

Green Bonds 101

Financing Solutions to Climate Change

Justine Leigh-Bell, Climate Bonds Initiative

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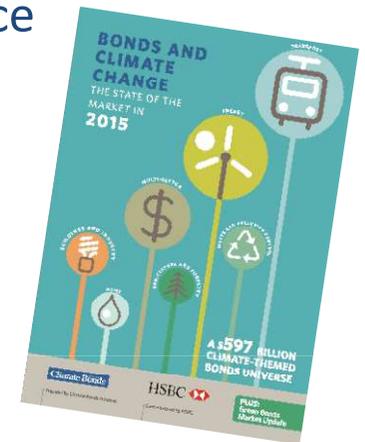
Agenda

1. Introduction to the Climate Bonds Initiative
2. What is a bond?
3. Challenge + Opportunity: how can green bonds help finance climate goals?
4. What makes a bond green?
5. Growth of the Green Bond Market
6. What are the benefits?
7. How do you know its green?
8. How to issue a green bond?
9. Challenges for Green Bonds – deal flow?
10. Scaling green deal flow
11. Q&A



1. The Climate Bonds Initiative

- We are an investor-focused NGO mobilising debt capital markets for climate solutions
- Outreach to inform and stimulate the market
 - Policy models and government advice
 - Efforts in emerging markets to grow issuance
 - Green innovations e.g. securitization, covered bonds, Islamic Finance
- Market data and analysis
 - Green bonds data base, feeding MSCI/Barclays and S&P DJI indices
 - State of the Market report, commissioned by HSBC
 - Regional and thematic focus reports, e.g. China, Canada
- Climate Bonds Standard & Certification Scheme
 - Definitions for investors and guidelines for bond issuers
 - Assurance through certification



2. What is a bond – The basics

- Bond is debt (IOU): repay loan + interest
- Usually large, mature assets
- Issued by companies, governments, municipalities...
- Government-backed may be paired with incentives
- Usually rated (independent credit rating organizations)
- May be traded (depending on capital market rules)
- Local or foreign currency (USD)
- May be secured against an asset
- Important part of portfolio for investors such as pension funds, insurance companies



Bonds are (primarily) about *re-financing*

Development
High risk, project
finance, first 2-5 years



Mature asset
Low risk, long-term holdings for 15-25 years



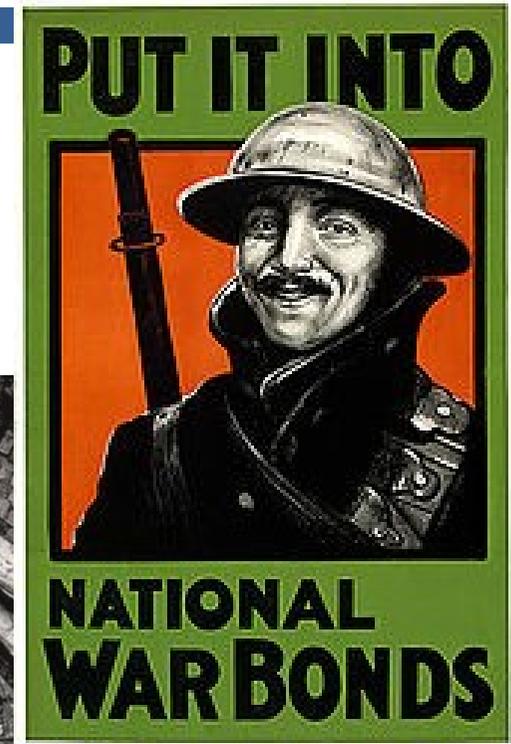
History of bond financing for transitions



Funding the North's army
in the US Civil War



Building the sewers of London



Creating the US and Italian
highways networks



Housing mortgages:
an unemployment solution

3. challenge and opportunity

Mitigation and adaptation

Scale \$50-90 trillion

Speed five years

It's about big emerging markets

Infrastructure & Cities

China, India, LatAm, SE Asia.....

COP21 INDC's = Post-Paris World

Deal flow?

Infra vs green?



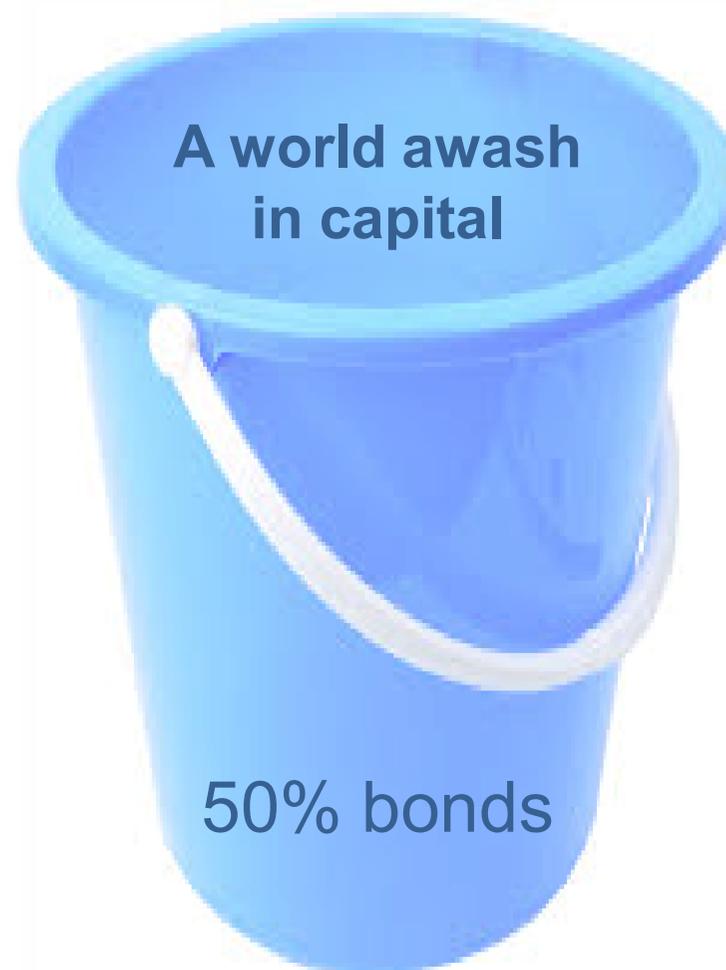
Bringing green solutions to capital



Discovery

Risk-Bridging

Deal flow generation

Three stages of the process: Discovery, Risk-Bridging, and Deal flow generation.

It's about mitigation *and* adaptation/resilience



ENERGY Solar, Wind,
Bioenergy, Geothermal
Hydro, Marine



ENERGY EFFICIENCY
Low-carbon buildings
Greening industry



TRANSPORT
Low emission vehicles
Electric Vehicles
Rail, BRTs



WATER
Grey/Green infrastructure
Storm adaptation
Flood defense



**WASTE & POLLUTION
MNGMT**
Methane reduction
Recycling



LAND USE
Agriculture
Food supply chain
Forestry

“The emergence of green bonds represents one of the most significant developments in the financing of low-carbon, climate-resilient investment opportunities.”

Ban Ki Moon, UN Secretary-General



4. The green bond basics

Proceeds to green

- Vanilla
- Comparable pricing
- Refi as well as project
- 90% investment grade

Reporting

- Transparency to green asset or project
- Independent review
- Reporting on use of proceeds

Any entity

- Governments & DFIs
- Corporates
- Asset owners: PPPs, banks, utilities, etc
- Municipalities



International: investor concern about climate risk

\$90^{tn} institutionals; SRI = \$21^{tn} global

\$43^{tn} at UN Climate Summit

\$20^{tn} insurers x10 climate investments by 2020



\$59 trillion

Targets and mandates

- KfW, Norges Bank, IFC
- Zurich, Blackrock, ACTIAM, Aviva, Allianz
- Deutsche Bank, Barclays
- Central banks



FROM INVESTORS REPRESENTING US\$11.2 TRILLION

The Paris Green Bonds Statement

9 DECEMBER 2015

We, the undersigned signatories to this statement, represent asset owners, investment managers and investment funds managing a total of \$11.2 trillion of assets.

We encourage, in order to scale up investment in green bonds, climate bonds and other bonds financing mitigation and adaptation to climate change that meet our risk and return requirements as institutional investors:

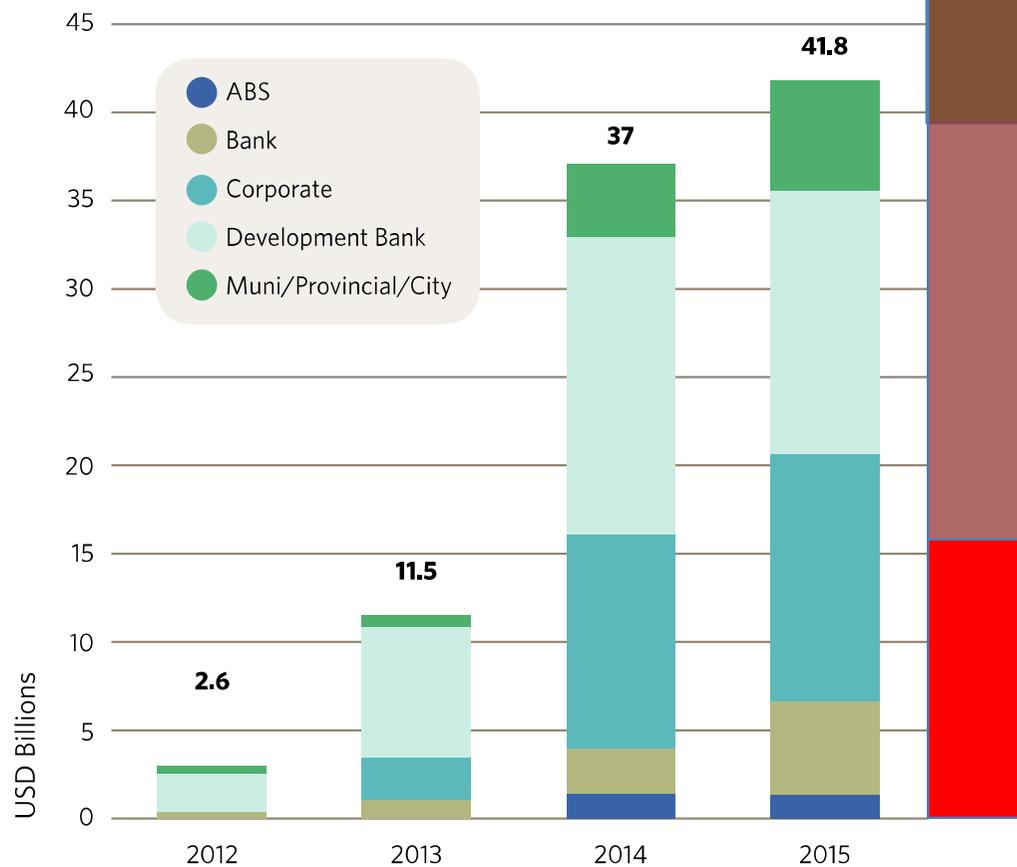
- Governments to act** through policy, regulation, risk mitigation, guarantees, tax credits and other measures to support the issuance and investment in green bonds.

SIGNATORIES

- ACTIAM** — Jacob de Wit, CEO
- Addenda Capital** — Brian Minns, Sustainable Investing Specialist
- Affirmative Investment Management** — Stuart Kinnersley, CEO & Co-Founder
- AllianceBernstein** — Peter S. Kraus, Chairman and CEO
- Allianz Global Investors** — Franck Dixmier, Global CIO Fixed Income
- Amundi Asset Management** — Bernard Carayon, Deputy CEO
- APG Asset Management** — Herman Slooijer, Managing Director Global Credits
- AP-Fonden** — Mikael Angberg, CIO
- Aviva** — Ulrika Danielson, Head of Sustainable Investment



5. Green bonds growth



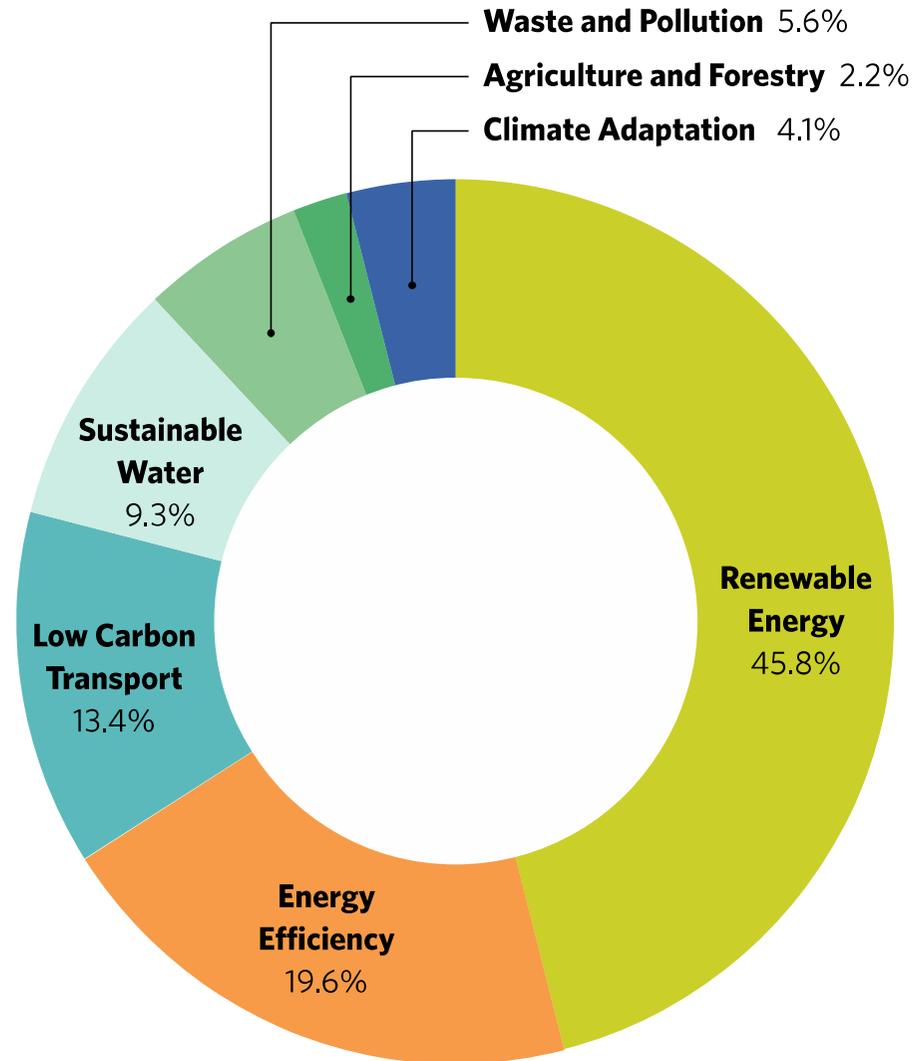
Expectation
USD100bn

*PBOC estimates
USD46bn for China*

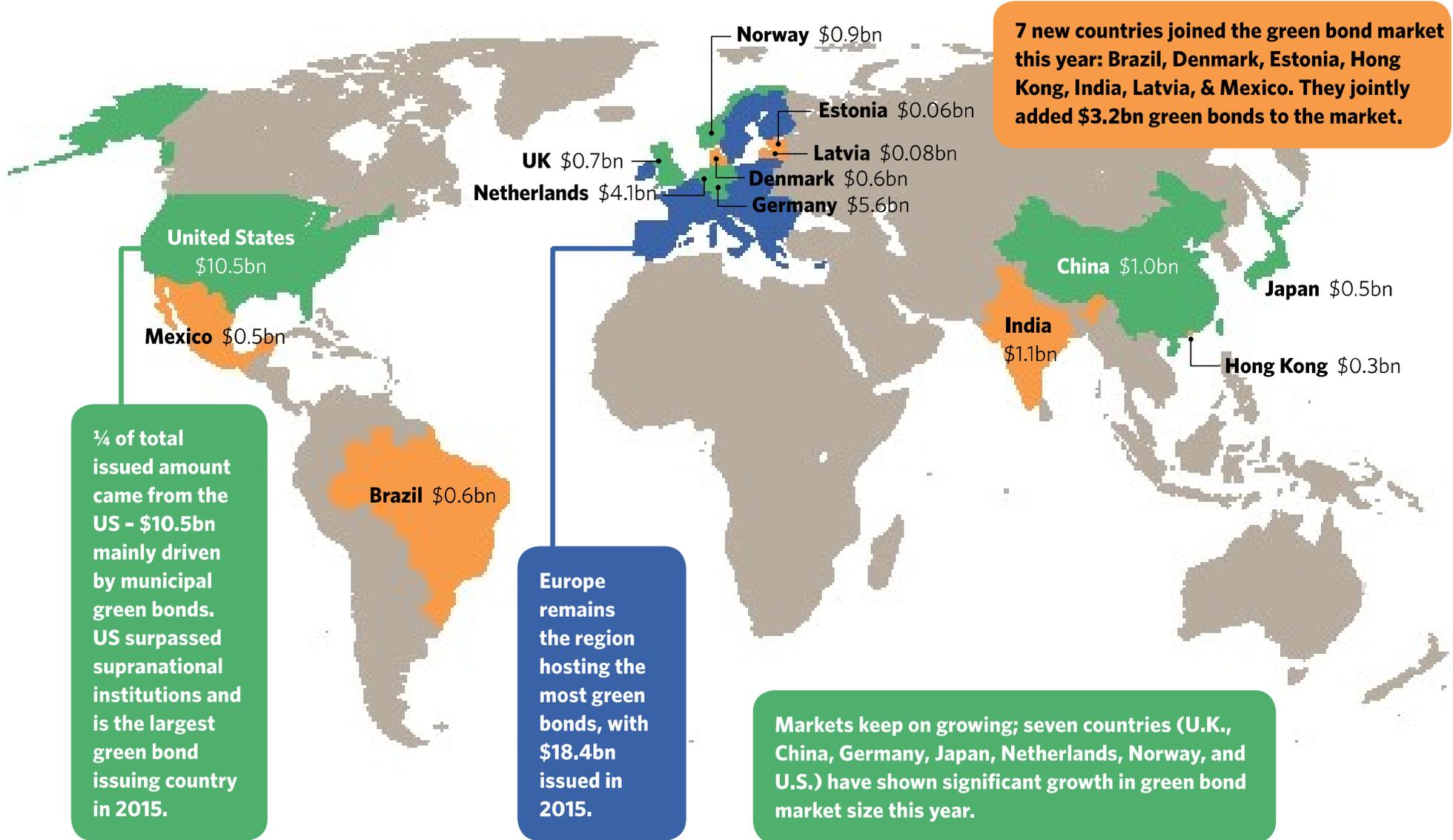
To date
USD18bn

More than renewable energy

2015 green bond proceeds



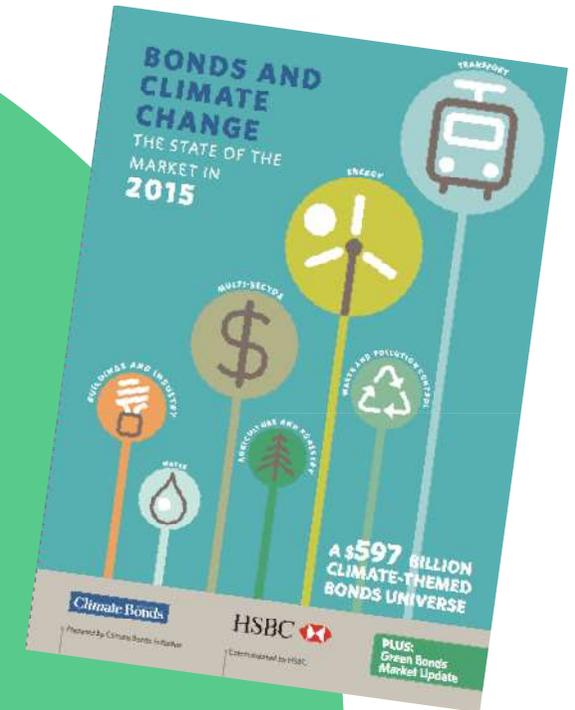
Geographical spread



Labelled vs unlabelled

Climate-themed bonds
\$600 bn

Green Bonds
\$100 bn



6. What are the benefits?

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

Issuer benefits

- Investor diversification across regions and types
- Investor engagement & “stickiness”
- Strong oversubscription, yields tighter
- Strengthened reputation
- Alignment of CSR (or core business when pure play) with funding scheme

...given strong and persistent investor demand for green.

Investor benefits

- Greening FI investments through well-understood products
- Access to green assets / projects without project risk
- Trading at a premium in secondary markets
- Strengthened reputation
- Deeper engagement with company management on green

7. How do you know its green?

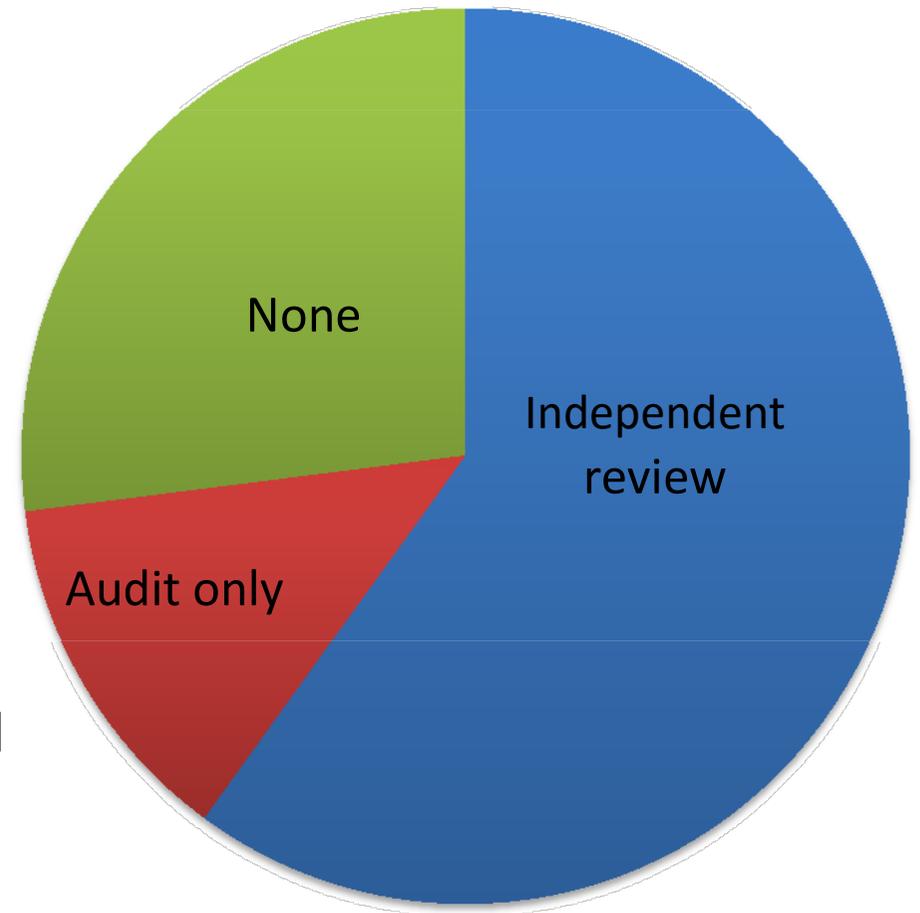
Majority have independent review

Green Bond Principles

Use of proxy standards,
e.g. LEED building standards

Climate Bonds Certification
supports scalability with a Standards-based
Approach

2015 Green Bond Reviews



Examples-Corporate Green Bonds

Issuer	Amount	Review/certification	Assets
Apple Inc	1.5bn (USD)	Sustainalytics	EE upgrades, green buildings, waste management
HERO Wind Energy Pvt Ltd.	1.3bn (USD)	KPMG (CB Certified)	wind
Sveaskog AB	300m (SEK)	DNV-GL	FSC, PEFC certified, sustainable forestry
BRF SA	500m (EUR)	Sustainalytics	RE, EE, sustainable forestry & Ag
Unilever	250m (GBP)	DNV-GL	Waste management, EE
Toyota	1.8bn (USD)	----	ABS EVs, Hybrids
GDF Suez	2.5bn (EUR)	Vigeo	RE
EDF	1.4bn (EUR)	Vigeo	RE



8. How to issue a Green (City) Bond?

PROJECT IDENTIFICATION AND PREPARATION

Public sector decision-makers identify potential capital projects.

- STATES
- UTILITIES
- CITY DEPARTMENTS
- TRANSIT AGENCIES

CAPITAL PROGRAM

Identify and prioritize projects using green criteria.



In this phase, the green projects (i.e., those eligible for green bonds) are isolated for additional analysis.

GREEN BOND-FUNDED PROJECTS

PROCEEDS FROM GREEN BOND ISSUANCE



Approved projects screened using asset class green standards.

9. Challenges for Green Bonds

A variety of challenges are impacting on the growth of the global green bond market

- Volume of bankable projects and robust project pipelines
- Maturity of bond markets in certain countries
- Preparedness for bond financing
- Commonly acceptable green standards
- Risk-averse investors with limited capacity to analyze green investments
- Small investments that would not be attractive to large institutional investors
- Involvement of many stakeholders that lack coordination



10. Scaling green deal flow:

Fundamental public/private sector actions

- **Collaboration:** Stakeholder Ownership: Roundtables and bringing principle in-country actors together.
- **Develop green project pipeline:** Translate INDCs into green project pipelines and communicate it to investors e.g. through Green Infrastructure Investment Coalition.
- **Strategic public green bond demonstration issuance** from development banks, municipalities/cities – NAFIN, MTA green bond issuance, ADB underwriting, is an example other public sector entities can replicate.
- **Support development of green bond standards:** reduces investors' transaction costs, but also a foundation for policymakers to identify green bonds that have sufficiently robust environmental credentials to qualify for further policy support. Possibility to leverage international Climate Bond Standard.

"All infrastructure has to now be green.
And rivers of capital need to flow
to assets and projects that are
the *right* ones for the 2050 world
we have to build."

Christiana Figueres UNFCCC



www.climatebonds.net

