUSTRY
- Cement production
- Steel, iron & aluminium production
- Glass production
- Chemical production
- Fuel production

WASTE
- Preparation
- Broadband networks
- Reuse
- Telecommuting software and service
- Recycling
- Data hubs
- Biological treatment
- Power management
- Waste to energy
- Landfill
- Radioactive waste management

Certification Criteria approved
Criteria under development
Due to commence
The Green Bond Market and the Sustainable Development Goals are inherently linked

- The SDGs are gaining widespread support across a broad market base, including investor groups, investors, corporates and international development bodies.

- Achieving the climate goal is reliant on approaching the other SDGs with a climate lens, especially water (SDG6), energy (SDG7), buildings and transport (SDG9), city infrastructure (SDG11) and agriculture (SDG15).

- While many SDGs have a social primary focus, a climate-resilient lens needs to be applied in order for the social goals to be achieved.
Certification is seen by many as the future for ensuring the integrity of the green bond market

1. Prepare the bond
   - Identify assets that meet the relevant sector criteria and compile supporting information
   - Create Green Bond Framework setting out how proceeds of the bond will be used

2. Engage a verifier
   - Engage an Approved Verifier for pre- and post-issuance Certification
   - Provide them with relevant information
   - Receive a Verifier’s Report giving assurance that Climate Bonds Standard requirements are met

3. Get Certified & issue a Certified Climate Bond
   - Submit the Verifier’s Report and Information Form to the Climate Bonds Initiative
   - Receive a decision on pre-issuance Certification
   - Issue your bond, using the Certified Climate Bond mark

4. Confirm the Certification post-issuance
   - Within 12 months of issuance, submit the Verifiers post-issuance report
   - Receive notification of post-issuance certification

5. Report annually
   - Prepare a simple report each year for term of the bond
   - Provide it to bond holders and Climate Bonds Initiative

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Climate Bonds Standard and Certification Scheme – benefits for multiple players

**Issuers**
Indicates features that should be built into infrastructure projects, if they are to be compatible with Paris Agreement goals

**Investors**
Indicates which bonds are aligned with the Paris Agreement goals, so that investors can be more confident about the bond’s green credentials

**Governments**
Indicates to Governments which low carbon projects and infrastructure should be prioritised with policy support
Harmonisation of green definitions and criteria is an immediate goal for the green bond market

- Investors are interested to see the details of the projects and assets linked to the bond, but they often don’t have the technical background to judge its merits
- Second Party Opinions have provided this confidence based on a number of different proprietary approaches and reassuring narratives on green credentials
- There is a need for consistent and widespread use of definitions and criteria to alleviate this uncertainty for investors, especially mainstream (non-ESG) investors.

Work is underway in the EU, China and many other jurisdictions, with support from CBI and GBP, to establish and harmonise green definitions and criteria
Solar Criteria

Eligible projects and assets

1. Solar electricity generation facilities
2. Wholly dedicated transmission infrastructure and other supporting infrastructure for solar electricity generation facilities including inverters, transformers, energy storage systems and control systems
3. Solar thermal facilities such as solar hot water systems

*If there is fossil fuel back-up generation, then the back-up must account for less than 15% of the total energy produced by the facilities*
Wind Criteria

Eligible project & assets

1. The development, construction and operation of wind farms
2. Operational production or manufacturing facilities wholly dedicated to wind energy development
3. Wholly dedicated transmission infrastructure for wind farms
Geothermal Criteria

Eligible project & assets

1. New and existing geothermal projects with direct emissions of less than 100gCO$_2$/kWh

2. Geothermal projects with mitigation technologies that will render the non-condensable gas releases to the atmosphere negligible

3. Geothermal projects that have been reviewed and registered under the Clean Development Mechanism
## Transport Criteria

<table>
<thead>
<tr>
<th>Eligibility</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| Private light-duty and heavy goods vehicles | • Per p-km or per t-km emissions of the vehicles lower than appropriate threshold  
  • Full electric and hybrid vehicles automatically qualify |
| Public passenger transport         | • All infrastructure, infrastructure upgrades, rolling stock and vehicles for *electrified* public transport automatically qualify, including electrified rail, and trams  
  • For fossil fuel or hybrid vehicles or rolling stock, the project qualify if per p-km emissions are below appropriate threshold (depends on load factor) |
| Dedicated freight railway lines    | • All infrastructure, infrastructure upgrades and rolling stock for electrified freight rail lines automatically qualify  
  • Non-electrified projects, products or supporting infrastructure qualify if per t-km emissions are below appropriate threshold  
  • Dedicated freight lines for fossil fuel transport excluded |
| Supporting Infrastructure          | • All supporting infrastructure qualifies if it contributes to achieving the emissions threshold |
Buildings Criteria

Eligible project & assets

1. **Commercial buildings**: Buildings must be in the top 15% of their city in terms of emissions performance. This threshold in emissions reduces to zero by 2050.

2. **Residential buildings**: Existing building codes, energy rating schemes (e.g. US Energy Star) and energy labeling schemes (e.g. Energy Performance Certificates in the UK) are used as proxies for determining the 15% threshold.

3. **Upgrade projects**: Building improvements that achieve emission reductions of 30% to 50% from a baseline will qualify for certification. Any type of building can qualify under this approach.
Buildings Criteria: Key Principles

Emissions performance trajectories:
Each building type in a city has an emissions performance trajectory (e.g. office, retail, industrial, hotels)

Start of trajectory = Top 15% most energy efficient buildings in a city or region
End of trajectory = Zero emissions in 2050

Produce emissions thresholds based on the bond issuance date and bond term. Portfolio of buildings must be below the threshold to be eligible. (kgCO2/sqm NLA)
Buildings Criteria: Commercial

STEP 1
- Discover your local city baseline and performance target

STEP 2
- My property portfolio satisfies the performance target
- My property portfolio does not satisfy the performance target

STEP 3
- Maintain performance over the bond term
- Improve portfolio performance over the bond term
- Achieve LEED Gold/Platinum or equivalent under other building standards + minimum 30% performance improvement against ASHRAE 90.1

Path 1
Path 2
Path 3

Commercial
Buildings Criteria: Residential

**STEP 1**
Discover Climate Bonds approved building codes and energy ratings/labels

**STEP 2**
My property portfolio complies with approved building codes and/or energy ratings/labels

**STEP 3**
Maintain compliance

Path 1
- My property portfolio complies with building codes and/or energy ratings/labels *not approved* by Climate Bonds
- Demonstrate evidence that those building codes and/or energy ratings/labels position buildings in the top 15% of their city

Path 2
- Residential
Water Criteria

Eligible project & assets

**Built water infrastructure projects and assets**

Key features

1. **Climate mitigation**: eligible if either:
   a. No emissions impact is expected
   b. Emissions impact is expected, and the issuer has estimated the GHG mitigation impacts that will be delivered over the operational lifetime of the project or asset. This impact should be defined in terms of the decreased emissions or increased sequestration relative to a business as usual baseline.

2. **Climate resilience**: Issuers must have carried out a sufficient vulnerability assessment, and if necessary, prepared an appropriate management response plan to any climate risks identified therein. The Water Criteria contain a scorecard to check this.
Marine Renewable Energy Criteria

Establishment, acquisition, expansion and management of renewable energy facilities, and their dedicated infrastructure and component manufacture.

These might include:
- Offshore Wind energy
- Offshore Solar energy
- Tidal facilities; including in-stream, lagoon and barrage
- Wave facilities
- Ocean current
- Ocean thermal energy conversion
- Salinity driven energy facilities
Forestry projects can be net emitters or net sinks of GHG emissions, and may not be resilient to predicted climate change. Criteria are needed to ensure green finance is only going to projects that are sequestering carbon and climate change resilient.

Scope:
• Plantation forestry
• Sustainable forest management
• Harvest of Non-Timber Forest Products
• Forest conservation & restoration
• Other land conservation & restoration
• Supporting infrastructure & supply chain
A roadmap provides common milestones

Policy maker and/or other market champion(s) initiate dialogue on green bond opportunity

Capital market readiness is assessed for green bond issuance and/or other green finance instruments

National green bond guidance released by the regulator or exchange

First green bond(s) issued in domestic markets

Market champions carry out green bond/ green finance promotional campaign

Training provided for issuers, investors, regulators and verifiers

The domestic green bond pipeline is presented to international investors

Regulator introduces policy support and/or incentives

Domestic investors issue a Green Bond Statement/ attend meetings with issuers

A green bond segment and index are developed by the exchange

A Market Development Council is launched with a work plan

Capacity building is provided to develop a pool of local, credible, external review providers
Going forward: Green Loans

Use of Proceeds

Clear environmental benefits
- Several broad categories of areas of environmental concern
  - Climate change
  - Resource depletion
  - Loss of biodiversity
  - Air, water & soil pollution

Process for Project Evaluation & Selection
- Their environmental sustainability objectives;
- The process by which the borrower determines how its projects fit within the eligible categories; and
- The related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental risks.

Management of Proceeds
- The proceeds of a green loan should be credited to a dedicated account or otherwise tracked by the borrower in an appropriate manner, so as to maintain transparency and promote the integrity of the product.

Reporting
- Readily available up to date information on the use of proceeds to be renewed annually until fully drawn, and as necessary thereafter in the event of material developments.
- Transparency in communicating the expected impact of projects. The GLP recommend the use of qualitative performance indicators and, where feasible, quantitative performance measures.
## General process for issuing green bonds

<table>
<thead>
<tr>
<th>Issuing a regular bond</th>
<th>Issuing a Labelled Bond – additional steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Get rated</td>
<td>• Define Green/Social/Sustainable Bond Framework or define how project meets defined eligibility criteria</td>
</tr>
<tr>
<td>• Get market intelligence on currency, tenor, size</td>
<td>• Put in place project selection process and select eligible projects</td>
</tr>
<tr>
<td>• Decide on underwriters</td>
<td>• Set up accounts and process to earmark and allocate proceeds</td>
</tr>
<tr>
<td>• Register with local regulator</td>
<td>• Get pre issuance external review</td>
</tr>
<tr>
<td>• Issue prospectus</td>
<td>• Allocate proceeds to the project</td>
</tr>
<tr>
<td>• Comfort letter / due diligence</td>
<td></td>
</tr>
<tr>
<td>• Outreach through roadshows and sales</td>
<td></td>
</tr>
</tbody>
</table>

### Launch the bond into the market

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Price and allocate bond to support secondary market performance</td>
<td>• Allocate proceeds to the projects</td>
</tr>
<tr>
<td>• Communication to the capital market</td>
<td>• Monitor the projects</td>
</tr>
<tr>
<td>• Monitor secondary market</td>
<td>• Publish use of proceeds and impact reports</td>
</tr>
<tr>
<td></td>
<td>• Post issuance audit (if required)</td>
</tr>
</tbody>
</table>
Review of Reporting Practices

79% of bonds have some form of impact reporting in place

<table>
<thead>
<tr>
<th>Year</th>
<th>Reporting Impacts</th>
<th>Not Reporting Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>58</td>
<td>51</td>
</tr>
<tr>
<td>2015</td>
<td>105</td>
<td>101</td>
</tr>
<tr>
<td>2016</td>
<td>259</td>
<td>110</td>
</tr>
<tr>
<td>2017</td>
<td>1063</td>
<td>121</td>
</tr>
</tbody>
</table>
Review of Reporting Practices

1. Make information easy to find
2. Provide comprehensive reporting
3. Report regularly and consistently
4. Display information clearly with graphics, benchmarks, comments
5. Obtain post-issuance external reviews to confirm allocations and verify impact disclosure
6. Use of Proceeds: disclose the funded projects, both at- and post-issuance
7. Impacts: disclose methodologies and specify if metrics are estimated or measured, report absolute emissions reductions and relative to a specified benchmark level
8. Deliver on reporting commitment
Review of Reporting Practices

Example: Energy

The IFI Harmonized Framework provides suggested reporting metrics for the energy, transport, water/wastewater and waste sectors. The Nordic Position Paper covers these and provides additional suggested reporting metrics for sustainable agriculture/land use and adaptation.

<table>
<thead>
<tr>
<th>IFI Harmonized Framework</th>
<th>Nordic Public Sector Issuers Position Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENERGY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Renewable energy</strong></td>
<td></td>
</tr>
<tr>
<td>• Annual GHG emissions reduced/avoided in tonnes of CO₂e</td>
<td></td>
</tr>
<tr>
<td>• Annual renewable energy generation in MWh/GWh (electricity) and GJ/TJ (other energy)</td>
<td></td>
</tr>
<tr>
<td>• Renewable energy plant capacity in MW</td>
<td></td>
</tr>
<tr>
<td>• Other Indicators, e.g. capacity of renewable energy plant(s) to be served by transmission systems (MW)</td>
<td></td>
</tr>
<tr>
<td>• Annual gross GHG emissions in tonnes of CO₂e</td>
<td></td>
</tr>
<tr>
<td><strong>Energy efficiency</strong></td>
<td></td>
</tr>
<tr>
<td>• Annual energy savings in MWh/GWh (electricity), GJ/TJ (other)</td>
<td></td>
</tr>
<tr>
<td>• Annual GHG emissions reduced/avoided in tonnes of CO₂e</td>
<td></td>
</tr>
<tr>
<td>• Other Indicators: Annual gross GHG emissions from the project in tonnes of CO₂e</td>
<td></td>
</tr>
<tr>
<td><strong>Renewable energy</strong></td>
<td></td>
</tr>
<tr>
<td>• Capacity of energy generation of plant (MW)</td>
<td></td>
</tr>
<tr>
<td>• Annual renewable energy generation in MWh or GWh</td>
<td></td>
</tr>
<tr>
<td>• Annual GHG emissions reduced/avoided, in tonnes of CO₂e</td>
<td></td>
</tr>
<tr>
<td><strong>Energy efficiency</strong></td>
<td></td>
</tr>
<tr>
<td>• Annual energy reduced/avoided in MWh or GWh (electricity) and MWh or GWh (other energy savings)</td>
<td></td>
</tr>
<tr>
<td>• Annual GHG emissions reduced/avoided, in tonnes of CO₂e</td>
<td></td>
</tr>
</tbody>
</table>
### Review of Reporting Practices

**Example: Transport**

| TRANSPORT                                                                                     |                                                                                             |
|                                                                                             |                                                                                             |
| - Passenger-kilometres (i.e. transport of one passenger over one km) and/or passengers; or tonne-kilometres (i.e. transport of one tonne over one km) and/or tonnes |                                                                                             |
| - GHG emissions reduced/avoided in tCO$_2$ e p.a.                                           |                                                                                             |
| - Reduction of air pollutants: particulate matter (PM), sulphur oxides (SO$_x$), nitrogen oxides (NO$_x$), carbon monoxide (CO), and non-methane volatile organic compounds (NMVOCs) | Annual GHG emissions reduced/avoided, from cars and other vehicles, due to the investment (by comparison to average emissions by km for alternative transportation) |
|                                                                                             | Number of km of new train lines, bicycle lanes etc. created                                 |
|                                                                                             | Passenger-kilometres in new means of transportation                                          |
|                                                                                             | Estimated reduction in car use, car-km the project will replace                            |
|                                                                                             | Project’s effect on increased resilience to climate change                                  |