Climate Bonds and Insurance – A Favored Asset Class for Insurers in Creating Long Term Values

Investor-focused not-for-profit, promoting large-scale transition investment

Network for Sustainable Financial Markets

CARBON DISCLOSURE PROJECT

Climate Bonds INITIATIVE

2

Content AR

1. Context
2. Bonds an ideal vehicle for green finance
3. The climate Bond initiative – a few words
4. The climate bonds standards

Climate Bonds INITIATIVE

In the short term, the coming year, we will see:

1. Big enough green and climate bond issuance to have to be included in market indices. This will get institutional investors taking more notice.

2. The launch of a number of Green Fixed Interest Investment Funds

3. The setting of a Green Investment Bank in the Uk

4. The setting up of securitized “aggregation” funds in the energy efficiency and renewable energy spaces

5. Values labeling starting in the UK, to support the government’s commitment to facilitate “Green ISAs”

3

Almost all insurance covers will be affected due to rise in sea levels and average temperatures, increased frequency and intensity of natural catastrophes (heat waves, droughts, hurricanes, floods, and a loss of biodiversity :

- Reinsurance,
- Property insurance,
- Construction insurance,
- Motor insurance,
- Travel insurance,
- Agriculture and forestry insurance,
- Business interruption,
- Directors and officers duty of cares,
- Health insurance,
- Life and morbidity insurance.

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Is risk from climate change limited to insurers liabilities?

The increased risk to insurers due to consequence from climate change are important but can somehow be mitigated through:

1. Selection and exclusion of risk and geographical areas (red lining of areas of risks),
2. Cap on insurance coverage,
3. Incentives in premium pricing for insured to take adaptative measures and therefore limit the risk.
4. Increase in premium rates,
5. Securitisation of risks,
6. Share claims with governments in case of large catastrophes,
7. Others…

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Likely world macro-economic consequences of climate change could be devastating.

The IMF (among many others) flags that CC will mean:

- Direct negative impact on output and productivity particularly for agriculture, fisheries, …
- Increased risk of widespread migration and conflict.
- Deteriorating fiscal positions arising from weakening of traditional tax bases.
- Higher energy prices.
- Balance of payments affected by reduced exports of goods and services or increased need for food and other essential imports.
- Damage to infrastructures (ports and roads may disrupt trade flows).
- Adverse "nonmarket" effects loss of biodiversity and ecological systems, effects on human health and the quality of life.

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A very uncertain future for Assets

Such macro-economic factors would have:

- disastrous impacts on volatility of equity and property markets, and
- may induce some inflationary trend due to scarcity of fundamentals (agriculture products, energy, forestry, other products) which may make investment in bonds also difficult.

This will most likely make our current crisis look trivial.

And make the future of Asset and Liability Matching extremely perilous.

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7

Part of the answer : Climate Bonds

However, insurers should start positioning their assets to face future impacts of climate change and at the same time contribute to mitigation and adaptation efforts. This is probably best done via Climate Bonds

Climate bonds are standard bonds which will invest the money raised in a range of mitigation and adaptation vehicles, including direct equity investments, portfolio of loans, project finance.

It has the potential to gather large volumes of investment.

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8

Current context

Current economic crisis over shade climate change despite scientists conclusions and increasing evidence

Although very seriousness financial crisis happen regularly. Meantime GHG emissions inexorably rising leading us to few million years catastrophic event.

Current solutions: price on carbon /carbon markets, voluntary initiatives, carbon taxes and other environmental taxes clearly not enough, extremely complex and long to put in place.

Bonds definitely part of the solution. Long history to finance transformation of economies e.g in the past for war efforts.

Not so much a technological problem but political will, to take the risk of turning the whole world economy on its head. Changes which will have to be done at some stage anyway.

The main challenge is that all of our capital is locked into a fossil fuel intensive economy – the question is "how do we transfer this into a low carbon economy?"

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9

Drivers

International Energy Authority says:

- We're faced with a choice: a catastrophic future with 6-7 degree temp rises … vs … Opportunity
- To head off catastrophic climate change will require investment flows of roughly $1 trillion p.a. (in energy, adaptation, etc) for the next 40 years
- We need speed and scale
- The prize, if we make the transition, is lower energy costs

The OECD is promoting a Green Growth agenda as the only viable way forward

Such scale can only be found in capital markets,
Bonds are bound to be an important part of the answer

"**We call for a significant increase in global bond issuance to be dedicated to finance for an acceleration of the transition to low carbon growth.** "Climatewise

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Funds are in capital markets

Global bonds outstanding in 2010 = **$95 trillion+**

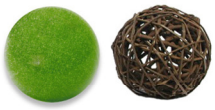
Institutional investors = $75 trillion+

Pension, insurance, sovereign wealth funds

Under-exposed to energy & Infrastructure

19 of world's top 20 pension funds are public sector

"Give me two products with the same risk/reward profile, one brown, one green - I'll pick the green"



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11

Bonds an ideal vehicle

Bonds particularly well suited to renewable energy and energy efficiency projects: typically high initial capital but then have no variable costs and receive an inflation linked income from the energy produced or saved.

Perfectly matched to the profile of bond. Bonds also currently greatly in demand from investors; in developed world ageing societies and hence mature pension funds need inflation-linked fixed income investments to match the payments of their pension liabilities. Issue of asset and liability matching.

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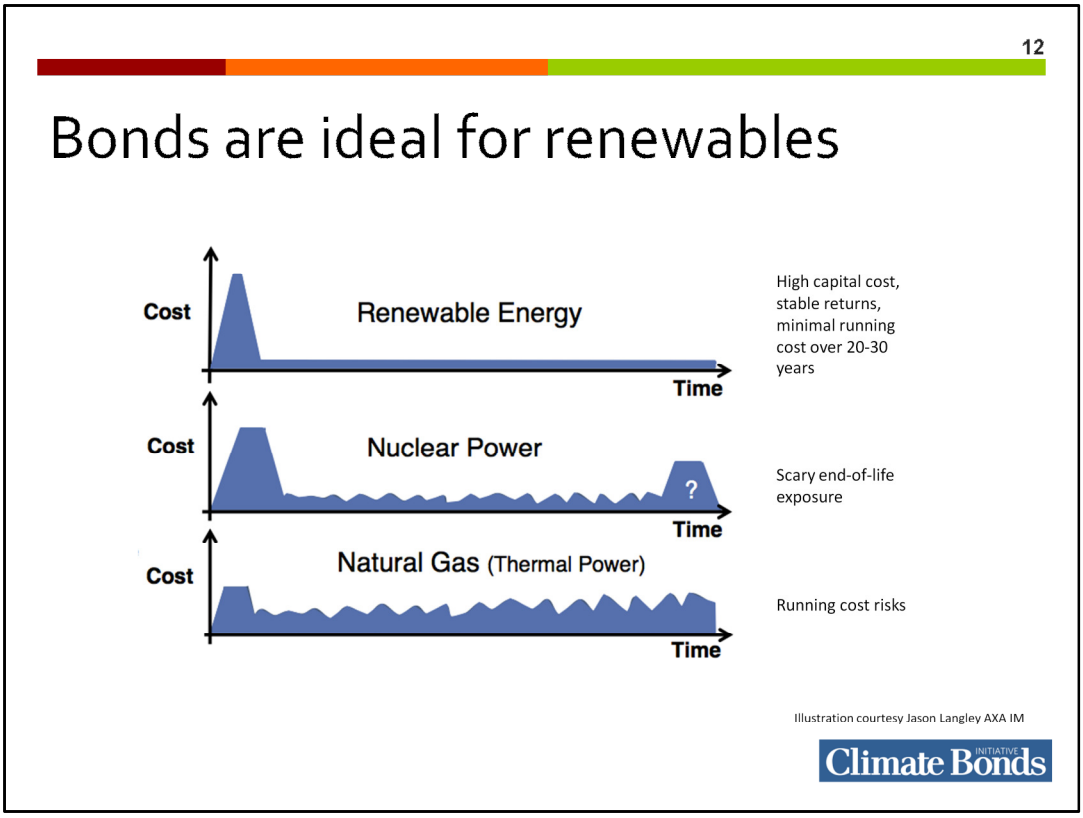


Renewable energy is ideal for bonds

It's all capital costs and zip running cost, with no scary lumps at the end, as with nuclear energy, or volatile input costs, such as with gas

Climate-themed issuance to date

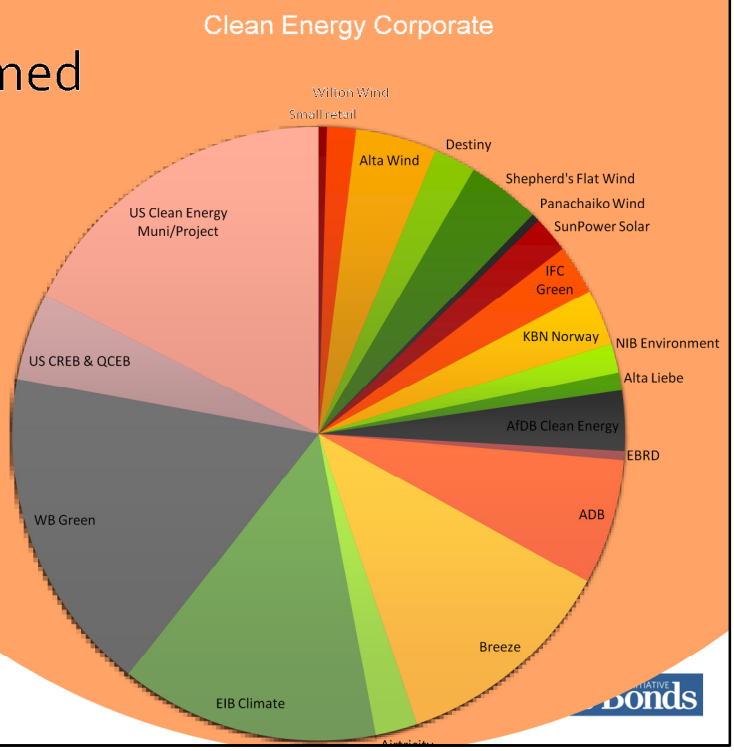
$16 billion

Leaders:
-Thematic portfolios: WB, EIB
-Tax preferencing: USA
- ABS: Breeze

Only 5% retail, mostly Japan

Clean energy corporate $30bn to Bloomberg's $230bn

+ Rail, etc - $10bn +



Buyers

World Bank Green Bond
- AP2/AP3 Swedish National PFs
- California State Treasurer's Office
- Church of Sweden
- CalSTRS
- Calvert Investments
- Netherlands Development Finance
- Everence Financial
- New York Commons
- Rathbone Greenbank
- SEB Ethos fund
- Sarasin
- Skandia Life
- Trillium Asset Management
- UN Joint Staff Pension Fund

Uridashi
- Japanese households

US project bonds
- Pension funds
- Fund managers

SRI & progressive mainstream

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Buyers

Fund	Type	AUM ($m)	ISIN	Comments
Nikko World Bank Green Bond Fund	Green bond fund – open ended	$796	JP90C00074A1	80% World Bank Green Bonds, 20% general World Bank bonds, targeted at Japanese investors
Nikko AM World Bank Green Fund	Green bond fund – open ended	$35	LU0489503291	World bank Green Bonds, targeted at European institutional investors
Calvert Bond Portfolio	Sustainable & SRI bonds- open ended	$812	US1316184076	US government and corporates meeting Calvert's 7 ESG criteria
Triodos Sustainable Bond	Sustainable bond fund – open ended	$201	LU0309381605	Global sustainable corporate & government bonds
F&C Ethical Fund	Ethical bond fund – open ended	$291	GB00B23YHT07	Ethically screened, including green, UK based companies
ZKB Sustainability Fund	Sustainable fixed income fund – open ended	$280	CH0039299455	Primarily Swiss company bonds and money markets that meet sustainability criteria
Etica SGR –Ethical Bonds Fund	Ethical bond fund – open ended	$230	IT0003409171	Ethically screened Euro denominated corporate and government bonds, max 20% equities
Kames Ethical Corporate Bonds	Ethical bond fund – open ended	$337	GB00B0C4RP31	Sterling corporate bonds that meet ethical criteria
CalPERS	Pension fund – US/California	$235,800	*N/A*	Member of INCR, CDP, history of VC/PE funding in clean energy, 23% bond allocation, committed to integrating ESG factors across investments
CalSTRS	Pension fund - US/California	$146,639	*N/A*	Purchased part of '09 World Bank issue, committed to integrating ESG factors across investments
AP2, AP3	Pension fund - Sweden	$70,981 ($35,411+ $35,570)	*N/A*	Purchased multiple World Bank issues in '08/'09, member joint ethical council with all Swedish pension funds
State of California	State treasury fund	N/A	*N/A*	Purchased portion of '09 World Bank issue
Metropolitan Life Insurance	Insurance investment fund	$482,170	*N/A*	Over $1bn in renewable energy investments including Alta wind and Salton Sea geothermal project bonds, 76% of investments in fixed income

Source: Bloomberg New Energy Finance, Bloomberg Terminal, fund factsheets

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Bond structures

Program bond	Funds allocated to ring-fenced lending program	International Finance Institution, such as EIB or WB
Corporate bond 'linked' to qualifying assets	Ring-fence value of assets to internal cost centre	Commercial Bank: asset-linked to a portfolio of wind project loans Clean energy company / manufacturer bonds linked to facility or solar/wind farms:
Project development	Special purpose vehicle owns the asset	Financing construction and operation of wind farms: from Shepherd's Flat Wind to Andromeda Solar
Portfolio bond	Securitisation vehicle of loans and/or assets	Aggregator - re-financing for pool of wind farms or wind loans: Breeze

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Benefits for issuers

New investors

Reputation enhancement

Exposing the market to underlying assets, in preparation for ABS post-Basel III

- Need for improved capital ratios will further squeeze business lending
- Re-financing allows focus on project development lending

Climate Bond Certified

Climate Bonds Initiative

Deal flow issues

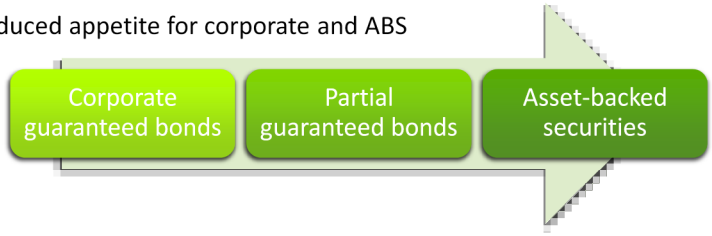
1. Constrained balance sheets

Utilities pressure to fund system rebuild

Basel III = contraction of business lending on top of recapitalization pressure vs strong corporate balance sheets?

Solvency II = reduced appetite for corporate and ABS

Offload assets & loan portfolios & focus on project dev



Pension Danmark + Dong offshore wind farm

Asset-linked bank bonds

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Issues

2. Investment grade

- "Novel" assets
  - Challenging S&P views on solar vs oil reserves
  - Corporate to ABS
- Public finance support : Govts, IFIs, GIBs
  - KfW guarantees for offshore wind; China for renewables lending
  - Euro 2020 Project Bonds 20% guarantees
  - Import/export guarantees: Italy, Denmark
  - UK £2.2 bn ICF: emerging nation renewables
  - US tax credits for deployment (vs manufacturing)
- Purchase agreements - volume auctions (e.g. Brazil)

Partnership between institutional investors and governments

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Issues

3. Aggregation

- Large companies
- Special focus bond funds: SSgA
- Re-financing ABS : Breeze, Andromeda (SunPower)
- Bank loan pools: asset-linked portfolios ($300m issue)

4. Liquidity

- Perceived size of markets
- Standardization of products
  - *Ease of screening*
  - *Common definitions for Govt preferencing*

Climate Bonds INITIATIVE

The Climate Bond Initiative - a few words

The Climate Bonds Initiative is a global civil society network created to serve as a catalyst for the rapid emergence of Climate Bonds. It is not for profit, based in London and present in 14 countries.

"Mobilizing fixed-income investment for climate change solutions"

Bringing the three key actors to the table – industry, investors and governments, to develop the basis of a tripartite agreement under the Climate Bonds concept. Demonstrating how to engineer investibility through scaled-up mitigation and adaptation pilot schemes in both developed and developing countries.

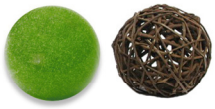
Raising awareness and building support for innovative approaches to tapping debt capital markets for the low carbon economy: concept development, participation in forums and media campaigns.

Climate Bonds INITIATIVE

Climate bonds standards - The premise

1. Institutional investors are aware of the real macro risks around the impact of climate change, but these are hard to quantify for portfolio management.

2. But, if offered two investments with the same risk/reward profiles, one "brown", one "green", they will think of those macro risks and choose green.



3. Assessing enviro integrity is hard work. An authoritative standard will ease decision-making and support *liquidity*. The easier it is to use the faster the market will grow

Our advice was that "authoritative" means:

- Backed by asset owners and NGOs
- Endorsed by a groups like UN PRI, UNEP FI

Climate Bond Certified

Climate Bonds Initiative

Standards & certification

1. Assure investors that investments are for climate change solutions (Avoid greenwashing)

1. Portfolio screening = energy, transport, water, etc

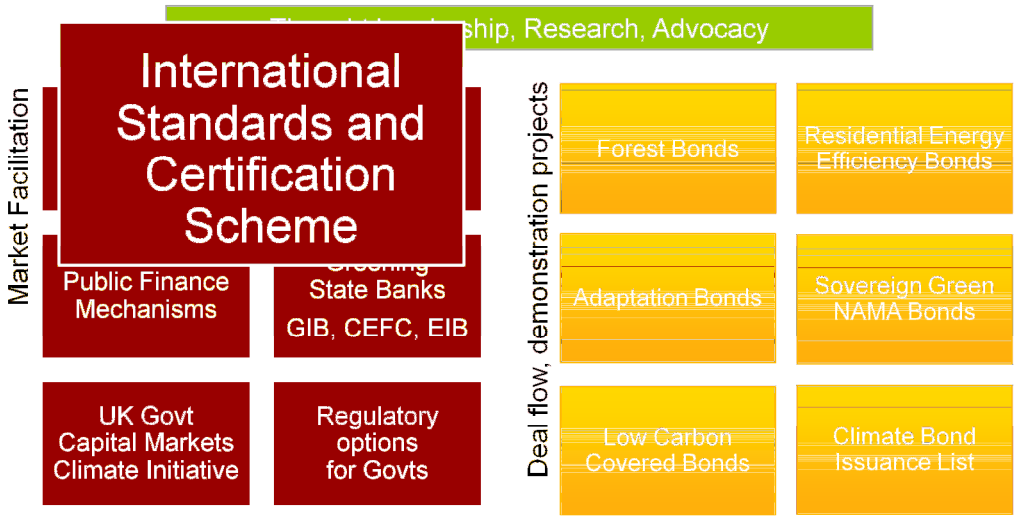
2. Government pre-ferencing criteria

An *environmental*, not a financial standard.
Investors still have to do financial due-diligence.

Climate Bond Certified

Climate Bonds INITIATIVE

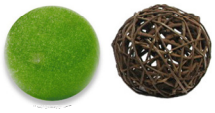
Greening the bond market



Climate Bonds INITIATIVE

Objectives

1. Assure investors that investments are for climate change solutions
   - Institutional investors aware macro risks, but hard to quantify
   - If offered two investments with same risk/reward profiles, one "brown", one "green", they will choose green

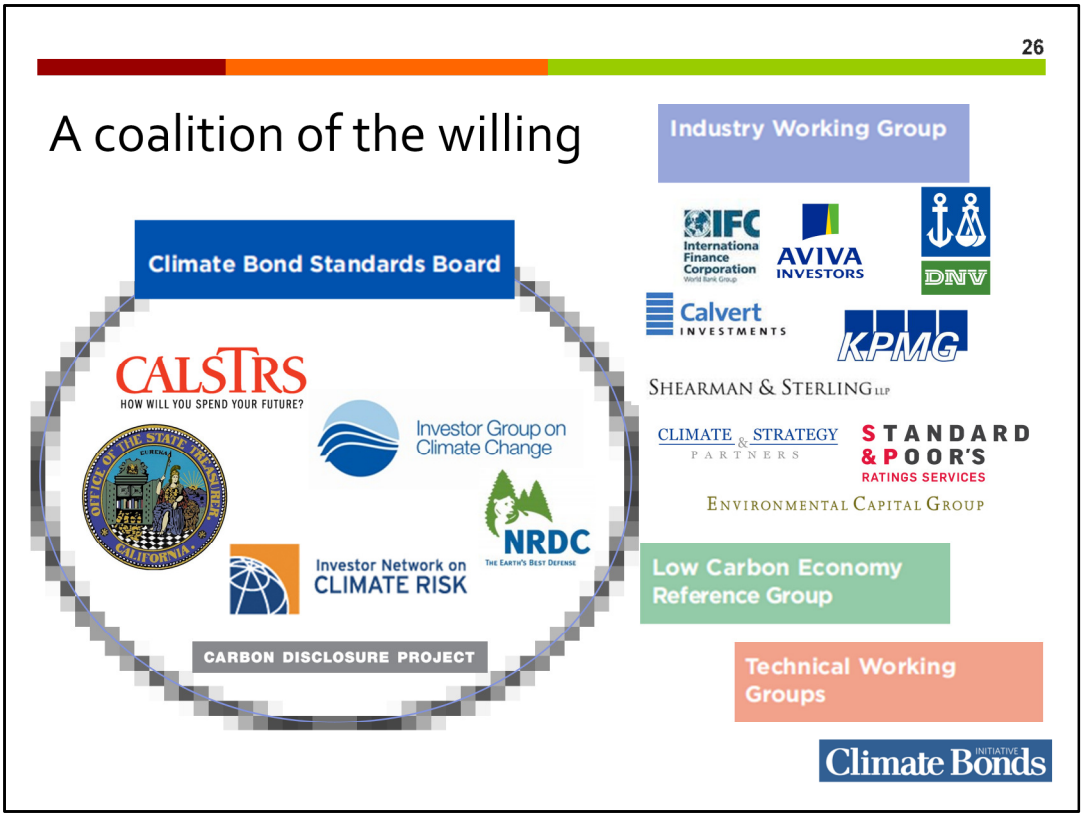


2. Standardize across a large pool = increase liquidity
   - Energy, transport, water, etc

3. A simple preferencing tool
   - The easier it is to use the faster the market will grow
   - Authoritative: a coalition of asset owners & NGOs

An environmental, not a financial standard. Investors still have to do their own credit analysis

Climate Bonds INITIATIVE



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Low-carbon economy transition

First off the rank	Complex eligibility issues	Programmatic
Wind	Bio-energy	City
Solar	Water for adaptation	IFI standard
Grid	Agriculture	Forest bonds
Energy efficiency	Forests	Sovereign NAMA
Broadband & IT		
Grid		*Science-based low-carbon economy framework*
Shipping		

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Low-carbon economy transition

Wind	Bioenergy	Forest Plantation	IFI	EE residential
Solar	Water resilience	Forest REDD+	NAMA	EE commercial
Grid	Agriculture	Forest regional	Sovereign	EE social housing
Methane management	Broadband ICT	Flood defense	City	EE manufacturing
Geothermal	Transport vehicles	Transport shipping	Multi-asset portfolios	EE power generation
Hydro	Transport mass land	Transport aviation	Battery	CCS

Science-based low-carbon economy framework

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How Certification works

Bond Issuer starts by...

1. Issuer links low carbon assets to proposed bond

2. Issuer contracts approved 3rd-party verifier of the Climate Bond Standard to verify the proposed bond

...Verifier then...

3. Verifier checks compliance with Climate Bond Standard.

3rd Party Verifier

4. Provides verification statement to issuer

Bond Issuer decides to proceed...

5. Issuer submits application for Climate Bond certification to Climate Bonds Standard Board and Secretariat including verification statement and application fee.

Bond Issuer

...Climate Bond Standards Board reviews

6. Climate Bonds Standards Board and Secretariat review application

Climate Bonds Standards Body

7. Bond issued with Certification mark or rejected

Climate Bond Certified

Climate Bonds INITIATIVE

Key provisions

Money flows

- Linked assets matching bond amount
- Assurance around use of proceeds
- Traceability

Bond types

- Corporate bonds (cost centres)
- Project bonds, Portfolio bonds

Eligible physical assets

- Wind farms, manufacturing, related infrastructure

Certification is conditional on continued compliance and can be lost

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Next

Growing the universe

- Certification of new bonds
- Backcasting

The system

- Prototype consultation process
- Assurance procedures and accreditation

Low-carbon eligibility criteria

- Energy efficiency in buildings
- Bioenergy
- Broadband
- Forests

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http://standards.climatebonds.net

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