

Commercial Property Climate Bonds

Certification methodology

Low Carbon Buildings Technical Working Group

Version 1.0

ABSTRACT

This paper sets out guidance by the Low Carbon Buildings Technical Working Group on the certification methodology for Commercial Property Climate Bonds.

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Definitions

Climate Bonds Initiative: An investor-focused not-for-profit organisation, promoting large-scale investments that will deliver a global low carbon and climate resilient economy. The Initiative seeks to develop mechanisms to better align the interests of investors, industry and government so as to catalyse investments at a speed and scale sufficient to avoid dangerous climate change.

Climate Bond: A bond that is certified by the Climate Bonds Standard Board as meeting the requirements of this Climate Bonds Standard.

Climate Bonds Standard: eligibility criteria for Climate Bond Certification, based on the current version as published on the [Climate Bonds Initiative website](#).

Climate Bonds Standard Board: a board of independent members that considers applications for Certification of a bond under the Climate Bonds Standard.

Note: The Climate Bonds Standard Board is constituted, appointed and supported in line with the governance arrangements and processes as published on the Climate Bonds Initiative website.

Climate Bond Certification: allows the issuer to use the Climate Bond Certification Mark in relation to that bond. Climate Bond Certification is provided once the independent Climate Bonds Standard Board is satisfied the bond conforms with the Climate Bonds Standard.

Commercial Property: A building that is intended to generate a profit, either from capital gain or rental income. There are sub-categories of Commercial Property such as offices, shopping centres, hotels, etc.

Residential Property: A building that is used or suitable for use as a dwelling.

Technical Working Group: A group of key experts from academia, international agencies, industry and NGOs that develop Sector-Specific Criteria, which are detailed technical criteria for the eligibility of projects and assets as well as guidance on the tracking of eligibility status during the term of the bond.

1. Executive Summary

Objective

Define a methodology that enables Climate Bonds Certification of commercial property assets.

Goals

Provide a complimentary framework for Climate Bonds that:

1. Offers the greatest opportunity for directing finance to low-carbon and energy-efficient commercial buildings
2. Maintains integrity of the Climate Bonds Initiative brand through a transparent approach to monitoring and verification

Guiding Principles

The following principles underpin the guidance presented in this paper:

1. **Simple aggregation of individual assets:** to create bonds of sufficient size that attract institutional investors.
2. **Low cost of application:** to ensure that compliance costs do not undermine the attractiveness of certification and allow application to assets in developing countries.
3. **Use of climate-relevant metrics:** to achieve compatibility with international frameworks for financing¹, relevance to corporate reporting frameworks², and relevance to emerging city greenhouse gas abatement policies³
4. **Transparency of approach and methodology:** to support market transparency and improve management of energy/carbon performance risk at the property level

Structure of this paper

The guidance provided by the Low Carbon Buildings Technical Working Group is organised into the following sections:

1. Establishing baselines unique to local market and building type
2. Minimum performance target
3. Methodology implementation
4. Approach for cities where no data is available to establish baselines

¹ Such as the Kyoto protocol clean development mechanisms and its successor.

² Examples include reporting frameworks developed by the [Carbon Disclosure Project](#), [Global Reporting Initiative](#), and [Sustainability Accounting Standards Board](#).

³ Examples include cities such as New York, Tokyo, London, and other [C40 cities](#).

2. Summary of Guidance

The Low Carbon Buildings Technical Working Group has provided the following guidance on the certification methodology for **Commercial Property Climate Bonds**:

1. Statistical analysis of local market carbon performance will be performed to establish baselines (set at the top 15% of the local market). Unique baselines will be established for different building types in different geographic locations. Baselines will be checked every 3 years and only recalibrated under exceptional circumstances.
2. The carbon performance measurement of a building must only include items that are within the building owner's control. For instance, energy utilised for central services provided to serve tenant process loads should not be included in the measurement. Greenhouse gas emissions factors applied to determine the carbon performance of a building are locked in at the commencement of the bond to isolate the positive effect of decarbonisation of the grid on a building's performance.
3. The carbon performance of a building should have an area denominator (kgCO_2/m^2) rather than an occupancy denominator. This is because area can be more easily and robustly measured and audited.
4. Buildings must achieve a minimum performance target to be eligible for Climate Bonds Certification. This minimum performance target is determined by deriving straight-line targets from the baseline through application of a linear trajectory towards zero carbon in 2050.
5. Minimum performance targets will be adjusted using a year-on-year climate correction methodology so that buildings are not penalised due to a particularly hot or cold year.
6. Where there is alignment with the Climate Bonds Standard, work carried out to comply with existing rating tools, benchmarking tools or reporting schemes will be leveraged to reduce the work and costs incurred by the issuer to demonstrate compliance with the standard.
7. Ongoing monitoring and verification should be self reported according to a well-established methodology and supported by an independent auditor's sign off.
8. Climate Bonds Initiative will initiate spot audits of monitoring and verification reports. The frequency and proportion of reports audited will be dependent on transaction volume.
9. Properties can be aggregated through pooling of assets into a larger combined asset. An area-weighted aggregation methodology, known as the Full Aggregation method, will be applied to a portfolio of multiple property assets to establish the aggregated baseline and actual carbon performance of the portfolio. This differs from the Simple Aggregation method that is applied to Residential Property whereby each asset included in the pool must be compliant in its own right.
10. An interim solution has been proposed to enable certification in cities where no data is available to establish baselines. The methodology leverages the performance ratings of existing building standards such as LEED and has two other requirements pertaining to minimum emissions performance improvement and maximum bond term.

The next section provides further details and explains the rationale behind the above guidance.

3. Details of Guidance

3.1. Establishing baselines unique to local market and building type

| A. Analysis of actual operational building data | |
|---|--|
| Guidance | Explanation |
| <p>Baselines will be derived from the analysis of actual operational building data.</p> <p>Statistical analysis will be performed to establish the carbon performance distribution of each building type (e.g. office, retail store, etc.) in each geographic location, with the baseline set at the top 15% of the local market.</p> <p>Unique baselines will be established for different building types in different geographic locations based on the same methodology. This approach means that baselines are established as and when reliable data becomes available.</p> | <p>Baselines help to establish minimum performance requirements a property asset must achieve to deliver a satisfactory level of environment additionality and be eligible for Climate Bonds Certification.</p> <p>Unique baselines are established to account for (1) variations in the energy/carbon intensities of different building types in different geographical locations and (2) the ability to access property data of different geographic locations. With regards to accessing property data, cities with mandatory energy/carbon disclosure schemes are more likely to have data that is accessible.</p> |
| B. Boundaries for assessing carbon performance | |
| Guidance | Explanation |
| <p>The measured carbon performance of a building should align with the boundaries of ownership and control that exist in the property sector. Only items within the building owner’s control should be included in the assessment of carbon performance. Energy utilised for central services provided to serve tenant process loads should not be included in the assessment.</p> <p>Accordingly, buildings should have separate metering to allow for the partition of building owner and tenant energy consumption.</p> | <p>The measured carbon performance of a building should not include energy end uses, e.g. lighting, that are not within the control of the building owner.</p> <p>Appendix 1 provides guidance on the energy end uses that should be incorporated in the calculation of building owner consumption.</p> |
| C. Area denominator for assessing carbon performance | |
| Guidance | Explanation |
| <p>The measured carbon performance of a building should have an area denominator (kgCO₂/m²) rather than an occupancy denominator.</p> | <p>This approach is adopted because area can be more easily and robustly measured and audited.</p> |
| D. Recalibrating baselines | |
| Guidance | Explanation |
| <p>Once baselines are set based on actual operational building data, they are not updated unless in exceptional circumstances such as when (1) the size and quality of the underlying data set improves significantly and (2) when there is significant decarbonisation of the grid.</p> <p>CBI will undertake a review every 3 years to check for these two circumstances and whether they warrant a recalibration of city baselines.</p> | <p>Baselines establish the ‘top 15%’ of market and are used to set the performance targets that bonds must achieve to qualify for Climate Bonds Certification.</p> <p>The mechanism to set performance targets already assume a linear trajectory to zero carbon in 2050 such that performance thresholds become more stringent over time. For that reason, baselines do not have to be updated each year.</p> <p>However, there are two circumstances that warrant resetting of the baselines. In the first case, the data</p> |



set originally used to establish a city's baseline could significantly increase in size and/or quality. In the second case, significant decarbonisation of the grid could lead to a large percentage of buildings being able to achieve performance thresholds set in an earlier point in time. In these two cases, it would be prudent to recalibrate baselines so that they accurately represent the 'top 15%' of buildings in a local market.

3.2. Minimum performance target

| A. 2050 zero-carbon linear trajectory | |
|---|--|
| Guidance | Explanation |
| <p>Once the 15% baseline is established, the minimum performance target to achieve Climate Bonds Certification is determined by assuming a linear trajectory towards zero carbon in 2050 (henceforth known as 2050 zero-carbon linear trajectory).</p> <p>To avoid year-on-year moving performance targets, straight-line targets are set at the mid-point of the bond term, along the 2050 zero-carbon linear trajectory. This means that a property asset is only required to achieve the same performance target year-on-year and is not required to improve its performance over time to achieve Climate Bonds Certification.</p> <p>The computation of straight-line targets is illustrated in Appendix 2.</p> <p>For cities where 15% baselines have been established by Climate Bonds Initiative, there is a tool on the Climate Bonds Initiative website that enables one to compute the minimum performance target for a commercial property asset based on a particular issuance year and bond term. This tool is known as the CO2 Target Calculator.</p> <p>Greenhouse gas emissions factors applied to determine the carbon performance of a building are locked in at the commencement of the bond to isolate the positive effect of decarbonisation of the grid on a building's performance.</p> | <p>Climate Bonds Initiative has an overall ambition of zero carbon by 2050. Minimum performance targets are therefore set based on this premise and the 15% baseline established for the particular building type and local market.</p> <p>Adopting the 2050 zero-carbon ambition through a linear performance trajectory leads to increased performance stringency over time, contrasting most building energy/carbon assessment tools that do increase in stringency over time. To avoid the uncertainty/risk associated with moving performance targets (due to a linear trajectory), straight-line targets are computed so that a property asset is required to achieve the same target year-on-year. A clear, unambiguous but aggressive trajectory is more attractive to investors than an ambiguous trajectory with uncertainty over expectations in the near and long-term future.</p> |
| B. Climate correction mechanism | |
| Guidance | Explanation |
| <p>Performance targets will be adjusted using a year-on-year climate correction methodology such as that used by Energy Star in the USA or DECC in the UK so that buildings are not penalised due to a particularly hot or cold year.</p> | <p>A year-on-year climate correction mechanism is employed to avoid the case where a building fails to meet its performance target and funding is pulled due to climate impacts that are not within the building owner's control.</p> |

3.3. Methodology implementation

| A. Leveraging Existing Instruments | |
|--|---|
| Guidance | Explanation |
| <p>The Climate Bonds Standard will leverage work carried out to comply with existing rating tools, benchmarking tools or reporting schemes to reduce the work and costs incurred by the issuer to demonstrate compliance with the standard.</p> | <p>The degree of work (data collection, energy audits, etc.) already undertaken by building owners to comply with existing energy and/or greenhouse gas rating tools, benchmarking tools or reporting schemes should be leveraged in the Climate Bonds Certification process to avoid the duplication of efforts.</p> <p>The extent to which tools can be leveraged will depend on the degree of alignment of the instrument with the Climate Bonds Standard.</p> |
| B. Monitoring & Verification | |
| Guidance | Explanation |
| <p>Ongoing monitoring and verification should be self reported according to a well-established methodology and supported by an independent auditor’s sign off with respect to the process and record keeping.</p> <p>To maintain credibility of the Climate Bonds Standard and brand, Climate Bonds Initiative will initiate spot audits. The frequency and proportion of reports audited will be dependent on transaction volume.</p> | <p>Ongoing monitoring and verification requirements are critical for credibility of the Climate Bonds Standard. On the one hand, they need to ensure transparency and assurance that performance ambitions are met. On the other hand, they have to be sufficiently light-touch to ensure that ongoing costs are kept to an absolute minimum.</p> <p>The proposed approach to monitoring and verification will greatly reduce the cost of year-on-year compliance and will remove the need to establish a Climate Bonds accreditation scheme for assessors.</p> |
| C. Aggregation of assets | |
| Guidance | Explanation |
| <p>An area-weighted aggregation methodology, known as the Full Aggregation method, will be applied to an energy efficiency project that consists of multiple property assets.</p> <p>An aggregated baseline will be computed on a weighted average basis. Similarly, the actual carbon performance of a portfolio of multiple assets will be computed on a weighted average basis and compared to this aggregated baseline to determine eligibility for Climate Bonds Certification.</p> | <p>Energy efficiency projects have generally been considered too small to be commercially attractive to large investors. To overcome this hurdle, there is a need to enable aggregation of energy efficiency projects into larger scale opportunities. As such, the certification methodology for the Climate Bonds Standard has defined an aggregation methodology for energy efficiency projects consisting of multiple property assets.</p> |

3.4 Approach for cities where no data is available to establish baselines

| A. Leverage existing building standards | |
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| Guidance | Explanation |
| Buildings must achieve a LEED Gold or Platinum certification or equivalent performance rating under other buildings standards such as BREEAM and Green Star within the last 5 years. | In cases where no data is available to establish baselines, an interim solution has been proposed, leveraging the ratings of existing building standards. |
| Issuers seeking to apply the ratings of other buildings standards must demonstrate that those ratings deliver a level of performance in line with LEED Gold or Platinum. | Climate Bonds has collaborated with LEED and established that Gold or Platinum certification is an adequate proxy to demonstrate that a building achieves an adequate level of performance in line with Climate Bonds' overall objective. |
| | Climate Bonds is currently working with BREEAM to establish the equivalent ratings that measures up against LEED Gold or Platinum certification. |
| B. Minimum emissions performance | |
| Guidance | Explanation |
| Buildings must achieve a minimum 30% emissions improvement against the ASHRAE 90.1 criteria (a part of the LEED standard) or equivalent stringency of additional emissions improvements under other building standards. | To ensure robustness in the certification methodology, buildings must achieve another criterion relating specifically to emissions performance. |
| For emerging market cities, the alternative is to meet the carbon hurdles set in IFC's Edge Tool. | As LEED may not be well utilised in emerging market cities, an alternative approach leveraging IFC's Edge Tool has been proposed. |
| C. Maximum bond term of 6 years | |
| Guidance | Explanation |
| The green bond that is issued will have a maximum term of 6 years. | Climate Bonds appreciates the challenges in obtaining data to establish baselines and as such, has developed an interim solution for the certification of bonds in cities where no baselines are available. |
| | The timeframe for the bond term has been limited to 6 years as Climate Bonds realises that the proposed solution is not ideal and becomes weak as the bond term extends over a longer period of time. |
| D. Monitoring & Verification | |
| Guidance | Explanation |
| Ongoing monitoring but no ongoing verification beyond that required by the building standard used is required. | |

Appendix 1 – Energy end uses to be incorporated in calculation of building owner consumption

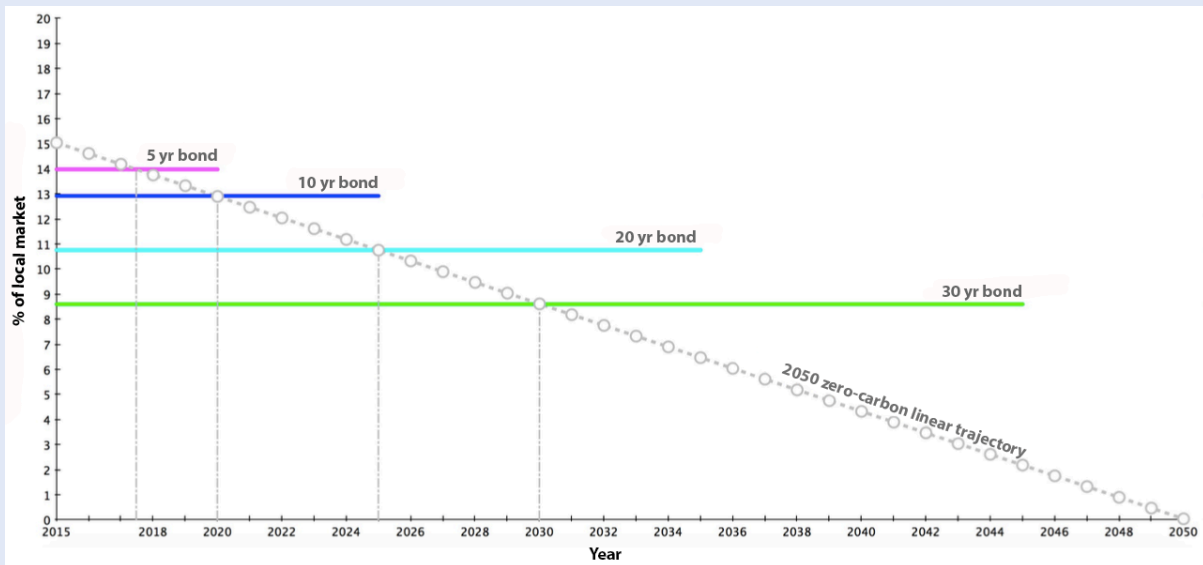
Landlord energy loads (also known as base building energy loads) typically comprise the energy consumed by landlord-owned plant and equipment that are required to service the building and are not controlled by the building's tenants. Such energy end uses include:

- Heating, ventilation and air conditioning
- Lifts and escalators
- Car park lights and ventilation
- Common area light and power
- Exterior lighting and signage

Landlord loads excludes energy end uses that are controlled by the building's tenants, such as:

- Lighting within tenant areas
- Tenant power
- Tenant supplementary cooling
- Tenant data facilities

Appendix 2 – Calculation of straight-line targets



1. The baseline is set at 15% of the local market carbon performance. Please note that this 15% baseline will be in terms of carbon emissions (kgCO_2/m^2) rather than percentage terms (of the local market) as displayed in the chart. The chart is displayed in percentage terms as it is meant to serve as a general illustration.
2. The starting point of the 2050 zero-carbon linear trajectory is set at this 15% baseline (in the year that it is established by Climate Bonds) and the end is set at zero carbon emissions (in this case, 0% on the chart) in the year 2050.
3. The straight-line targets are then derived from the intersection of the mid-point of the bond's term and the 2050 zero-carbon linear trajectory line.
4. For a 10-year bond issued in 2015, the mid-point of the bond's term is 2020 and a straight line is drawn from the year 2020 (on the x-axis) up towards the 2050 zero-carbon linear trajectory line. The straight-line target is equivalent to the y-axis value (in terms of carbon emissions) of the intersection point.

Once Climate Bonds has established a baseline for a city, it will be loaded on to the [CO2 Target Calculator](#) available on the Climate Bonds website.

This calculator automatically calculates the minimum performance target for a property asset in a particular city based on the issuance year and term of the bond. This calculator simplifies the process of determining minimum performance targets for the bond issuer.