UK GBC

The voice of our sustainable built environment

JUNE 2024 UPDATE

CARBON OFFSETTING AND PRICING REPORT

JUNE 2024

UK Green Building Council
ukgbc.org

ADVANCING NET ZERO

ACKNOWLEDGEMENTS

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JUNE 2024 UPDATE – SUMMARY OF CHANGES

Since the publication of this report in June 2023, the Integrity Council for the Voluntary Carbon Market (ICVCM or Integrity Council for short) have released further details on their Core Carbon Principles Assessment Framework and Procedure, and the University of Oxford have revised and updated their Oxford Principles for Net Zero Aligned Carbon Offsetting. Consequently, it was necessary to also update elements of this report to include the relevant updates where appropriate, from both these sources.

The majority of this report remains the same as do the four steps that real estate developers and investors should take to ensure holistic and ambitious carbon offsetting. Please see the Schedule of Changes in the Appendix section for the detail of changes.

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UKGBC would like to sincerely thank all members of the Working Group for their feedback, assistance and contributions over the course of the project.

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FOREWORD

In the UK, our built environment is directly responsible for 25% of our national greenhouse gas emissions. Alarmingly, our sector alone contributed 3 billion tonnes of greenhouse gas emissions between 1990 and 2019. To put this into perspective, these levels are equivalent to the combined emissions of agriculture, aviation, and shipping, highlighting the immense impact our industry has had on the environment and underscoring the urgent need for action.

As concerns around climate change continue to escalate, we find ourselves facing unprecedented challenges and risks. Limiting global temperature rises is not a mere abstract goal – it's a crucial necessity. We must work together to dramatically reduce our collective emissions and limit global temperature rises to 1.5 ˚C, as set out by the Paris Agreement of 2015. Failure to do so risks severe consequences, such as extreme weather events, the extinction of countless species, and disruption of ecosystems, human health, food security, economic stability, and social wellbeing.

In line with the emerging UK Net Zero Carbon Buildings Standard, delivering net zero carbon status for a building (whether new or existing) requires the achievement of minimum energy use intensity and embodied carbon limits for most asset types. Such targets will ensure that a credible science-based carbon reduction approach has been taken at an asset level, in line with the UK's remaining carbon budget. Once such targets have been achieved, however, true net zero carbon status is likely to require the procurement or generation of additional renewable energy and/ or the offsetting or credible mitigation of any residual emissions. It is this final approach to carbon offsetting and further climate mitigation that is the subject of this guidance document.

This guidance is crucial in equipping organisations that seek to accelerate their net zero transition to go beyond the procurement of voluntary credits to compensate for their residual emissions (which is positioned as a minimum approach). An ambitious approach to internal carbon pricing is encouraged because the cost of accredited carbon credits on the voluntary market does not accurately reflect the full societal and economic cost of emitting carbon into the atmosphere. The higher the price associated with a tonne of carbon, the more attainable it becomes to restrict the global temperature increase to 1.5 ˚C because the £/tonne put aside can fund more carbon avoidance, reduction and removal activities.

We have a responsibility to ensure that we achieve the transition to a net zero carbon built environment as soon as possible. This requires us to think beyond the scope of individual buildings or projects, and to think bigger in terms of how we can further avoid, reduce and remove greenhouse gas emissions by adopting ambitious carbon pricing and offsetting strategies.

DAVID PARTRIDGE
Chairman, Related Argent
Chair of the UK Net Zero Carbon Buildings Standard Governance Board

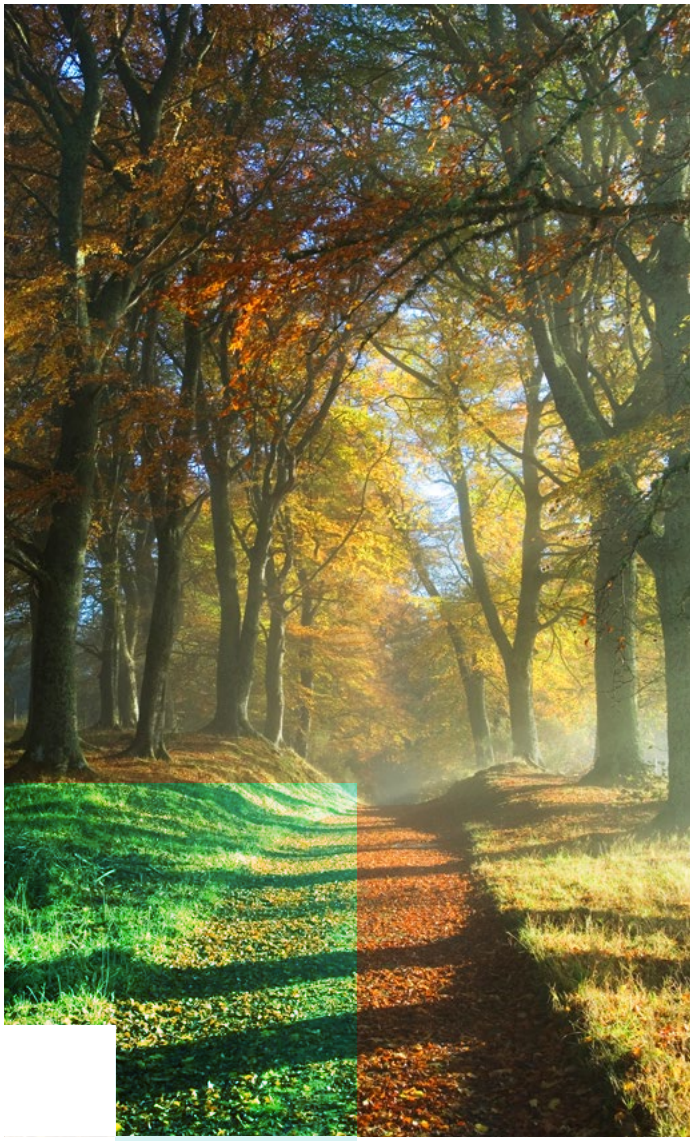
1 EXECUTIVE SUMMARY

1.1 PURPOSE

This guidance document will inform professionals across the whole built environment value chain. While providing general guidance, it will primarily target real estate investors and developers who are committed to achieving net zero carbon across a single built asset, or a portfolio of existing assets and construction projects.

- It provides a step-by-step process to enable real estate developers and investors to take a more holistic approach to ambitious carbon offsetting, which goes beyond basic procurement of voluntary offset credits.
- It updates previous UKGBC guidance on carbon offsetting at the level of an individual asset – assuming the science-based operational and embodied carbon targets due to be defined by the Net Zero Carbon Building Standard (NZCBS) have been met – encouraging consideration for the different typologies of offsets available and how these should be weighted differently over time.
- It encourages and facilitates a wider adoption of internal carbon pricing as an additional and complimentary mechanism to accelerate the decarbonisation of the built environment.
- It provides all practitioners with the vocabulary to describe key offsetting and internal carbon pricing terminology and principles.

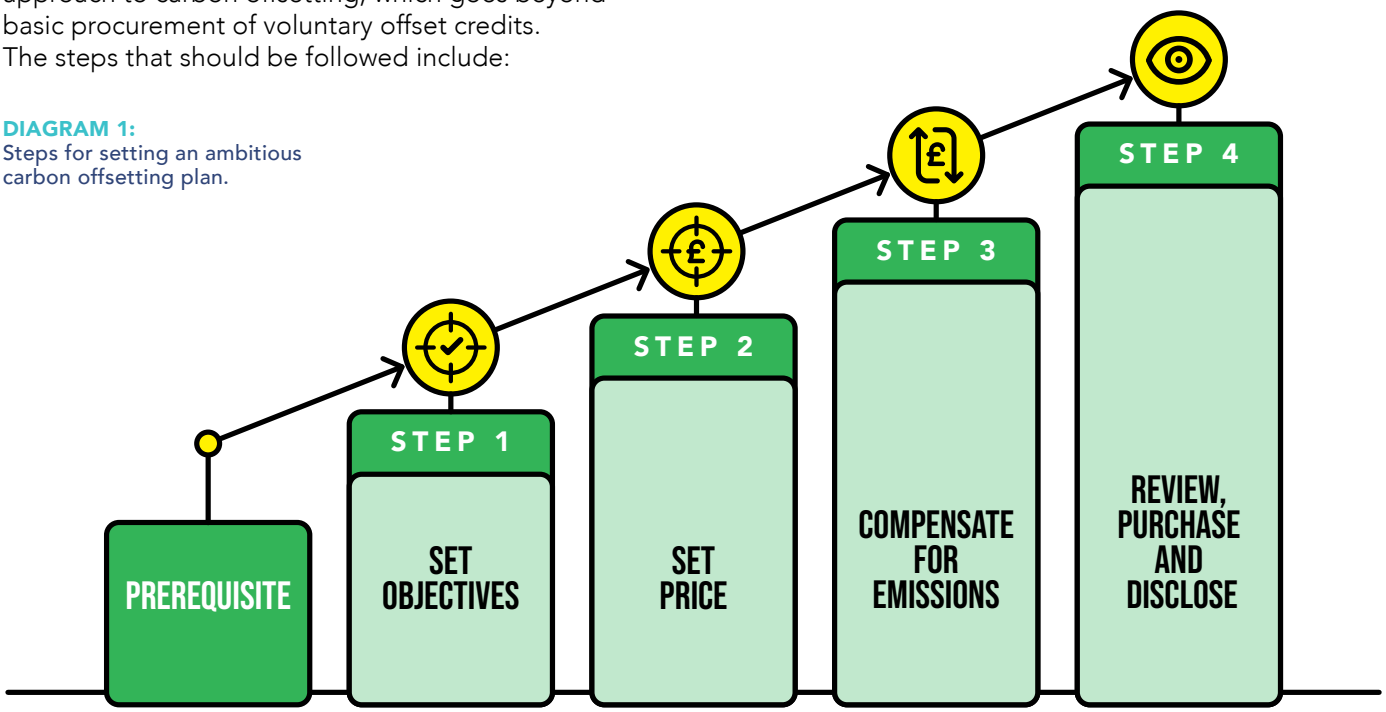
It is important to note that industry practice and stakeholder expectations around best practice for carbon offsetting and internal carbon pricing are rapidly evolving. As such, this guidance will likely need to be updated on a regular basis to reflect changing market conditions and emerging practices.



1.2 SETTING AN AMBITIOUS CARBON OFFSETTING PLAN

Within this guidance, we recommend that real estate investors and developers should adopt a holistic approach to carbon offsetting, which goes beyond basic procurement of voluntary offset credits. The steps that should be followed include:

DIAGRAM 1:
Steps for setting an ambitious carbon offsetting plan.



2 INTRODUCTION

2.1 BACKGROUND

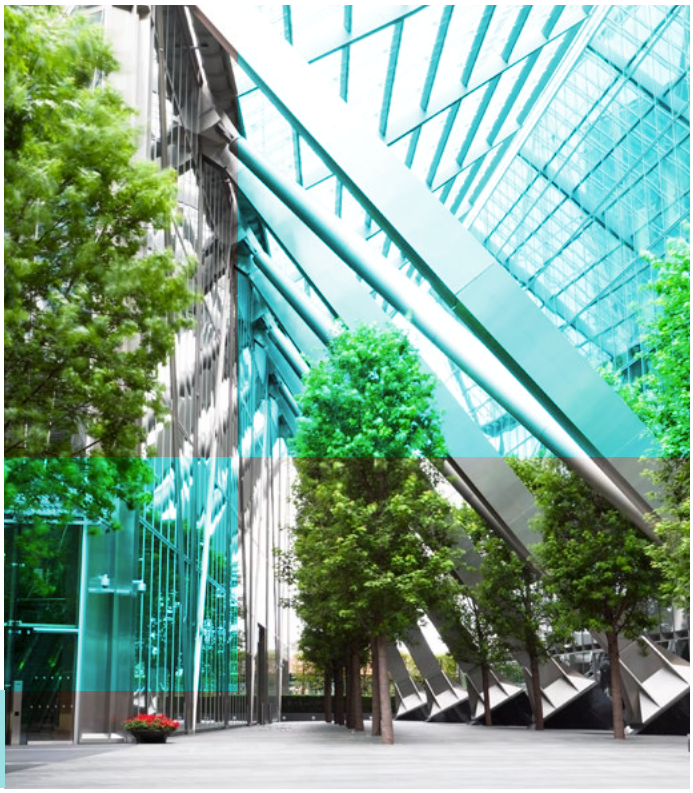
For a building to achieve net zero emissions, it is essential that built environment professionals follow a science-based decarbonisation pathway that prioritises reducing emissions in line with 1.5˚C, before evaluating offsetting options for any residual emissions.

In March 2021, UKGBC published the Renewable Energy Procurement and Carbon Offsetting Guidance for Net Zero Carbon Buildings, which provided guidance for the procurement of high-quality renewable energy and carbon offsets to support the UKGBC's seminal Net Zero Carbon Buildings: A Framework Definition. The Framework Definition was a key influence in the development of the forthcoming UK Net Zero Carbon Buildings (NZCB) Standard for net zero buildings in the UK. All these documents form part of the suite of outputs under UKGBC's Advancing Net Zero programme. Specific guidance on renewable energy procurement is now covered in a separate stand-alone guidance document.

Since 2021, the landscape in which the initial carbon offsetting guidance was published has evolved significantly. The buildings industry has seen a sharp and considerable uptake of net zero targets, and the voluntary carbon market – where offsets are purchased – continues to be unregulated, which can make purchasing offsets increasingly challenging. In response to this, the ICVCM was established as an independent governing body to oversee the voluntary carbon market. And in late 2023, the ICVCM developed and released their Core Carbon Principles (CCPs) and Assessment Framework. This report uses the CCPs to share examples of impactful strategies for offsetting and internal carbon pricing and demonstrates that responsible offsetting can be used, not just to compensate residual emissions, but also to promote social equity, restore ecosystems, and drive positive change within, and beyond, value chains.

The adoption of internal carbon pricing is also growing increasingly common across industry sectors. Within the context of built environment challenges it offers a useful financial mechanism to take a more holistic approach to ambitious offsetting. The initial UKGBC offsetting guidance introduced the notion of a 'transition fund', where a carbon price at least equal to the HM Treasury Green Book could be used, in part, to purchase offsets, while the remaining funds could be allocated towards any other efforts that promote positive climate action. In late 2021, the UK Government revised their assessment approach to the price of carbon for policy decisions, which led to an almost 350% increase in the prices quoted by the Green Book. This update partly prompted the need to revise our original 2021 guidance to reflect changes in carbon pricing.

Throughout this document, reference is made to the net zero hierarchy. This refers to the adherence to the Net Zero Carbon Buildings Framework with science-based decarbonisation pathways, which is soon to be incorporated into the UK Net Zero Carbon Buildings Standard. It's important to note that any approach to offsetting at the level of individual assets is only credible if science-based embodied carbon and energy use intensity limits have been met.



2.2 SCOPE

This document aims to provide comprehensive guidance on voluntary carbon offsetting and pricing strategies that are specifically tailored for built assets (both new and existing). It does not intend to cover organisational offsetting approaches, nor does it intend to cover compliance-based carbon taxes (e.g. Section 106 requirements – for which further details can be found in the appendix).

OFFSETTING AND CARBON PRICING AT BUILT ASSET VS ORGANISATIONAL LEVEL

BUILT ASSETS

Emissions are categorised in lifecycle stages as outlined in **BS EN 15978-1:2011 Sustainability of construction works**. This accounting methodology separates carbon emissions into upfront carbon A1-A5, in use B1-B7 (with operational energy B6-B7), end of life C1-4 and beyond end-of-life D. In line with the net zero hierarchy, the Net Zero Carbon Buildings Standard will set minimum performance thresholds for upfront carbon (for construction projects) as well as operational energy use intensity (from in-use operations of existing assets). Any offsetting of residual emissions assumes that these minimum performance thresholds have been achieved and verified. The timing of the offsetting should therefore align with completion of construction projects and/or annually for actual energy usage of existing assets.

ORGANISATIONAL

The **Greenhouse Gas Protocol Corporate Standard** categorises a company's emissions into Scopes 1, 2 and 3. This accounting methodology is widely used at an organisational level and reflected in Standards such as the **Science Based Target Initiative (SBTi)** and its own **Corporate Net Zero Standard**. While SBTi differentiates between carbon neutralisation and carbon compensation, it generally refrains from using the term 'offsetting'. The Standard also sets guidelines for when carbon compensation is permissible, with emphasis on removals-based approaches. As a result, the overall approach to carbon measurement and accounting, carbon pricing, carbon offsetting, etc., is different when comparing organisational-wide to individual assets or portfolios. For guidance on internal carbon pricing at an organisational level, refer to CDP's **How-To Guide to Corporate Internal Carbon Pricing**.

3 ESTABLISHING A PLAN FOR CARBON OFFSETTING

This section provides a step-by-step process which will enable decision-makers to take a more holistic approach to carbon offsetting.

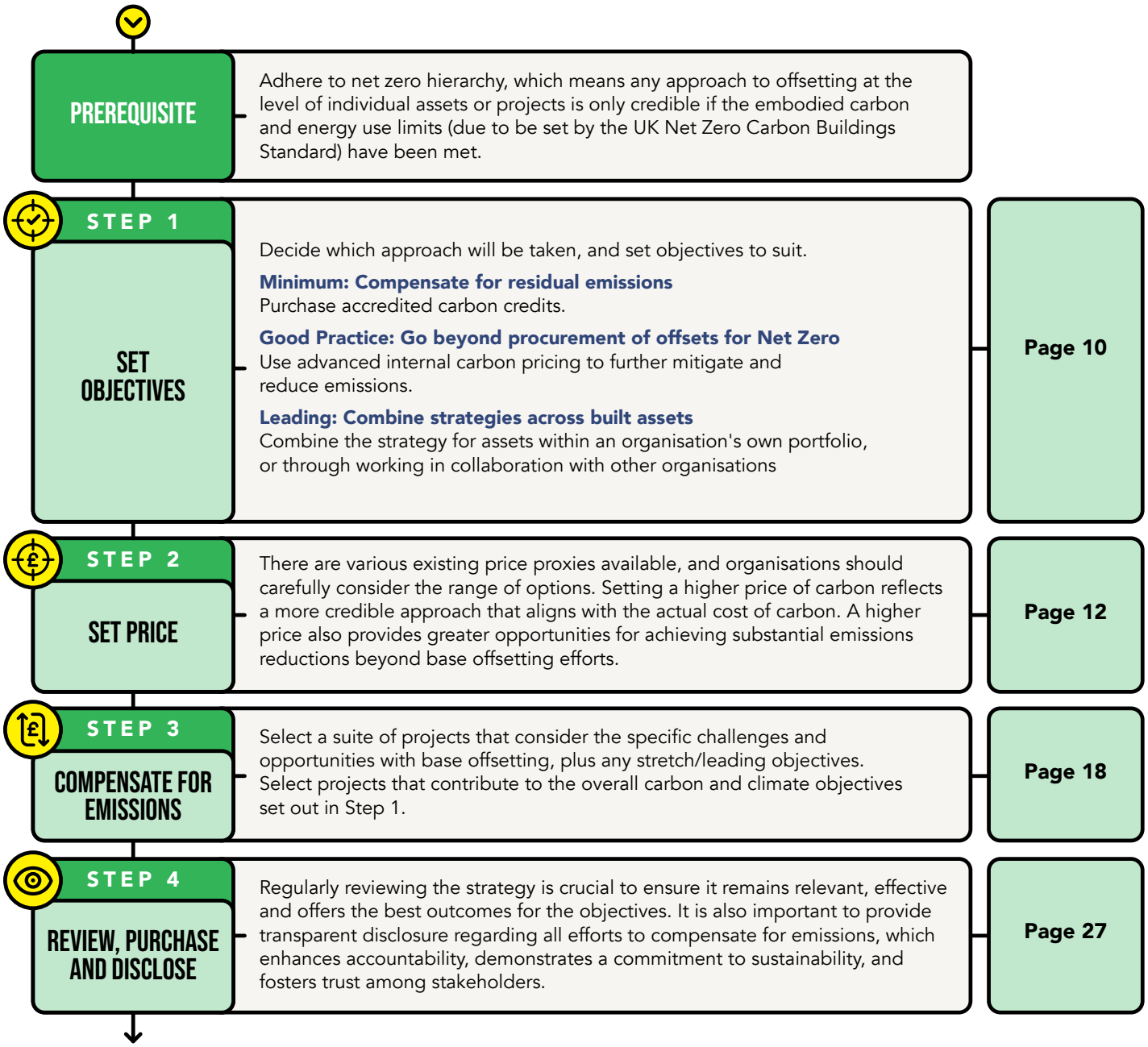


DIAGRAM 2:
Step-by-step process for establishing an ambitious carbon offsetting plan.

4 STEP 1 SET STRATEGIC OBJECTIVES

Organisations should decide, as early as possible, which approach to carbon offsetting and pricing they intend to take. These approaches are demonstrated below.

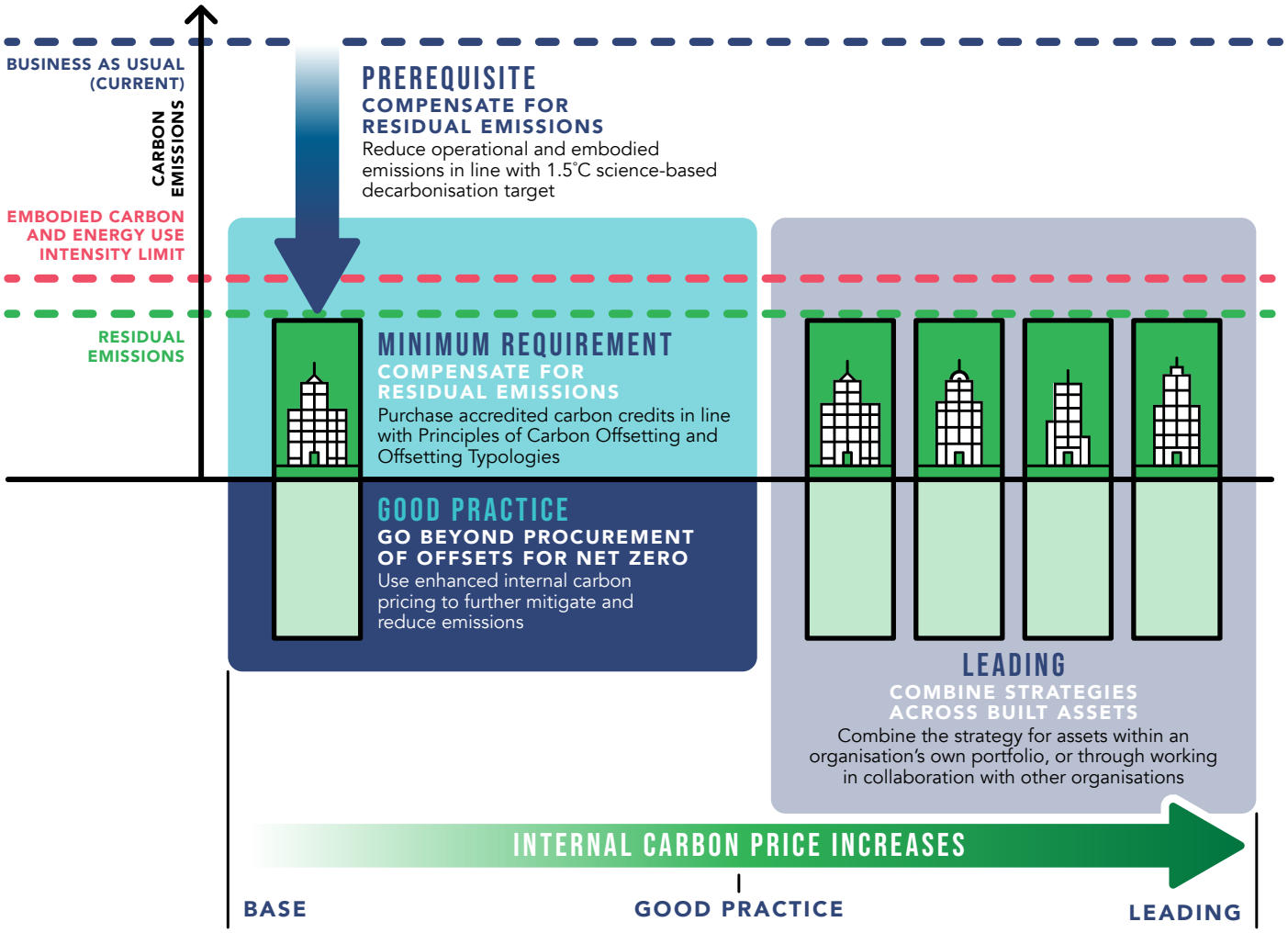
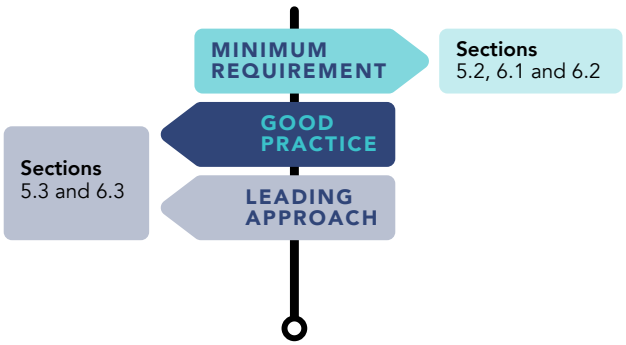


FIGURE 1:
High level summary of Minimum Requirement, Good Practice and Leading Approaches.



In deciding on an approach, organisations should consider their specific context, goals and desired outcomes. It is recommended that organisations:

1. **DETERMINE** their long-term vision and objectives related to carbon offsetting, and any further emissions reductions or removal activities.
2. **CONSIDER** the relative importance of any wider socioeconomic or environmental co-benefits, such as biodiversity, education, promoting gender equality, etc. These could be measured against the United Nations Sustainable Development Goals and may be driven by an organisation's ESG (environmental, social and governance) strategy.
3. **INVOLVE** key stakeholders, both internal and external, in the objective-setting process. This may include senior management, consultants, tenants, investors, community groups, and industry partners.
4. **RESEARCH** and benchmark against industry peers, to learn from experiences and identify strategies and targets that align with existing or emerging trends.
5. **SET** ambitious and challenging, yet realistic, goals in order to maintain motivation and drive continuous improvement.
6. **REGULARLY** review and update the strategy. As circumstances evolve, organisations should assess progress, adapt to emerging opportunities or challenges, and refine their aims accordingly. Refer to Step 4, where this is also highlighted.

5 STEP 2 SET PRICE

5.1 CONTEXT

Carbon pricing uses market mechanisms to pass the cost of emitting greenhouse gas (GHG) emissions onto polluters, with the aim of discouraging emissions. The overall objective is to discourage GHG emissions, drive decarbonisation, and help support action and progress against the risks of climate change. Carbon pricing is based around the 'polluter pays' principle.

FORMS OF CARBON PRICING

MINIMUM REQUIREMENT APPROACH: CARBON OFFSETS

Involves assigning a price to purchase carbon credits to compensate for residual emissions and claim carbon neutrality or net zero (depending on the extent of pre-offsetting emissions reductions).

GOOD PRACTICE/LEADING: ENHANCED INTERNAL CARBON PRICING OR ICP

Involves voluntarily assigning a cost to carbon emissions within a business's own decision-making processes. This can be achieved through an Internal Fee, which is a carbon pricing mechanism. Other forms of pricing mechanisms, based on theoretical costs of carbon – Shadow Prices and Implicit Prices – are provided for information.

The difference between these two approaches is that the price of an offset credit does not typically reflect the actual cost of emitting carbon into the atmosphere.

COMPLIANCE BASED CARBON PRICING

CARBON TAX – involves placing a direct price on GHG emissions, whereby polluters pay for each tonne of carbon dioxide equivalent (tCO_2e) emitted. This pricing mechanism provides a financial incentive for businesses to reduce their carbon footprint, as they will face increased costs if they fail to do so. An example of this in the UK is the Section 106 payment for operational carbon made to the local authority to re-invest in decarbonisation activities outside the site boundary. For further information on Section 106, please see appendix.

EMISSIONS TRADING SYSTEM/SCHEME or **ETS** – also known as cap-and-trade systems, involve setting a limit on total GHG emissions that can be emitted from certain sectors. The allowances can be traded, providing a market-based approach to reduce emissions. An example of this is the UK-ETS, which was established in January 2021, which covers organisations responsible for a third of the total UK's emissions (including steel and concrete manufacture).

Carbon taxes and most emissions trading systems are compliance-based and fall outside the scope of this document, however further details can be found in the information box.

5.2 MINIMUM REQUIREMENT APPROACH: CARBON OFFSETS

If an organisation has decided to take a base approach to compensating for residual carbon emissions, the next step is to review Figure 3, which will assist in establishing an indicative price of a carbon credit and incorporating this into a cost plan, before proceeding to Step 3. The price should be recalculated once Step 3 is complete and should be sufficiently large enough to cover the cost of offset credits, plus any added management costs (e.g. personnel time to review offset project documentation, broker fees etc).

5.3 GOOD PRACTICE AND LEADING APPROACH: INTERNAL CARBON PRICING

According to the Task Force on Climate-related Financial Disclosures (TCFD), an Internal Carbon Price (ICP) is an internally developed estimated cost of carbon emissions which can be used as a tool to help identify revenue opportunities and risks, as an incentive to drive energy efficiencies to reduce costs, and to guide capital investment decisions.

Internal Carbon Pricing should apply to all greenhouse gas emissions throughout all stages of a built asset life cycle. Adopting an appropriate Internal Carbon Price demonstrates leadership in sustainability and sends a message to suppliers and project collaborators that carbon-intensive processes, materials, and decisions come at a premium, supporting broader market reductions.

Opportunities and Risks of Internal Carbon Pricing

OPPORTUNITIES	RISKS
Creates a financial disincentive for business as usual and sends a signal of intent to reduce emissions to collaborators.	Sensitive to price: if the price is set too low, there is no incentive to change. If it is too high, viability and market competitiveness become challenging
Increases awareness of cost of carbon abatement and encourages emissions reduction initiatives.	Difficult to predict what the future price applied should be and how it evolves over time.
Drives innovation by generating finance and commitments for climate action.	Communication through the business and other stakeholders can be difficult.
De-risk the investment in a built-asset against changes to future carbon compliance-based pricing legislation.	Could be relied on as a “silver bullet”. Internal Carbon Pricing should instead be a component of a diverse net-zero strategy.
Demonstrate to investors and stakeholders the financial exposure required for climate action.	Internal Carbon Pricing can be complicated to implement is reliant on effective carbon measurement and reporting processes.

5 STEP 2 SET PRICE CONTINUED

Types of Internal Carbon Pricing

An **Internal Fee** is a value attached to the current cost of carbon to address each tonne of residual carbon emissions equivalent (tCO_2e). This fee rate is applied to the as-built lifecycle carbon assessment associated with a built asset or group of assets, or to a centralised managed fund.

To spread financial payments, fund managers may decide to purchase and retire offset credits for "net zero" or "carbon neutrality" claims in advance of receiving the complete as-built lifecycle carbon figures. A lower-bound estimate of carbon emissions can be used to make an initial payment, then the fund gets topped-up once the actual emissions have been determined.

The internal fee pricing mechanism can also be set at a tiered price, whereby if a scheme fails to decarbonise below a threshold, a higher internal fee is charged.

CALCULATION

Cost of Carbon (£)	=	**Internal Carbon Price** £/tonne of CO_2e	x	**Quantity of Carbon** *(from lifecycle carbon assessment)* tonnes of CO_2e

Additional types of internal carbon pricing: Shadow Price and Implicit Price

The following two types of internal carbon pricing – Shadow Price and Implicit Price – are theoretical values and not directly linked to any financial payment. They have been included for informational purposes as mechanisms that can support and drive actual climate action through an Internal Fee.

Shadow Price

A Shadow Price is a theoretical future cost per tonne of carbon emissions equivalent (tCO_2e) to forecast the commercial viability and cost-saving potential of any design comparison exercise. An example comparison exercise is shown in Figure 2. Adopting a Shadow Price ensures the cost of carbon is considered within a cost plan and protects funds for future investment later, as part of an Internal Fee (discussed above).

Implicit Price

An Implicit Price is the actual value spent of the historic cost of each tonne of carbon emissions equivalent. It can be calculated by dividing the cost of abatement by the tonnes of carbon abated or removed.

To continuously improve and refine carbon pricing strategies, an Implicit Price could be used as a benchmark for setting or reviewing prices used in past decision-making or to inform future prices. With the latter, it's important to note that an Implicit Price is a retrospective value and will not accurately predict the future cost of carbon emissions.

USING INTERNAL CARBON PRICING MECHANISMS

An Internal Fee is the only pricing mechanism where a financial payment is made. Decision-makers are therefore encouraged to use an internal fee to drive positive climate action. The other types of internal carbon pricing mechanisms mentioned here (shadow price and implicit price) can be used as tools to support the price set for an internal fee in decision making processes.

SHADOW PRICE		
		
OPTION A	**OPTION B**	**OPTION C**
Construction Cost = £6 million **Upfront Carbon** = 5,000 tCO_2e **Shadow Price** = £250 / tCO_2e **Carbon Shadow Cost** = £1.25 million	**Construction Cost** = £6.5 million **Upfront Carbon** = 4,000 tCO_2e **Shadow Price** = £250 / tCO_2e **Carbon Shadow Cost** = £1 million	**Construction Cost** = £6.7 million **Upfront Carbon** = 2,000 tCO_2e **Shadow Price** = £250 / tCO_2e **Carbon Shadow Cost** = £0.5 million
Total Cost = £7.25 million	**Total Cost = £7.5 million**	**Total Cost = £7.2 million**

FIGURE 2: Example use of Shadow Price in decision-making.

5.4 SETTING AN INTERNAL CARBON PRICE

Setting the value of an internal carbon price (ICP) is dependent on the purpose and climate ambitions set in Step 1. Best practice sets an ICP that enables built assets to responsibly offset residual emissions, whilst retaining funds for further emission reductions or removals. It's essential to test an ICP in various contexts before setting it – some example cost models are included on the next page.

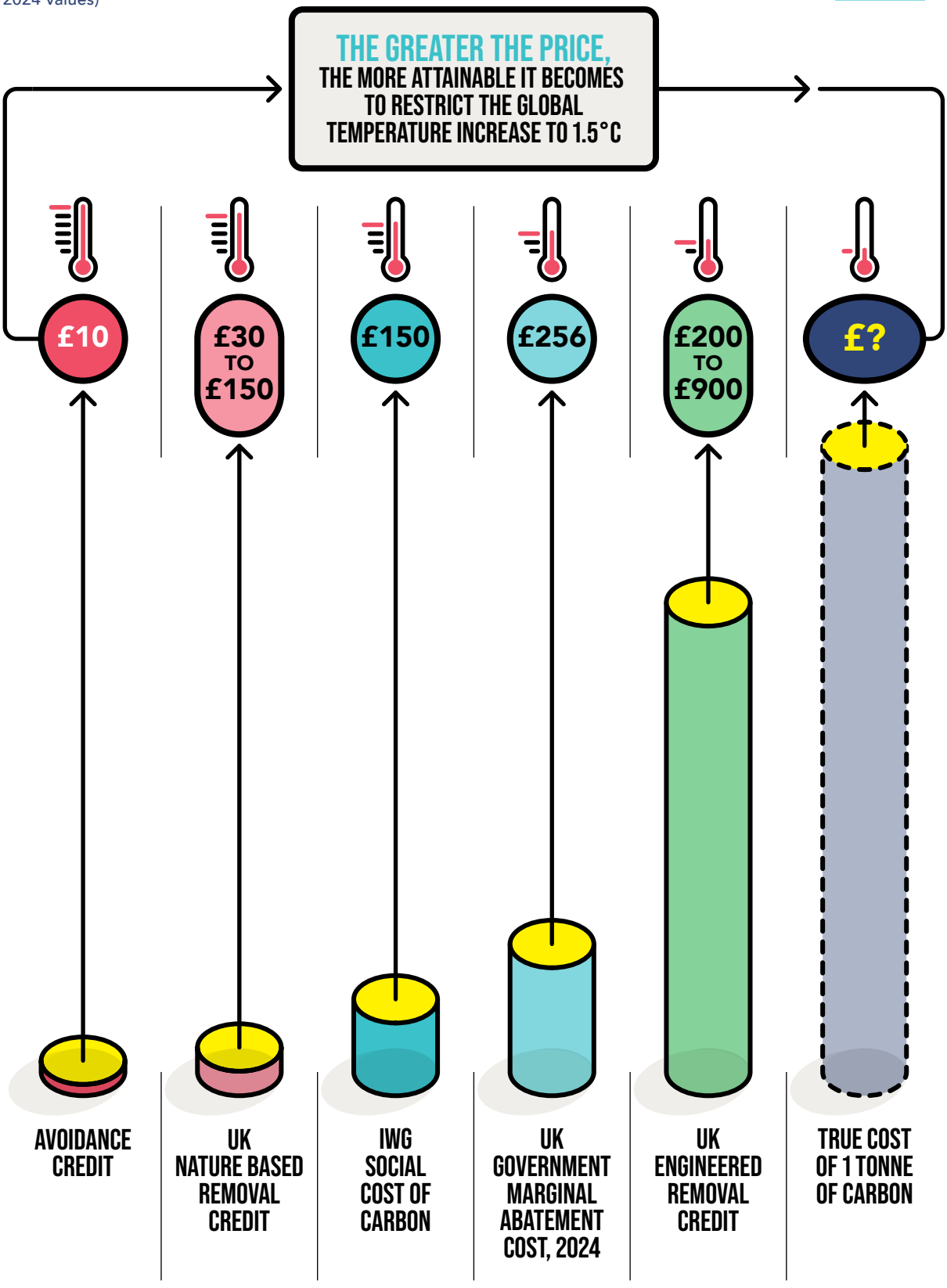
COST MODEL	**Marginal Abatement Cost** (MAC)	**Social Cost of Carbon** (SCC)
DESCRIPTION	The MAC or 'target consistent' valuation approach represents the costs of reducing emissions.	The SCC is a representation of costs associated with damage to the planet if emissions were to continue at current rate.
EXAMPLE PRICE	**£126 to £378 /tCO_2e** (increases) annually)	**£150 /tCO_2e**
COUNTRY-SPECIFIC EXAMPLE	The UK Government HM Treasury Green Book uses a MAC approach to model how to meet the UK's Net Zero target by 2050, which can be used for policy, cost analysis, and decision-making. In 2017, the HM Treasury Green Book non-traded carbon prices was £60/tCO_2e, rising to £70/tCO_2e in 2021. In late 2021 however, the UK Government released an updated Marginal Abatement model for determining the value of greenhouse gas emissions. The price increases each year from 2020 to 2050, with three curves (low, central, and high) to account for the large uncertainty in cost modelling. The central value for 2024 is £256/tCO_2e. It is important to note that these are 2021 price projections and would need to be adjusted for inflation for a more accurate understanding of the prices at time of reading. Section 106 Payments – an example from Greater London Authority. In June 2017, the GLA commissioned a study by AECOM to inform the viability assessment of the London Plan 2020. The study team found it challenging to calculate robust costs per tonne of carbon for selected offsetting projects due to the variability in costs and carbon savings and uncertainty in securing percentage co-payments. Therefore, the study adopted the nationally recognised (HM Treasury Green Book) carbon pricing mechanism at the time to determine carbon prices for offsetting in London, rather than basing it on the cost of carbon savings from potential offsetting projects.	The Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) in the United States is a federal government group that estimates the social cost of carbon dioxide emissions. The IWG used three Integrated Assessment Models to estimate the cost of carbon dioxide emissions and arrived at a High Impact Estimate of roughly £150/tCO_2e by 2025. Although the models include the monetised damages in terms of reduced agricultural productivity, human health impacts, property damage from increased flood risk, and other costs associated with climate change, often it is not possible to fully capture the actual costs of carbon emissions for all damages. The Interagency Working Group recognises that their Social Cost of Carbon values are severe underestimates, but they are currently being used as the best available approach. The SCC signals what society should, in theory, be willing to pay now to avoid the future damage caused by incremental carbon emissions.

In lieu of an organisation conducting their own, more detailed, assessment of the marginal cost of abatement to represent the cost of reducing emissions on a built asset, best practice suggests using the central values of the UK Government's Marginal Abatement Cost curve, depending on the forecast year of emissions.

These costs can be found in "Annex 1: Carbon values in £2020 prices per tonne of CO_2".

5 STEP 2 SET PRICE CONTINUED

FIGURE 3:
The indicative cost of carbon credits and carbon cost models (based on 2024 values)



6 STEP 3 SELECT SUITE OF PROJECTS

6.1 MINIMUM REQUIREMENT APPROACH: PRINCIPLES OF VOLUNTARY OFFSETS

Once a science-based decarbonisation pathway has been followed to reduce emissions in line with the net zero hierarchy, any residual emissions can be voluntarily offset using the principles included below.

Voluntary offsetting refers to the purchase of carbon credits by projects on a voluntary basis, rather than to fulfil legally binding emissions reduction obligations like emissions trading or carbon taxes. These credits can be acquired from a variety of sources, including public and private international crediting mechanisms, as well as domestic crediting mechanisms.

WHAT IS A CARBON OFFSET?

The terms carbon offset and carbon credit are used interchangeably, though they can mean slightly different things.

- Carbon offset emission reductions or removals by one entity can be used to compensate (offset) emissions from another entity.
- A carbon offset credit refers to the transferable instrument certified by government or independent certification bodies to represent an emission reduction of one metric tonne of carbon dioxide equivalent. These credits can be purchased by an organisation to balance their emission outputs through investment in projects that demonstrate additionality and remove, reduce or avoid emissions elsewhere. Any carbon offset credit bought must be 'retired' in a registry on behalf of a built asset in order for the related reduction / removal to be claimed towards GHG reporting goals.

Carbon offset credits must meet the following principles in order to safeguard the environmental integrity, or 'quality', of the carbon offset credit. These are the same as the ICVCM's CCPs. The below table has been adapted from this report. The CCPs represent a set of rigorous thresholds on disclosure and sustainable development. The UK Voluntary Carbon Markets Forum are founding sponsors of the ICVCM, and the Centre for Climate Change's report on Voluntary Carbon Markets and Offsetting encourages existing standards to align with ICVCM CCPs.

6 STEP 3 SELECT SUITE OF PROJECTS CONTINUED

PRINCIPLE	DESCRIPTION
A GOVERNANCE	
1 EFFECTIVE GOVERNANCE	The carbon-crediting program shall have effective program governance to ensure transparency, accountability, continuous improvement and the overall quality of carbon credits.
2 TRACKING	The carbon-crediting program shall operate or make use of a registry to uniquely identify, record and track mitigation activities and carbon credits issued to ensure credits can be identified securely and unambiguously.
3 TRANSPARENCY	The carbon-crediting program shall provide comprehensive and transparent information on all credited mitigation activities. The information shall be publicly available in electronic format and shall be accessible to nonspecialised audiences, to enable scrutiny of mitigation activities.
4 ROBUST INDEPENDENT THIRD-PARTY VALIDATION AND VERIFICATION	The carbon-crediting program shall have program-level requirements for robust independent third-party validation and verification of mitigation activities.
B EMISSIONS IMPACT	
5 ADDITIONALITY	The greenhouse gas (GHG) emission reductions or removals from the mitigation activity shall be additional, i.e., they would not have occurred in the absence of the incentive created by carbon credit revenues.
6 PERMANENCE	The GHG emission reductions or removals from the mitigation activity shall be permanent or, where there is a risk of reversal, there shall be measures in place to address those risks and compensate reversals.
7 ROBUST QUANTIFICATION OF EMISSION REDUCTIONS AND REMOVALS	The GHG emission reductions or removals from the mitigation activity shall be robustly quantified, based on conservative approaches, completeness, and sound scientific methods.
8 NO DOUBLE COUNTING	The GHG emission reductions or removals from the mitigation activity shall not be double counted, i.e. they shall only be counted once towards achieving mitigation targets or goals. Double counting covers double issuance, double claiming, and double use.
C SUSTAINABLE DEVELOPMENT	
9 SUSTAINABLE DEVELOPMENT BENEFITS AND SAFEGUARDS	The carbon-crediting program shall have clear guidance, tools and compliance procedures to ensure mitigation activities conform with or go beyond widely established industry best practices on social and environmental safeguards while delivering positive sustainable development impacts.
10 CONTRIBUTION TO NET ZERO TRANSITION	The mitigation activity shall avoid locking-in levels of GHG emissions, technologies or carbon-intensive practices that are incompatible with the objective of achieving net zero GHG emissions by mid-century.

TABLE 1: Carbon offsetting principles as defined by the ICVCM

Following the publication of the ICVCM's 'Core Carbon Principles, Assessment Framework and Assessment Procedure' (January 2024), carbon-crediting programmes can now apply to the ICVCM for assessment against the criteria and requirements of the CCPs. Carbon-crediting programmes that meet the Integrity Council's criteria will be classified as CCP-Eligible, through which carbon credits from CCP-Eligible programmes can be labelled as CCP-Approved.

Alongside the programme-level requirements, the ICVCM have added category-level requirements. Categories are groupings of different types of carbon credits based on how they reduce or remove carbon emissions. This includes categories such as wetland and marine ecosystem restoration/ management, forestry sequestration, biochar, and enhanced weathering. The new category-level criteria and requirements address the methodological and related rules of a carbon-crediting programme.

Overall, for a carbon credit to be CCP-Approved it must prove eligibility and validity at both programme and category level; a process aimed at improving the integrity and robustness of assessment compared to that previously seen within the voluntary carbon market.

Nevertheless, it remains that there is a range of 'quality' in the projects supported by these standards, so purchasers of offset credits are encouraged to evaluate what they are purchasing in the information box on this page.

CORE CARBON PRINCIPLES

For a detailed list of the programme requirements for effective governance, tracking, transparency, robust independent third-party validation and verification, refer to pages 54-57 of the 'Core Carbon Principles, Assessment Framework and Assessment Procedure'.The CCPs and their accompanying documents will be continually improved by the Integrity Council. It is expected that the next iteration of the CCPs will be published in 2025, for implementation to begin in 2026. The Assessment Framework provides an outline of which CCP criteria will be addressed in the next iteration and what new requirements will be included. When carbon-crediting programmes update their rules to align with the CCPs' Assessment Framework, and therefore market best practice, the collective ambition of standards in the market will be raised.

RESPONSIBLY OFFSETTING

When purchasing offset credits, it is important to treat them like any other financial investment and approach them with caution. To mitigate risk, offset buyers should have principles, strategies, or policies on offsetting in place, and should establish internal governance processes.

To ensure that risks are balanced with the benefits, offset purchasers are encouraged to challenge the proportion of money directly contributing to project delivery, or going back to the community, versus any profits taken by intermediaries. Independent verification may be necessary to ensure that the offset activities are credible, through activities such as independent spot checks and visits to project sites.

DOCUMENTS TO REVIEW

There are a number of documents that can be reviewed to establish an internal due diligence process. These should be available for all projects, irrespective of the standard that they are assessed against, and can be often obtained through links attached to project/carbon credit entries on the registry (e.g. Gold Standard Registry, Puro Earth Registry [document request required], Verra Verified Carbon Standard Registry [account required]):

- Project Design Document (PDD), which includes project details, calculation methodology, monitoring plans, etc
- Reports issued under regular reporting cycles (if available)
- Independent consultants' reports issued for the project sponsor (if available)
- Original methodology that the verification process was based on (if available)

ITEMS TO CONSIDER

It is also important to check the vintage of the carbon offset credit. Vintage refers to the year an emission reduction or removal occurred, or an offset credit was issued. Some projects will issue offsets every year, while some will issue offsets in multi-year increments. It is recommended that carbon offset credits are purchased with a vintage of the same year, or +/- 5 years from the point of GHG emissions.

Red flags to look out for might include issues such as a lack of transparency, insufficient project monitoring, illogical calculation methodologies, mature vintages, or increased risks of double counting.

When reviewing these documents, it is important to take time to assess them thoroughly and not rely solely on star ratings or the project promoter's documentation.

6 STEP 3 SELECT SUITE OF PROJECTS CONTINUED

6.2 MINIMUM REQUIREMENT APPROACH: OFFSET TYPOLOGIES

There are different types of voluntary offsets, which has led to carbon offset credit projects being defined by a set of categories. These categories may include the geographical location or the form of carbon balancing: avoidance, reduction or removal. By understanding the different offset typologies, organisations can make informed decisions when selecting and investing in offset projects that align with their own values and sustainability goals as part of their fulfilment.

Introduction

Many projects, companies, organisations, and financial institutions have started to adopt the Oxford Offsetting Principles as the basis for their offsetting strategies, recognising their importance in ensuring the integrity and effectiveness of offsetting efforts in achieving a net zero future.

According to the Oxford Offsetting Principles, most offsets available today are credits that avoid emissions, or reduce emissions without storage. Examples of these credits include REDD+ (reducing emissions from deforestation and forest degradation while supporting conservation), fuel switching and renewable energy. While these activities are crucial in achieving global net zero goals, the Oxford Offsetting Principles emphasise the need to ramp-up the use of removals offsets, which remove carbon directly from the atmosphere.

Carbon removal strategies that have a higher risk of reversal, as offered by nature-based solutions, can be used as part of a blended approach to offsetting, while options with a lower risk of reversal are being developed at scale. Nature-based solutions like reforestation carry the risk of reversal from threats such as disease and fire, which can reduce the resilience of natural ecosystems. At the end of a tree's life, most of the CO_2 sequestered gets released back into the atmosphere when the wood is oxidised as a result of combustion or decomposition, thereby losing any emissions removal benefit that it once offered. For this reason, tree planting is currently considered a removal with a higher risk of reversal .

Durable storage methods, such as injecting CO_2 into geological reservoirs or mineralising carbon into stable forms, still require development, verification and scaling. Increasing demand for durable storage technologies today sends a clear market signal to increase the supply and enable them to be developed at scale. Ultimately, the Oxford Offsetting Principles state that 100% of offsets should be invested in carbon removals with long-lived storage by 2050.

The taxonomy of carbon offset credits and their permanence, i.e., risk of reversal and level of durability, are included in Figure 4.

Avoidance and Reductions

As shown in Figure 4, emissions reductions can be divided into three general categories. The first is avoided or reduced emissions from the geosphere. This would include replacing fossil fuels with renewable energy or improving energy efficiency. The second category is avoiding or reducing emissions from the biosphere, and this includes preventing the damage and degradation of ecosystems and their soils and vegetation. The final category is reducing emissions from the geosphere by using carbon capture and storage (CCS) on industrial point sources or fossil-fuelled power stations.

The geosphere and biosphere are key for the reduction and removal of emissions. The geosphere is the interior and surface of the earth, made up of rocks, minerals, the abiotic parts of soils, and the skeletons and fossilised remains of once-living organisms. The biosphere consists of the region of Earth's surface where life is supported in ecosystems, e.g., woodlands, grasslands, wetlands, marine habitats, and soils. Emissions can be reduced from the geosphere and biosphere or removed from the atmosphere and stored in the geosphere and biosphere.

Removals

To rebalance carbon sources and sinks in the long run, durable carbon stores with a lower risk of reversal are necessary. Figure 4 shows that carbon removal can be broadly grouped into two categories.

1. Firstly, carbon can be removed to the biosphere by increasing the carbon stored in the biosphere by enhancing soil carbon on agricultural land or through the restoration of healthy ecosystems. It is important to note that the biosphere already "passively" absorbs carbon without any active human intervention. This occurs through carbon dioxide fertilisation (the speeding up of photosynthesis due to higher CO_2 concentrations) and other indirect effects of past emissions. Genuine carbon removal to compensate for ongoing emissions must be additional and not include this passive carbon uptake. Additionality means that a mitigation activity would not have happened without carbon credits creating the incentive to do so. Additionality is key to ensure the integrity of carbon offsets.
2. The second category of carbon removal and storage is the extraction of carbon dioxide from the atmosphere and storage of this carbon in the geosphere. This can be done through direct air capture with geological storage (DACCS) or converting atmospheric carbon into rock through remineralisation.

FIGURE 4:
Taxonomy of carbon offset credits, as per Oxford Principles for Net Zero Aligned Carbon Offsetting.

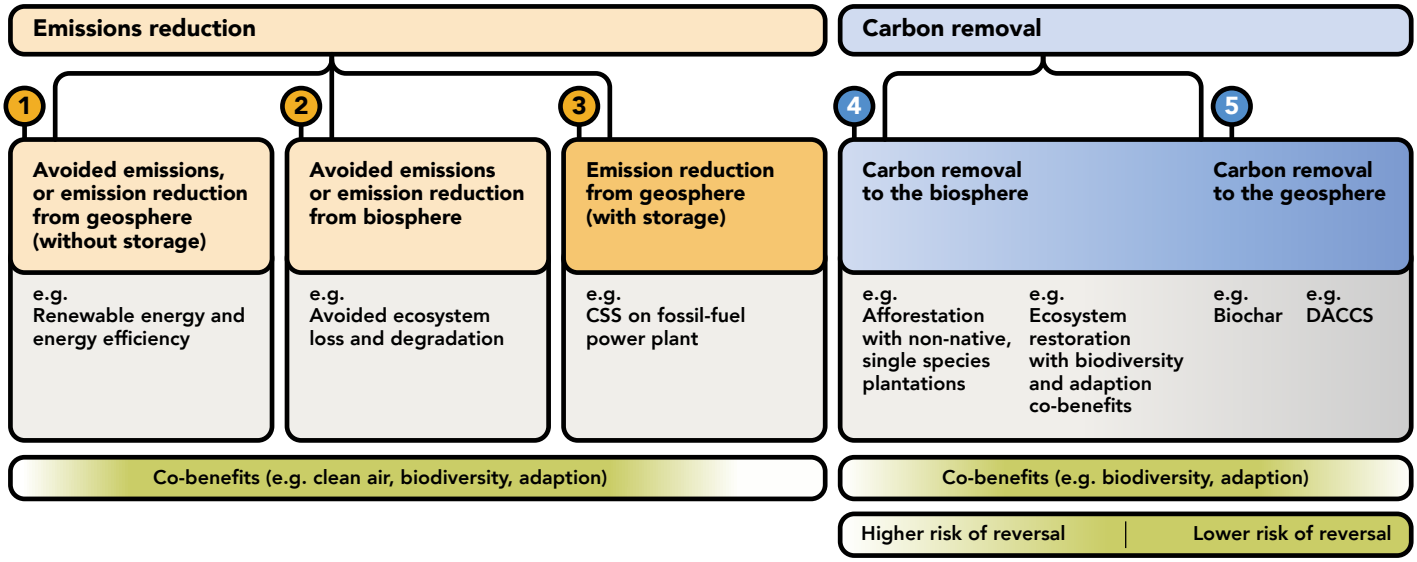
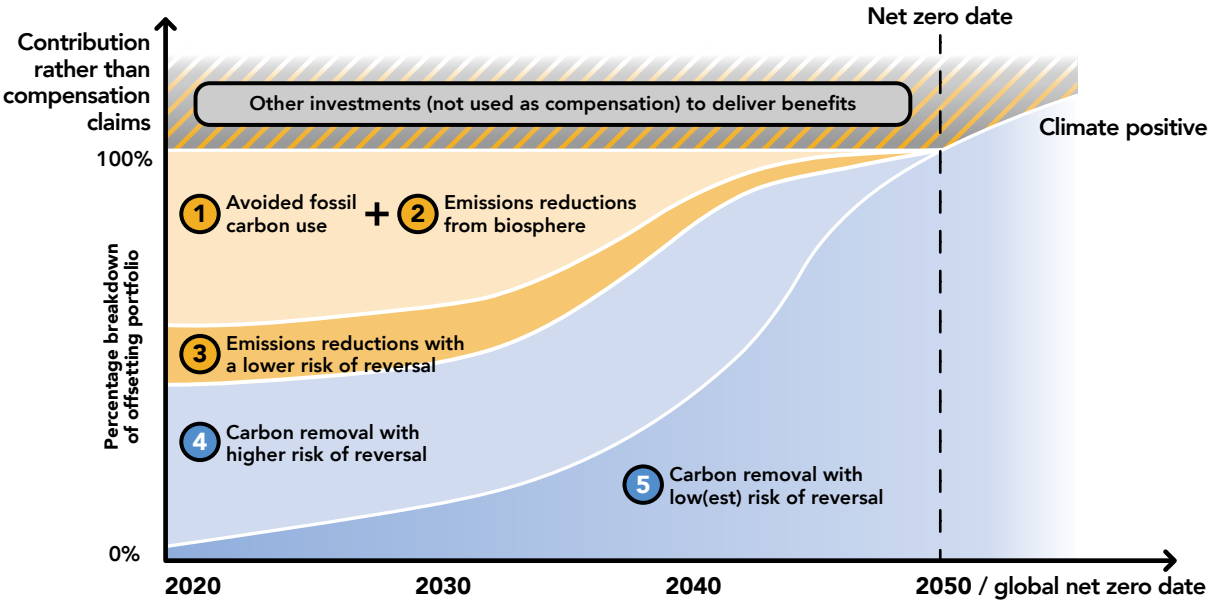


FIGURE 5:
Illustrative breakdown of net zero aligned carbon offsetting trajectory, Oxford Offsetting Principles.



While switching to 100% carbon removal offsets may not be feasible immediately, the proportion should be gradually increased in line with the indicative graph in Figure 5. This can be used to develop an offsetting strategy that changes over time.

SUMMARY

Organisations purchasing offsets should develop an offsetting strategy that aligns with the Oxford Offsetting Principles.

6 STEP 3 SELECT SUITE OF PROJECTS CONTINUED

Nature-based, Technological and Hybrid Options

Carbon offset projects can be categorised by whether the offset activity is nature-based, technological-based, or a hybrid of both. Nature-based solutions involve biological sequestration, such as planting trees, while technological solutions involve accelerating natural reactions or chemical processes, such as Direct Air Capture with Carbon Storage (DACCS). Hybrid solutions combine natural and engineered approaches, as seen in Bioenergy Carbon Capture and Storage (BECCS).

At present, the most prevalent removals offsets are nature-based solutions, which provide opportunities for climate resilience, improved air quality and wider benefits as well as carbon sequestration.

Technological methods are still developing and are yet to reach the market at scale. However, there are opportunities to transition and gradually increase the proportion of removals through the adoption of an internal carbon price (Step 2) and developing a transition fund (Section 6.3).

Domestic and International

Domestic offsetting refers to the investment and purchase of carbon offset credits within the United Kingdom. Despite the quantity of UK offsets increasing over recent years, availability remains scarce. Many existing offsetting opportunities still involve investment in projects located internationally – mostly in Asia, Africa and South America.

Domestic/UK Offsetting

The Woodland Carbon Code and Peatland Carbon Code are programs supported by the UK Government. They avoid using terms like "carbon credits" or "offsets" because they don't fully satisfy all the "additionality" requirements identified in the Core Carbon Principles in Table 1, i.e. additional finance has enabled more carbon sequestration than would otherwise have happened under existing legal, financial and business circumstances. To comply with the UK Environmental Reporting Guidelines, domestic carbon units should be reported separately from international carbon credits as Woodland and Peatland Units can only be used to 'offset' emissions generated in the UK.

The **Woodland Carbon Code** was established in 2011 as the UK government-backed standard for quantifying emissions reductions from woodland and forestry projects. Projects must demonstrate successful woodland establishment, with tree growth and sequestration rates initially assessed at year five, then every ten years (as a minimum) thereafter.

The **Peatland Code** was established in 2018, designed specifically for peatland restoration projects. Peatlands are naturally waterlogged systems which slow plant decomposition to the extent that dead plants, containing carbon removed from the atmosphere by photosynthesis, accumulate to form a carbon-store in the form of peat.

As of May 2023, the Woodland Carbon Code claimed to have 2,179 Woodland Carbon Units (WCU) available to sell, but quotes "there are very few WCU available" (1 unit is equivalent to 1 tCO_2e sequestered). Peatland Carbon Units are not currently available under the UK Peatland Code, as these units can only be obtained after a project has been verified, which takes place 5 years after the restoration process has occurred.

Other UK-sourced credits are available from international standards such as Verra. **Retrofit credits** may be used to unlock additional funding into social housing retrofits by verifying the emission reductions and social value.

Given the shortage of offsets available in the UK, organisations seeking to offset their emissions through domestic programs like the Woodland Carbon Code and Peatland Carbon Code may face limited options. They may need to consider other international standards in the near-term and plan 5+ years into the future to purchase Pending Issuance Units which offer 1 tonne of CO_2 of predicted sequestration in the future, as the sequestration is not yet guaranteed. Further details on these future units are provided in the appendix.

International Credits – Global South

Investing in international credits in the global south can help to achieve a just transition to global net zero emissions and transfer resources to low-income countries that disproportionally face climate impacts despite their low emissions. Although the price of these credits can be lower than UK credits, and there are more available on the voluntary carbon market, this does not necessarily imply poor quality. Rather, it may reflect lower costs in developing countries.

SUMMARY

To support a just transition to net zero globally, organisations should continue to support projects available internationally. However, increasing availability locally, or nationally, will further unlock the UK's path to net zero.

6 STEP 3 SELECT SUITE OF PROJECTS CONTINUED

Minimum Requirements: Offset Typologies Summary

The diagram below (Figure 6) provides an example of how an offsetting approach for a given built asset, or group of assets, might vary over time to align with the Oxford Offsetting Principles. A suite of offsetting projects should be selected, which deliver a minimum of 50% removal credits by 2025 and increase the percentage of removals with storage with a lower risk of reversal to 30% by 2040. A strategic approach should be taken to review risk appetite and due diligence procedures should be conducted to consider the right blend of projects for an organisation, based on domestic vs international, and wider strategic aims.

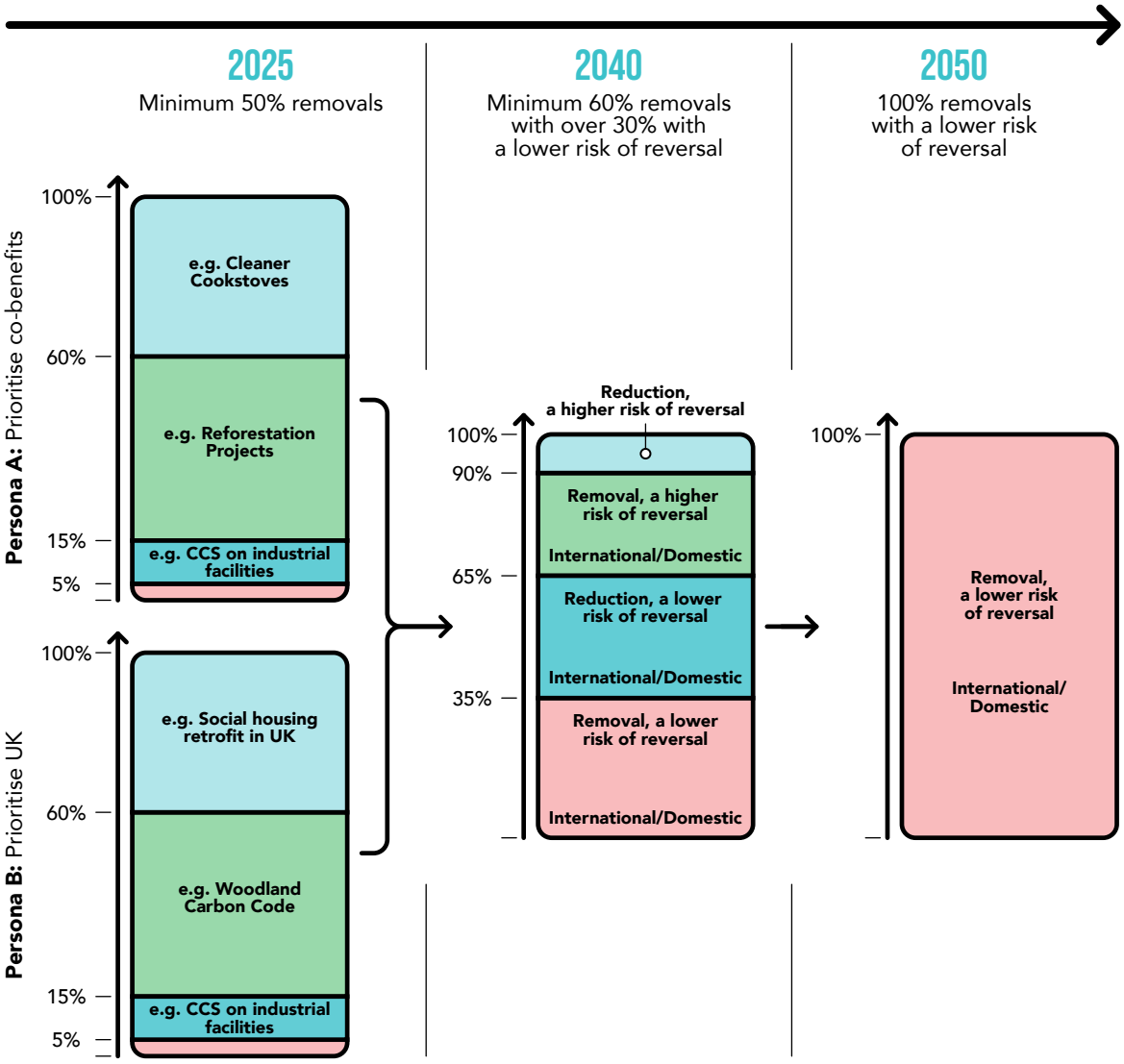


FIGURE 6: Example blend of offsetting projects. The blend varies over time in line with Oxford Offsetting Principles.

6.3 GOOD PRACTICE AND LEADING APPROACH: TRANSITION FUND

By setting an appropriate internal carbon price in Step 2, additional finance can be used to invest in projects that go beyond net zero and support wider sustainability outcomes. This finance, which is separate and additional to funds put aside for carbon offsetting, can be termed a "transition fund".

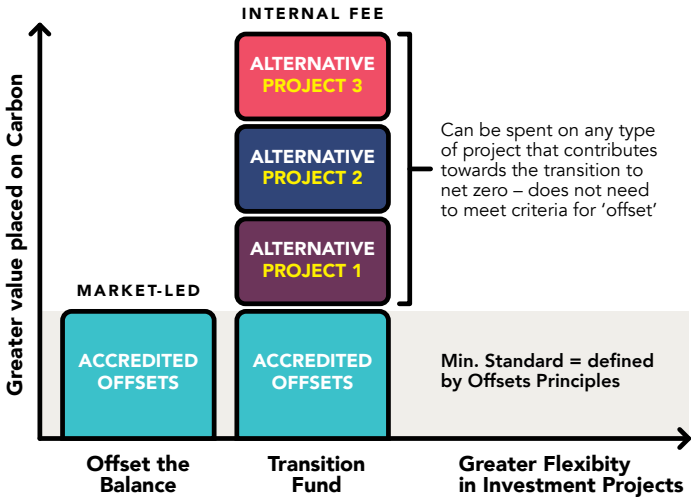


FIGURE 7:
Diagram demonstrating how an Internal Fee mechanism can be used to develop a transition fund.

Example Projects Funded by a Transition Fund

The strategic objectives for the transition fund should be explored in Step 1 to ensure the approach is in line with an organisation's wider prioritisation of co-benefits and climate ambitions. The chosen projects for the transition fund do not need to meet the principles listed in Table 1, nor be verified through an approved carbon standard as they cannot be used in isolation to make a net zero claim. However, organisations should provide a transparent narrative on how the funds were invested and quantify the outcomes as part of the project's voluntary reporting disclosures.

Financing the development of carbon removals with a lower risk of reversal in line with the Oxford Offsetting Principles is an opportunity for the transition fund to support and scale such projects through further research and/or credit development.

Carbon insetting is when a project reduces their emissions through investment in initiatives within their own value chain. An example of this could involve the investment in research and development that accelerates the reduction of emissions within the steel industry or within the project team to drive decarbonisation. The transition fund can also be utilised to invest in projects of high social or biodiversity value. For example, while accredited offsets may not be available for retrofitting schools in the local area at present, this investment can still lead to emissions reductions and enhance the economic, social, and environmental wellbeing of local residents. Similarly, projects focused on significant biodiversity value can offer complementary carbon removal potential, further aligning with the fund's objectives. By investing in some of these example projects, the transition fund can support initiatives that deliver multiple benefits and contribute to a sustainable future.

Leading Approach

A growing number of organisations are considering pooling their funds to drive climate action. They may want to combine their Internal Fee funds with another built asset project, whether within the same organisation or separate ones. This approach offers benefits, such as reducing management fees and providing larger investment opportunities. However, appropriate governance and reporting are necessary for combining these funds and ensuring they are accountable for the outcomes of their investment.

7 STEP 4 REVIEW, PURCHASE & DISCLOSE

Once the suite of projects has been selected, to ensure impacts are continually being maximised, the strategic objectives should be reviewed regularly. The suggested minimum frequency is annually.

Once investment in carbon offsetting and/or a transition fund is delivered, owners of built assets can help to build trust with stakeholders and demonstrate their commitment to responsible climate action by implementing robust carbon reporting and governance practices. Reporting and governance of both Internal Carbon Pricing and offsetting activities are essential for ensuring transparency, credibility, risk management, and continuous improvement of the built environment sector.

Although not exhaustive, the template questions and topics scheduled below should be used as a minimum to support public disclosures when making any net zero claims. This should be publicly available and in an accessible format. It can also be used to supplement existing reporting processes (whole life carbon assessments) and support other frameworks, such as CDP and TCFD. If an organisation has requested the services of an offset brokerage or consultancy service relating to offsetting, responses to this template can be issued as part of the expected deliverables.

FOCUS AREA	KEY PROMPTS
CLIMATE ACTION	■ What are the climate ambitions? ■ How were the climate ambitions determined? ■ How were the climate ambitions communicated and instructed to the wider team?
OFFSETTING STRATEGY	■ What was the original offsetting strategy? ■ How does the offsetting strategy align to the climate ambitions? ■ What process did you follow to develop the offsetting strategy? ■ How did the offsetting strategy change through the delivery phase?
GOVERNANCE	■ How was the offsetting process managed? ■ What level of competence and expertise were required to manage this process? ■ How was the approval process managed prior to offsets being retired? ■ How was the offsetting fund governed?
RISK MANAGEMENT	■ How were offsetting risks identified throughout the life of the built asset? ■ How were offsetting risks incorporated with the wider risk management framework? ■ How were offsetting risks addressed and mitigated? ■ What offsetting risks currently remain open? ■ What offsetting lessons have been learned?
INTERNAL CARBON PRICE Repeat disclosure for each type of ICP used)	■ What type of internal carbon price was used (e.g. Internal Fee, Shadow Price, Implicit Price)? ■ How was this ICP applied? ■ How was the ICP determined? ■ How frequently was the ICP reviewed? ■ How did the ICP increase or evolve over time?

7 STEP 4 REVIEW, PURCHASE & DISCLOSE CONTINUED

FOCUS AREA	KEY PROMPTS
EMISSIONS OFFSET	■ What is the reporting period for these emissions? ■ How many residual emissions is the asset responsible for during the reporting period? ■ How were the emissions offset calculated? ■ When did these emissions occur? ■ How have these emissions been documented?
OFFSETTING APPROACH (Repeat disclosure for each type of offset purchased)	■ What is the name of the project with which these credits were retired? ■ What are the project details of these credits? ■ From which country did the offsets originate (e.g. international/domestic)? ■ What was the typology of offsets retired (e.g. avoidance/reduction/removal)?
	■ What quantity of credits were purchased and retired? ■ What was the cost per credit (excluding VAT)? ■ What vintage were these credits?
	■ Which carbon offset standard certified this offset? ■ What is the registry link to the purchase these offsets? ■ Where is the documentation justifying the credit's compliance with measuring, reporting and verification processes? ■ How has this offset provided wider sustainability outcomes? ■ Were measures taken to ensure avoidance of infringement on the human and legitimate tenure rights of others? ■ Is the carbon-crediting programme CCP-Eligible? ■ Are the carbon credits purchased CCP-Approved?
	■ What independent third party has rated this credit? ■ When was this rating assessment carried out? ■ What rating has this credit been assigned by the third party?
	■ Who were the third-party organisations involved in the transaction and retirement of the offsets (e.g. Consultants, Brokers, Rating Agencies)? ■ What percentage of the cost to retire each credit is attributed to third parties? ■ What percentage of the cost to retire each credit is passed to the original credit supplier?
ADDITIONAL INVESTMENT – TRANSITION FUND (Repeat disclosure for each type of additional investment)	■ What is the additional initiative that the organisation has provided investment for? ■ How was the selection of this initiative made? ■ What are the measurable outcomes of this investment? ■ How has this investment driven climate action? ■ How has this investment provided wider sustainability outcomes? ■ Who has benefitted from this investment?

8 GLOSSARY

TERM	DESCRIPTION
ADDITIONALITY	Additionality describes the situation where an action results in an activity or intervention that otherwise would not have occurred had the action not taken place (i.e. additional relative to business-as-usual). In the context of carbon offsetting, additionality is achieved where greenhouse gas emissions reductions/removals occur that would not have happened in the absence of the investment in a carbon offsetting project.
ANTHROPOGENIC	Anthropogenic is of, relating to, or resulting from the influence of human beings on nature.
AVOIDANCE CREDITS	Avoidance Credits are certified when an offset project has successfully prevented any Greenhouse Gas (GHG) emissions which most likely would have happened, had it not been for that action, in the base case scenario.
BEYOND VALUE CHAIN MITIGATION	Mitigation action or investments that fall outside an organisation's value chain, meaning beyond their scope 1, 2 and 3 emissions. An actor may wish to set a target for its beyond value chain mitigation efforts that complements its organisational net zero strategy.
BIOGENIC CARBON	Biogenic Carbon is the carbon stored in biological materials, such as plants, soil, and timber. This carbon is removed – or sequestered – from the environment through natural processes such as photosynthesis.
BIOMASS	Biomass is material of biological origin excluding material embedded in geological and/or fossilized formations.
CARBON CREDITS	Tradeable certificates that represent the mitigation (reduction or removal) of a specified amount of greenhouse gas emissions. Credits are often used to offset emissions but can be acquired and retired without use as an offset as a form of extra beyond value chain mitigation.
CARBON DIOXIDE EQUIVALENT (CO_2e)	CO_2e or Carbon Dioxide Equivalent is a unit used to equivalate the emissions of other greenhouse gases (GHGs) to emissions of carbon dioxide (see Global Warming Potential). It also allows the impact of activities that result in the emissions of a variety of different GHGs to be described by a single number.
CARBON EMISSIONS	In the context of sustainability, Carbon Emissions is used as a collective term to describe the emissions of any GHGs.
CARBON NEGATIVE/ CARBON POSITIVE	Carbon Negative / Carbon Positive are terms used interchangeably where all related Greenhouse Gas (GHG) emissions have been reduced in line with science-based target as a minimum and the quantity of responsible offsets procured exceeds the residual emissions (i.e. net emissions lower than zero).
CARBON NEUTRAL	Carbon Neutral is where the sum of all related Greenhouse Gas (GHG) emissions is balanced with responsible offsets. Residual emissions are not limited prior to offsetting.

GLOSSARY CONTINUED

TERM	DESCRIPTION
CARBON OFFSETS	Carbon Offsets are certifiable and transferable units of emissions, termed credits, which can be purchased by an entity to balance their emission outputs through investment in additionality projects that remove (preferred) or reduce emissions elsewhere.
CARBON REMOVAL	Anthropogenic activities that remove CO_2 from the atmosphere and durably store it in geological, terrestrial, or ocean reservoirs, or in products. It includes existing and potential anthropogenic enhancement of biological or geochemical CO_2 sinks and direct air carbon dioxide capture and storage (DACCS), but excludes passive CO_2 uptake not directly brought on by ongoing human efforts. As a result, carbon uptake that would have occurred anyway in the absence of any active ongoing human intervention (for example, enhanced vegetation growth by CO_2 fertilisation due to past global emissions) is not categorised as carbon removal for the purposes of reaching net zero.
CARBON SEQUESTRATION	Carbon Sequestration is the process by which carbon dioxide is removed from the atmosphere and stored within a material.
CARBON DIOXIDE EQUIVALENT (CO_2e)	CO_2e or Carbon Dioxide Equivalent is a unit used to equivalate the emissions of other greenhouse gases (GHGs) to emissions of carbon dioxide (see Global Warming Potential). It also allows the impact of activities that result in the emissions of a variety of different GHGs to be described by a single number.
CARBON EMISSIONS	In the context of sustainability, Carbon Emissions is used as a collective term to describe the emissions of any GHGs.
CARBON NEGATIVE/ CARBON POSITIVE	Carbon Negative / Carbon Positive are terms used interchangeably where all related Greenhouse Gas (GHG) emissions have been reduced in line with science-based target as a minimum and the quantity of responsible offsets procured exceeds the residual emissions (i.e. net emissions lower than zero).
CIRCULAR ECONOMY	Circular Economy is based on the principles of designing out waste and pollution and keeping products and materials in use at their highest value whilst regenerating nature e.g. refurbishment, reuse, design for adaptability/deconstruction.
CLIMATE CHANGE	Climate Change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas.
DECARBONISATION	Decarbonisation is the process of reducing the net amount of Greenhouse Gas (GHG) emissions released to the atmosphere.
DURABILITY	Durability refers to the planned storage duration of CO_2e, once removed from the atmosphere, or the risk of reversal before that time is up.

GLOSSARY CONTINUED

TERM	DESCRIPTION
EMBODIED CARBON	Embodied Carbon or Life Cycle Embodied Carbon emissions of a product are the total GHG emissions and removals associated with its manufacture, transport, installation, maintenance, and end of life treatment.
EMISSIONS HIERARCHY	Emissions Hierarchy is where actions are prioritised according to their Greenhouse Gas (GHG) emissions reduction potential. The highest priority actions are those which reduce Greenhouse Gas (GHG) emissions directly through avoidance (e.g. energy efficiency), whereas the lowest priority actions include responsible offsetting.
EX-ANTE	Ex-Ante crediting is the issuance of carbon offset credits in expectation of future emission reductions.
EX-POST	Ex-Post crediting is the issuance of carbon offset credits that represent an emission avoidance, reduction or removal that has already occurred.
GHG PROTOCOL	GHG Protocol establishes comprehensive global standardized frameworks to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains and mitigation actions.
GREENHOUSE GAS (GHG)	Greenhouse Gases (GHG) are constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds.
GLOBAL WARMING POTENTIAL (GWP)	Some GHGs have a substantially higher GWP than carbon dioxide, meaning the same quantity of emissions has a greater impact to global heating. For example, methane's GWP is 25, meaning 1 tonne of methane trap 25x more heat than 1 tonne of carbon dioxide.
IPCC	The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.
INSETTING	Refers to organisations reducing their carbon footprint through investment in projects within their own value chains. This is done through the adoption of sustainable practices, such as decarbonising transportation, agroforestry and regenerative agriculture which seek to reduce, remove, and sequester emissions.
INTERNAL CARBON PRICE	An internally developed estimated cost of carbon emissions. Internal Carbon Pricing can be used as a planning tool to help identify revenue opportunities and risks, as an incentive to drive energy efficiencies to reduce costs, and to guide capital investment decisions.

GLOSSARY CONTINUED

TERM	DESCRIPTION
KYOTO PROTOCOL	Kyoto Protocol was an international treaty which extended the 1992 United Nations Framework Convention on Climate Change (UNFCCC) that commits state parties to reduce greenhouse gas emissions, based on the scientific consensus that (part one) global warming is occurring and (part two) that human-made CO_2 emissions are driving it.
NET ZERO	Net Zero is where all related Greenhouse Gas (GHG) emissions have been reduced in line with a science-based target which aligns with what has been determined to be necessary to stand a reasonable chance of limiting the global temperature increase to 1.5˚C above pre-industrial levels as a minimum. These residual emissions are subsequently responsibly offset to achieve a sum total of zero emissions.
NET ZERO HIERARCHY	This refers to the adherence to the Net Zero Carbon Buildings Framework with science-based decarbonisation pathways, which will be superseded by the Net Zero Carbon Buildings Standard.
OPERATIONAL CARBON	Operational Carbon are the GHG emissions arising from all energy consumed by a product in-use, over the product's whole life cycle.
OXFORD OFFSETTING PRINCIPLES	The Oxford Principles for Net Zero Aligned Carbon Offsetting is an essential resource to guide the design and delivery of voluntary net-zero commitments by government, cities, companies and individuals..
PARIS AGREEMENT	The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.
REDUCTION CREDITS	Reduction Credits are certified when an offset project has successfully net reduced its own Greenhouse Gas (GHG) emissions beyond what is required by Science Based Targets when considering a whole life cycle GHG assessment.
REMOVAL CREDITS	Removal Credits are certified when an offset project has successfully net removed Greenhouse Gas (GHG) emissions from the atmosphere when considering a whole life cycle GHG assessment.
RESIDUAL EMISSIONS	Greenhouse gas emissions that remain after taking all possible actions to implement emissions reductions given current resources and technology.
RISK OF REVERSAL	Risk of reversal refers to the susceptibility of different storage methods to releasing GHGs back into the atmosphere.
SCIENCE-BASED TARGETS	Science-based targets provide a clearly defined pathway for governments, industries, companies and individuals to reduce Greenhouse Gas (GHG) emissions, to meet the goals of the Paris Agreement to limit global temperatures rises to 1.5˚C above pre-industrial levels.

GLOSSARY CONTINUED

TERM	DESCRIPTION
SOCIAL VALUE	Social Value in offsetting refers to the extent to which the projects respond to the interests or needs of individuals and wider society, often referred to as co-benefits. This can include increased access to nature, wellbeing and job creation.
UPFRONT CARBON	Upfront Carbon are the GHG emissions associated with materials and construction processes to create the product.
VINTAGE	Vintage refers to the year an emission reduction or removal occurred, or an offset credit was issued. Some projects will issue offsets every year, while some will issue offsets in multi-year increments.
VOLUNTARY CARBON MARKET (VCM)	Voluntary Carbon Market (VCM) are un-regulated markets where carbon credits are purchased, usually by organisations, projects or individuals, for voluntary use rather than to comply with legally binding emissions reduction obligations.
WHOLE LIFE CARBON	Whole Life Carbon emissions are the sum total of all the associated GHG emissions and removals, for the embodied, operational and disposal of a product through its whole life cycle.
ZERO CARBON	Zero Carbon is where there are no related Greenhouse Gas (GHG) emissions relating to a project, asset, or activity.

9 APPENDICES

9.1 UK SECTION 106 AGREEMENTS

Under the Town and Country Planning Act 1990, local authorities can use Section 106 Agreements (a legal agreement between an applicant seeking planning permission and the local planning authority) to claim a financial contribution from the developer in order to mitigate the impact of the new development. Often, this contribution is used to fund community projects that deliver environmental and social enhancements on a site near to the development.

It should be noted that new planning reforms are still due to be introduced at time of writing, with the government expected to replace Section 106 with an Infrastructure Levy, which would be paid by developers to local authorities. The new levy will be charged on the value of property when it is sold and applied above a minimum threshold, with levy rates and minimum thresholds being set by local authorities.

Section 106 Agreements should be treated as an entirely separate mechanism for driving decarbonisation in the built environment.

9.2 WOODLAND CARBON CODE

Any organisation seeking to claim carbon sequestration through afforestation on their own land must certify with the Woodland Carbon Code.

Woodland seeking certification must commit to a permanent land use change to woodland and to maintaining the woodland as a carbon sink.

There are two types of carbon units that can be issued for certified projects.

As it can take a significant number of years before a purchased PIU can be converted to a WCU, organisations seeking Net Zero claims or to report against national, or international accounting requirements will need to be aware of what can and cannot be stated if only purchasing PIUs.

CARBON UNIT	REPRESENTS	WHAT CAN THEY BE USED FOR?
WOODLAND CARBON UNITS (WCUS)	Ex-poste 1 tonne of CO_2 that has been sequestered in a verified woodland. The sequestration has been independently verified and guaranteed.	By organisations to compensate for their UK-based GHG emissions. Contribute directly to the UK's national targets for reducing GHG emissions. **Cannot** be used in compliance schemes, e.g. EU-ETS. **Cannot** be used for emissions outside of the UK, or emissions from international aviation or shipping.
PENDING ISSUANCE UNITS (PIUS)	Ex-ante 1 tonne of CO_2 of predicted sequestration – a 'promise to deliver'. The sequestration is not yet guaranteed.	Can be used by organisations to plan compensation against future UK-based emissions, i.e. plan their pathway to Net Zero. Can be used by organisations to make credible CSR statements in support of woodland creation. **Cannot** be used by organisations to report against their UK-based emissions until verified. **May** be used in claims of Net Zero, provided the vintage requirements of a removal within a 5-year future are met.

TABLE 2:
Woodland carbon code units

9.3 SCHEDULE OF CHANGES

In total, the updates to the Carbon Offsetting and Pricing Report 2023 include:

UPDATE DESCRIPTION	SECTION(S)
Updated references to ICVCM and Oxford Principles.	Introduction (Background).
The 'Oxford Offsetting Principles' revised guidance contains a change in terminology away from 'short-lived storage' and 'long-lived storage' to 'higher risk of reversal' or 'lower durability storage' and 'lower risk of reversal' or 'higher durability storage'. This recognises that durability and risk of reversal are on a continuum.	Minimum Requirement Approach: Offset Typologies.
Highlighting co-benefits. The revised Oxford Offsetting Principles emphasise the co-benefits of different storage and removal options, their additional emphasis is reflected in this updated guidance.	Minimum Requirement Approach: Offset Typologies.
Updated graphics. To reflect the terminology change to 'risk of reversal' and 'durability', and to include the co-benefits of different storage and removal options, several graphics have been updated based on the diagrams in the revised version of the Oxford Offsetting Principles.	Figure 4, Figure 5, Figure 6.
Detail added to 'Step 3 - Select suite of projects'. The publication of the ICVCM's Core Carbon Principles Assessment Framework and Procedure enabled an elaboration of the process for labelling carbon-crediting programmes and carbon credits as CCP-Eligible and CCP-Approved respectively.	Step 3 – Select suite of projects.
Updates to carbon prices, to follow HM Treasury Green Book and show a range of prices rather than a single figure.	Step 2 – Set Price (Setting an internal carbon price), Figure 3.
Additional definitions in glossary for: Beyond Value Chain Mitigation, Carbon Removal, Carbon Credits, Residual Emissions, Durability, Risk of Reversal.	Glossary.
Date updates and spelling corrections.	Throughout.
Other updated diagrams and figures.	Diagram 2, Figure 3.

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ADVANCING NET ZERO

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