

<b>Climate Bond Standard Energy Efficiency</b>		
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# Financial Upgrades

## Upgrade Finance Methodology

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13 May 2014

Version: 001

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# Executive Summary

## Objective

To define a methodology that will allow the Climate Bond certification of financing mechanisms for energy efficiency upgrade projects (e.g. Green Deal (UK), Property Assessed Clean Energy (USA), Environmental Upgrade Agreements (Australia)).

## Goals

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

The characteristics of scheme design that require direction from the Technical Working Group have been grouped into sections dealing with;

1. Methodology
2. Target and qualification
3. Implementation

## Guiding Principals

The following principles of design have guided the recommendations in this report.

- **simple aggregation** of individual assets to provide:
  - bonds of sufficient size to be attractive to institutional investors.
- **lowest cost of application** and ongoing monitoring and verification to ensure:
  - compliance costs do not undermine the attractiveness of Climate Bond certification
  - the scheme is able to be used for assets in developing countries
- **climate relevant metrics** to achieve:
  - compatibility with existing international frameworks for financing
  - relevance to corporate reporting frameworks
  - relevance to emerging city GHG abatement policies
- **transparency** of approach and methodology to support:
  - market transparency

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- improved management of performance risk at property at level

## Summary of scheme design recommendations

It is recommended that the Eligibility Criteria for the Climate Bonds Standard be based on a framework that assesses energy efficiency as follows:

- The scheme will provide Climate Bond certification for commercial and residential buildings that have a performance contract or upgrade agreement that will result in a minimum 50%\* carbon reduction when the upgrade is completed. \*To be agreed
- The carbon reduction will be measured from a project specific business as usual baseline or as deemed under relevant legislation.
- Project qualification will be through demonstration that the percentage carbon reduction resulting from the upgrade meets or exceeds the 50%\* reduction target.
- Performance contracts or upgrade agreements that specify a required percentage reduction greater than or equal to the 50%\* target will qualify for Climate Bonds certification.
- Performance contracts or upgrade agreements that do not explicitly specify a percentage carbon reduction for the project, and where a percentage reduction cannot be quantified or demonstrated (e.g. through modelling), are not eligible for Climate Bonds certification.
- Aggregation will be by simple pooling of qualified buildings.
- 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.

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# Upgrade finance methodology

## 1. Methodology

### Problem Definition

Climate Bonds has identified a need to recognise buildings that are currently unable to comply with the eligibility requirements of the commercial and/or residential methodologies but are endeavouring to make significant carbon reductions through energy efficiency upgrades. As such, a methodology to provide Climate Bond certification of performance contracts and upgrade agreements has been developed.

The proposed methodology is a deemed methodology intended for use by projects that have entered into a performance contract or upgrade agreement where the level of energy/carbon reduction demonstrated to result from the upgrade is considered to provide a level of environmental additionally suitable for Climate Bonds certification.

The methodology is intended for use by ESCOs and legislated financing schemes such as Green Deal (UK), Property Assessed Clean Energy (USA), Environmental Upgrade Agreements (Australia).

### Recommendation

It is recommended that buildings entering into performance contracts or upgrade agreements where the carbon reduction outcomes are considered significant enough to provide environmental additionally and maintain the integrity of the Climate Bonds standard should be eligible for Climate Bonds certification.

Certification using this methodology will remain distinct from the primary measurement and verification method used for commercial building Climate Bond certification and the deemed methodology used for residential bonds.

# Target and Qualification

## 1. Target

### Problem Definition

A minimum project performance target needs to be agreed to ensure that the upgrade is providing a level of additionally that maintains the integrity of the Climate Bonds standard.

### Recommendation

A performance target of 50% carbon reduction is proposed to meet the ambitions of the Climate Bonds standard and to avoid the lock in effect.

This target has been derived from analysis of data in Australian cities of Sydney and Melbourne and consideration of local rating tools in the USA and Australia. A 50% reduction is consistent with repositioning an asset in the bottom 15% of the market to the top quartile of the market in both Sydney and Melbourne. It is also equivalent to moving an asset at the median performance level to the top 5%.

When tested against local rating tools, for typical office buildings, the 50% reduction target appears to set the appropriate level of ambition. In Australia, a carbon reduction of approximately 50% is required to

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move from 2 Star NABERS (below average performance) to 4.5 star NABERS (very good performance). Similarly, Energy Star (although based on Whole Building data) requires a 51% reduction to move from bottom 15th percentile to top quartile and a 53% reduction to move from median to top 5 percentile.

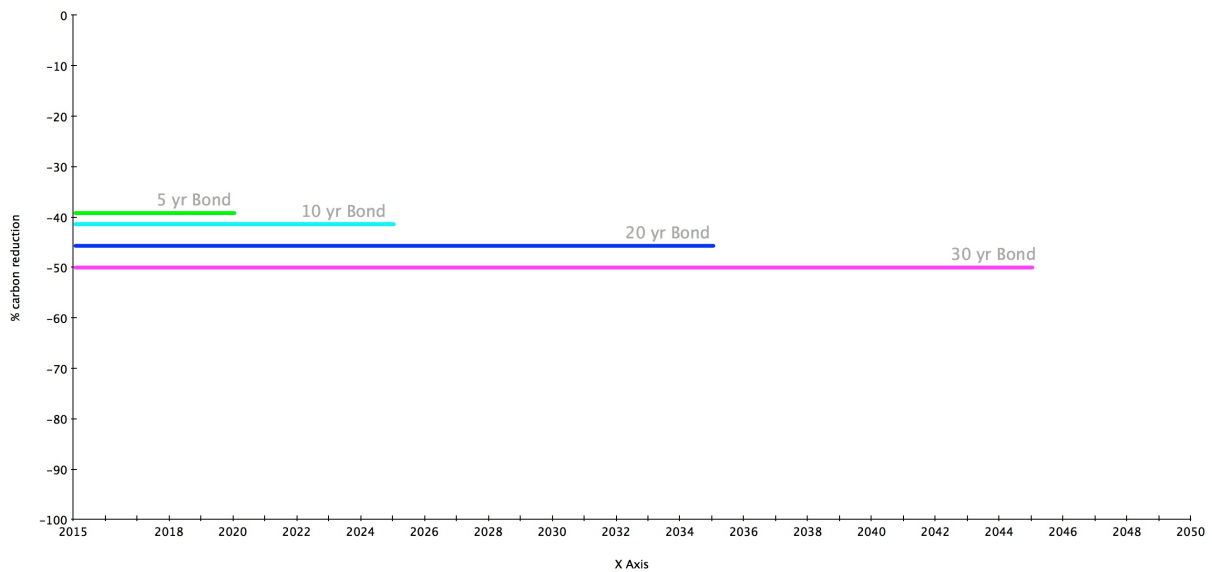
## 2. Trajectory

### Problem Definition

The 50% reduction target has been proposed to set the appropriate ambition level for a 30 year bond, however shorter term bonds may have difficulty achieving this performance target. Reduced reduction targets may be necessary for shorter bond terms.

### Recommendation

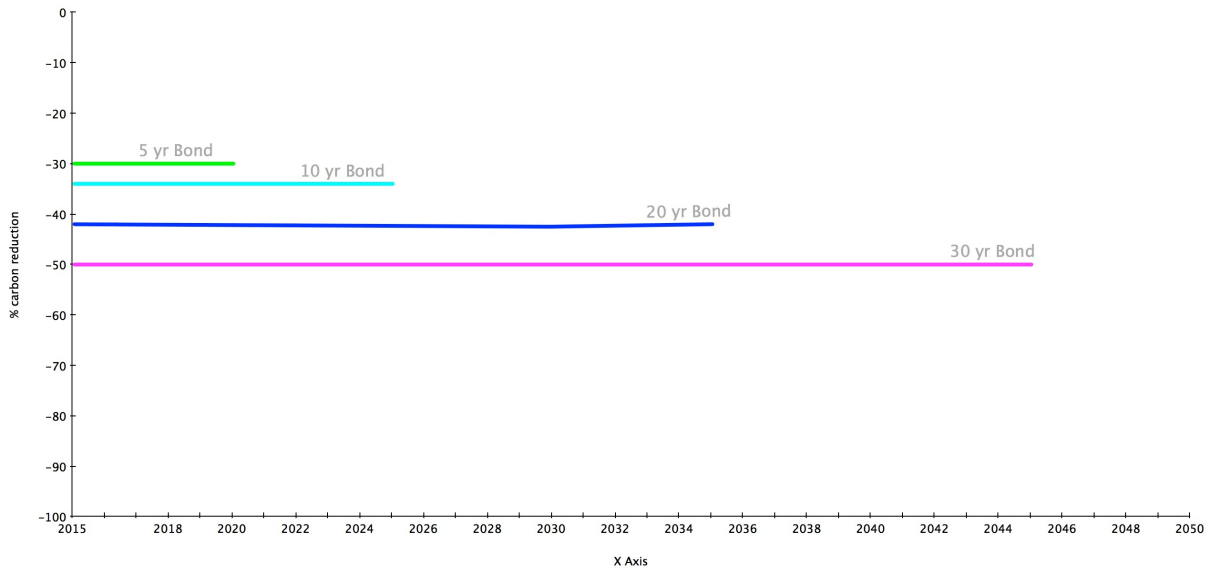
It is recommended that a trajectory, similar to that used by the commercial methodology, be used to backcast the performance targets for shorter bond terms. A trajectory with the same gradient as that used by the commercial methodology has been applied to derive performance targets for shorter bond terms. The resulting performance targets are shown below:



The short term performance targets achieved by applying the commercial methodology trajectory are potentially too stringent for short term finance. It is recommended that allocation to term may be better aligned to a steeper ramp as presented in the following figure:

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The proposed trajectory needs to be agreed to ensure that the performance targets provide the appropriate level of stringency.

## 3. Qualification

### Problem Definition

To be certified under the upgrade finance Climate Bonds standard, projects will need to demonstrate that the percentage carbon reduction resulting from the completed upgrade will meet the relevant reduction target applicable to the term of the bond.

### Recommendation

Where the contract for the upgrade finance specifies a percentage of carbon abatement relative to a business as usual baseline and this abatement meets the minimum performance requirement for the Climate Bonds standard, the project will qualify.

Where the contract for upgrade finance does not specify a percentage of carbon abatement relative to a business as usual baseline, but a percentage reduction can be quantified (e.g. through modelling), the project will qualify if the demonstrated abatement meets the minimum performance target. For example, if upgrade finance has been approved for a lighting retrofit and HVAC upgrade within an office building currently emitting 795 tCO<sub>2</sub> a year and the upgrades have been modelled to show a 180 tCO<sub>2</sub> saving from lighting energy consumption and a 220 tCO<sub>2</sub> saving from HVAC energy consumption, it can be demonstrated that the resulting percentage carbon abatement will be 50% and the project will qualify for Climate Bonds certification.

Where the upgrade agreement or contract does not specify a percentage of carbon abatement and the benefit of the upgrade cannot be demonstrated or quantified, the project will not be eligible for Climate Bonds certification.

## Implementation



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## 1. Monitoring and Verification

### Problem Definition

Performance contracts and upgrade agreements require ongoing annual reporting of energy performance for the duration of the contract or agreement. Climate Bonds should not impose monitoring and verification requirements in addition to those already required for the upgrade finance. Furthermore, ongoing measurement and verification is considered unsuitable for residential assets as it would require ongoing reporting from homeowners.

### Recommendation

It is recommended that the methodology will not impose any monitoring and verification requirements beyond those required by the performance contract or upgrade agreement. Commercial buildings will be required to report annually, in accordance with the terms of the contract or agreement of the relevant scheme. The ongoing abatement of residential buildings will be deemed with no requirement for ongoing verification.

## 2. Aggregation

### Problem Definition

As was the case with commercial and residential building Climate Bonds, there may be a need to enable aggregation of projects so the scale becomes commercially attractive to investors.

### Recommendation

It is recommended that projects that demonstrate compliance with the percentage carbon reduction target, and are approved under the deemed methodology, should be allowed to be aggregated by pooling assets into a larger aggregated asset.

# Future Work

## 1. Issues requiring technical clarification

### Additional Considerations

- Setting appropriate carbon reduction target (e.g. 50% reduction from baseline);