

Climate Bonds Standard **for Green Buildings**

I. Purpose

The International Energy Agency (IEA)'s modelling of emission reductions required to head off catastrophic climate change allocates some 40% to emissions avoided from reduced energy consumption. There is a need for investment; however financial barriers, including the cost of capital, risk exposure and the inadequacy of traditional financing mechanisms for energy-efficient projects hinder the flow of qualifying investment.

The aim of the Climate Bond Standard is to mobilize capital to climate friendly investment and to assure investors that investments into Certified Climate Bonds will form part of a credible Low-Carbon and Climate Resilient Economy.

What do we mean by "Green Buildings?"

Any investments directed towards energy efficiency improvements in buildings is important and should be supported, but the urgency for roll-out is driven by the need to reduce greenhouse gas emissions generated through the built environment. This will require *substantial* improvements of the whole building rather than just achieving any *impact* with modest improvements. For example, if all buildings achieve a 20% efficiency upgrade but a 40% increase is required to avoid 2 degrees, then 20% is clearly not enough. The risk is to "lock in" weak levels of performance until the next investment period which may not occur for another decade or more.

It will also require large volumes of qualifying assets. To date, energy efficiency projects have been too small to be commercially attractive to institutional investors. The average retrofit for the average commercial building is in the range of \$1-10m. Therefore, aggregating energy efficiency projects into large scale opportunities will be needed and has the benefit of not only rewarding new builds but also existing assets that exemplify best in practice.

II. Aims and Objectives

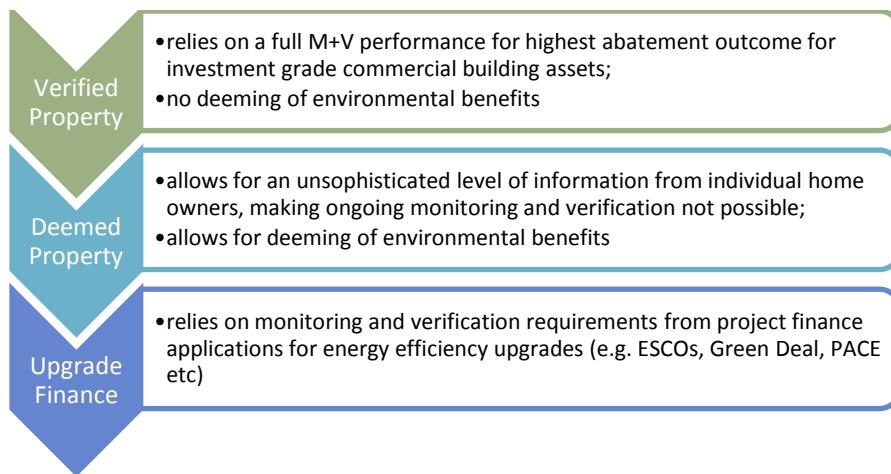
This project aims to develop a Standard that ensures the low carbon credibility of certified Climate Bonds issued for "Green Buildings."

Primary objectives:

- Low carbon is the fundamental component underlying the Standard
- The aim is achieving deep cuts in emissions from buildings and avoiding shallow cut diversions e.g. EE retrofits in buildings with low abatement outcomes.
- Need to design a Standard that is practical across different jurisdictions while ensuring the above objectives are achieved
- Provide verification of low carbon performance over life of the financing

The Standard aims to provide clarity to investors as to the low carbon integrity of energy efficiency investments through a standardised screening tool. It will support energy efficiency project developers in signalling to the market the minimal reputational risks associated with their projects at low transaction costs. And finally, it will allow governments to incentivise energy efficiency investments with the confidence that the funds are being used to deliver a Low-Carbon Economy.

There are three distinct methodologies proposed under the Climate Bonds Standard and Certification for EE in buildings.



The commonality among all three methodologies is an attempt to reduce the cost of project based assessments and move towards a common baseline rather than a project by project specific baseline from business as usual (BAU).

III. Brief overview of proposed methodologies

A. Verified Property Methodology

Goal

To provide a framework for Climate Bonds linked to investment grade property assets that offers the greatest opportunity for environmental additionality; and maintains integrity through a transparent monitoring and verification system that allows seamless aggregation of projects to achieve scale.

Overview

This methodology has been designed for a sophisticated audience where the benefit lies in the market shifting towards mandatory disclosure of performance. It is a more robust approach to the other two methods proposed, relying on a full M+V where finance is tied to the ongoing performance of the building. Where possible, the methodology will aim to align the ongoing measurement and verification requirements to the information already being collected by building owners to meet their voluntary reporting obligations e.g. BREEAM, LEED (see Appendices).

The approach is to **benchmark baseline market performance by carbon intensity (KgCO₂/m²) specific to a local market**. This will allow correct calibration so we don't disadvantage markets that are already low carbon in terms of their fuel supply. Cities with mandatory energy reporting will be prioritised. Credible common baselines will be set by leveraging the information provided by suitable disclosure schemes across the world's major investment markets - C40 Cities Climate Leadership Group, UK Carbon Reduction Commitment for Energy Efficiency, Californian cap-and-trade scheme, Tokyo's cap - and - trade scheme etc.

The ambition set under the methodology is an ongoing improvement trajectory calibrated from local market performance, (e.g. top 15%) towards zero carbon by 2050¹. Determining the most appropriate trajectory that

¹ From trajectory, this will require a consistent 2.9% of 2015 consumption reduction each year of bond term.

meets both the ambition of the Standard and ensures market uptake will be essential as will the year on year targets that will constitute the performance Cap applicable for any Bond issued under the scheme

The following scenarios are currently being explored for the Cap (see Appendices):

1. **Falling cap** - This would follow the scheme trajectory. It will require continuous improvement; sets the highest stringency; all buildings held to the same Standard independent of issuance of life on bond.

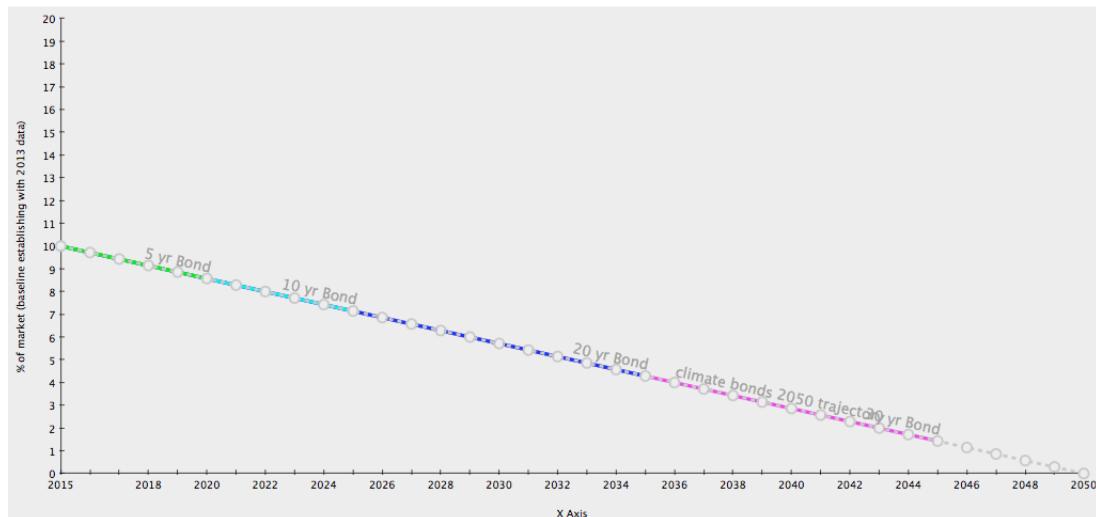


Figure 1 - Falling Cap

2. **Straight-line cap trajectory** - could deliver better carbon savings than the slope trajectory depending on where the start is calibrated. The difference between the scenarios below is how the target is derived to be used each year to ensure compliance.

- a. set at issue- calibrated at the start of the bond; building stock may be poor at end of bond term
- b. set at the end - calibrated at the end of the bond term from the trajectory; becomes more stringent the longer the term of the bond
- c. set at midpoint- calibrated half way through bond term from the trajectory; better than trajectory performance first half; less stringent for second half; encourages early action

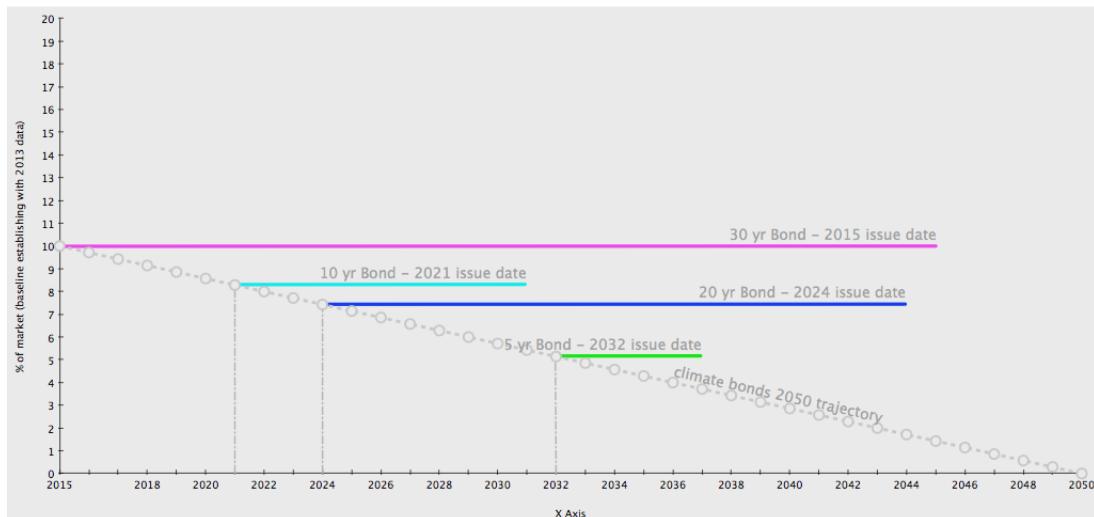


Figure 2 - Consistent Cap, set at issue

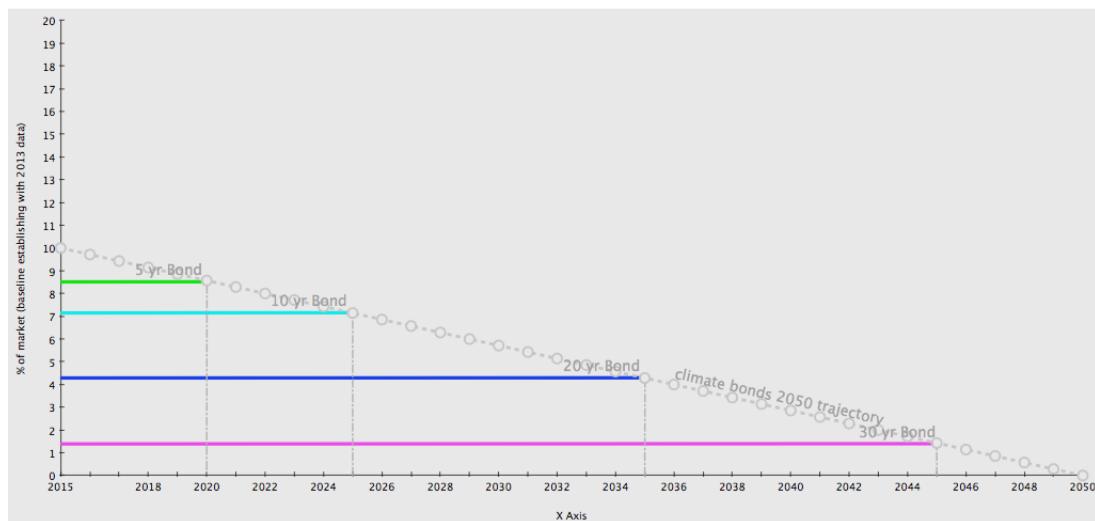


Figure 3 - Consistent Cap - set at end of term

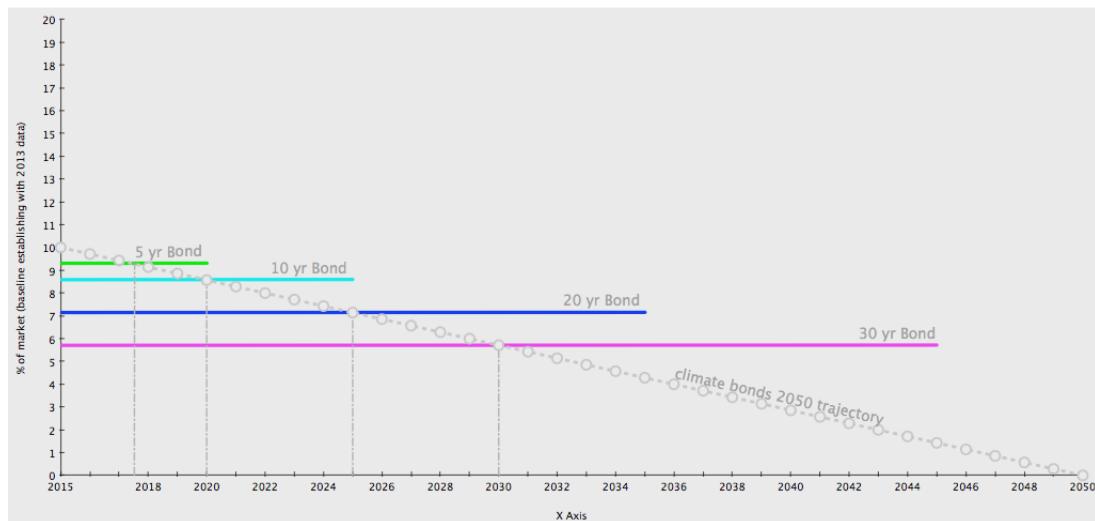


Figure 4 - Consistent Cap - set at mid-term

In all scenarios, the starting market percentage and resulting trajectory is not calibrated year on year. This is a once off exercise for each market to set the common baseline and trajectory for the scheme in that City. M+V continues year on year and will be assessed against the Cap to ensure compliance. Penalties are attached for those that fall out of compliance to ensure low carbon outcomes over the life of the bond.

If we consider the **mid-point straight-line cap**, there may be a benefit to slightly adjusting the trajectory starting point to provide room for some flexibility. This will increase inclusion for bonds <20years but still require a 30 year bond to hit a more stringent target at the start than originally envisaged.

Key features of methodology

- The boundaries for assessment will be set based on energy end uses that lie within the building owners control
- The scheme will use a carbon intensity metric with an area denominator (KgCO_2/m^2), rather than an occupancy denominator; area is more easily and robustly measured and audited
- Area method of measurement used in the assessment will be based on the income generating area or useable area measured to the relevant local market standards rather than a universal measure
- Common baselines will be derived from collection and analysis of actual operating building data for each asset type and geographical location.
- an area weighted aggregation methodology will be used to enable aggregation of energy efficiency projects into larger scale opportunities

Comments

- Need to determine and test the appropriate baseline location
- To be the most effective, it relies on a solid data set to establish baselines. May be limited only to markets that have a mandatory reporting mechanism in place.

2. Deemed Property Methodology

Goal

To leverage sufficiently stringent building codes and rating systems that offer the greatest opportunity for carbon savings in unsophisticated markets - e.g. Residential Mortgage Backed Securities (RMBS); building stocks in emerging markets- while maintaining the integrity of the Climate Bonds certification.

Overview

This methodology is designed for an unsophisticated audience where it is unrealistic to expect reliable annual reporting for the purposes of verification and aggregation. Instead, this methodology will rely on deeming of abatement against a prevailing building code/rating system in a local market that can demonstrate a building falls into the top 15% of the market in terms of its carbon performance.

There is no differentiation made between existing and new assets with the assumption that this will be addressed by the approved building code/rating scheme. However, there is a risk that new building stocks could dominate top percent of market share, making it difficult for existing builds to qualify. This could be avoided by slightly raising the percentage threshold (e.g. 15%-20%). Alternatively, it may be that the existing building stock that does not qualify could be eligible under the third mechanism designed for upgrade financing.

Therefore, what we are proposing is not a pure approach, but a starting point that enables us to differentiate between low intensity versus high intensity building portfolios in respect their carbon/energy performance. If we take a market by market approach to selecting the appropriate building codes or rating schemes, the more robust they are the lower the transactions cost will be for the applicant because we can rely on the certification regime to demonstrate compliance.

We therefore see building codes/rating schemes as an interim method for qualification until a more robust repository of energy consumption data at the household level is available and billing information can be assigned from the relevant utilities for the benefit of monitoring. This interim step could help drive improvements in performance measurements and data disclosure, meeting the demand for better monitoring and data collection. A commitment to revisit the verification process after a 36 month period is proposed.

Key features of the methodology

- Leverages existing codes and assessment methodologies to provide qualification
- Certification granted to the top performers of the local market that can demonstrate compliance with approved building codes/rating tools
- Does not differentiate between new and existing assets or disadvantage properties by size or number of bedrooms etc.
- Aggregation is by simple pooling of qualified buildings
- Carbon abatement attached to the Climate Bond is deemed without verification requirements beyond those required by the approved building code/rating system

Comments

- Determine method for assessing building codes and rating tools to ensure they meet targets
- Not able to compare building codes/rating schemes across jurisdictions and M+V usually weak.

3. Methodology for Upgrade Finance

Goal

To provide a complimentary framework for Climate Bonds that recognises environmental additionality resulting from building upgrades and maintains the integrity of the Climate Bonds certification by leveraging monitoring and verification requirements from performance contracts and upgrade agreements.

Overview

This methodology has been designed for buildings that may not be eligible for Climate Bonds certification under the verified or deemed methodologies proposed. It is a more straightforward approach where to qualify for financing the upgrade activity (retrofits) must generate a carbon saving of at least 50% or more, post upgrade/BAU demonstrated through a contractual agreement with the project participant. If a building owner is applying for UK Green Deal financing for example, and can demonstrate a 50% saving, then they would be eligible for certification. Performance contracts or upgrade agreements that do not explicitly specify a percentage carbon reduction for the project or where it cannot be quantified or demonstrated will not qualify for climate bonds certification.

The difference between this mechanism to the other mechanisms described above is that the first two seek to look at the overall asset (whole building) performance where this mechanism looks at finance attached to a specific upgrade investment (initiative) e.g. swap out street lamps for LED lighting.

The hurdle rate is intentionally set high to not only lower the risk of locking in the saving potential of these investments, but to also encourage other schemes to improve their practices over time. Consideration should be given to adjusting the hurdle rate dependant upon the extent of 'locking in' of the finance. This could for instance ensure that recognition of long-term financed upgrades requires a 50% reduction against BAU, whereas works financed for say a 10 year term might be eligible with 30% reduction against BAU. This relationship of hurdle to term would mirror the ambition on the trajectory whilst broadening the eligibility.

Key Features of the methodology

- carbon reduction measured from a project specific BAU baseline or as deemed under relative legislation
- Aggregation will be by simple pooling of qualified assets
- Carbon abatement attached to the Climate Bond will be deemed without verification requirements beyond those required by the performance contract or the financial upgrade agreement

Comments

- Consider linking reduction targets to term of finance facility.

Appendices

IV. Guiding Principles

1. To provide a simple method for aggregation of qualifying assets. This will produce bonds of sufficient size attractive to institutional investors and at the scale needed to drive significant improvements in the built environment.
 2. To provide the lowest cost of application that will enable the most coverage. Compliance costs must not undermine the attractiveness of the Climate Bond Certification and should be applicable in developing countries.
 3. To provide where applicable an ongoing monitoring and verification (M+V) to ensure the integrity of certified climate bonds. Investors need to be assured that the green credentials are maintained through the life of the bond.
 4. To provide climate relevant metrics where the maximum abatement is achieved. Metrics used should be compatible with existing international frameworks for finance and relevant to global GHG abatement policies.
 5. To provide the highest level of transparency through the approach and methodology. This is to ensure investor confidence in use of proceeds and the impact of their investment.
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Below are examples of the most likely Climate bond opportunities to enter the market in the energy efficiency building space. These examples serve as a reference point to help guide the design of the Standard.

- A. Green mortgage-backed securities (green securitisation) in countries where building codes for new builds meet the objectives of the Standard.
- B. Building portfolio owners (e.g. AXA Real Estate) with a mixed portfolio of EE rated commercial buildings seeking to improve the portfolio performance or securitise existing low carbon assets.
- C. Aggregation of finance from existing schemes such as ESCO contracts, PACE financing, Environmental Upgrade Agreements and similar.