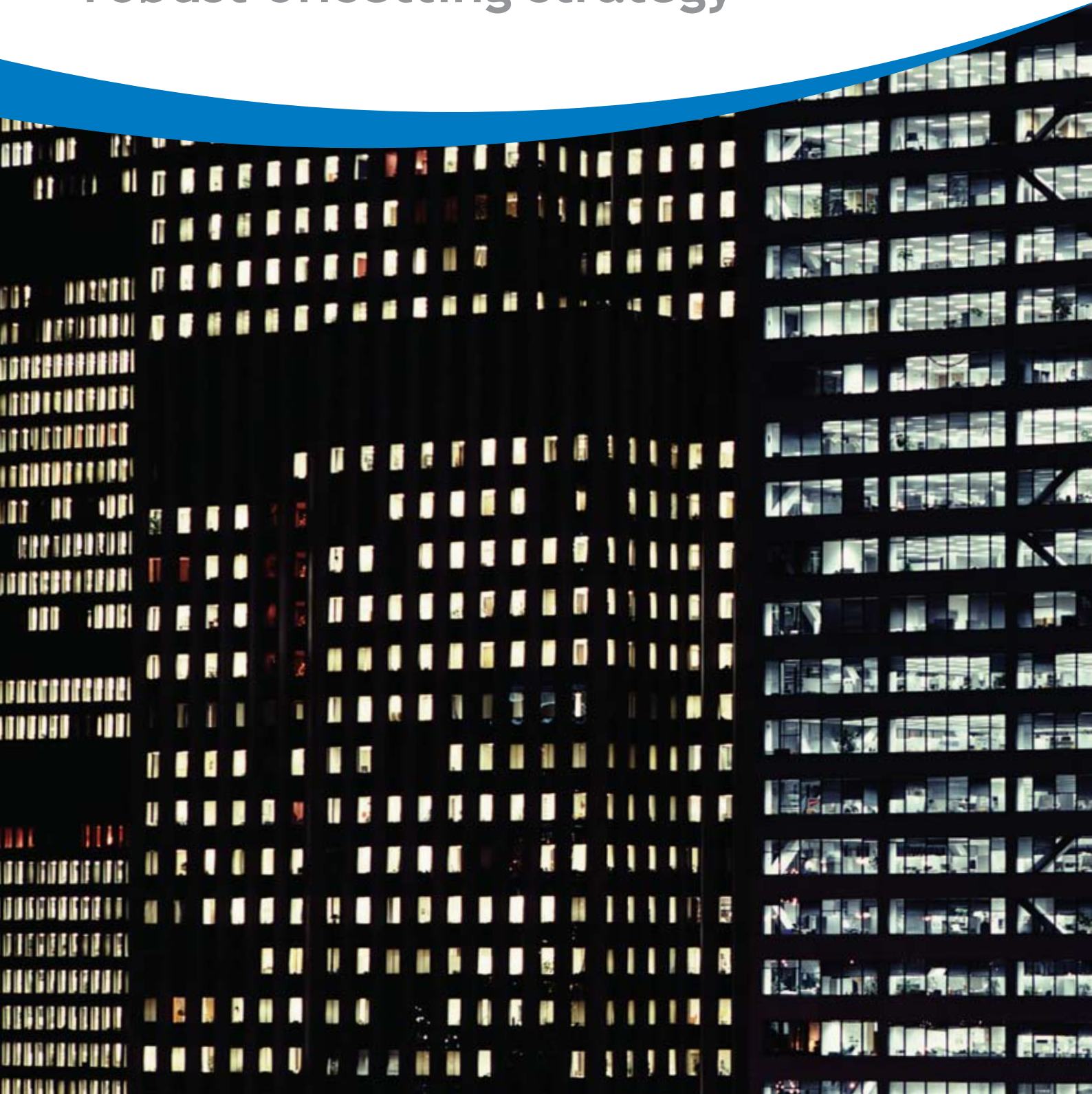


The Carbon Trust three stage approach to developing a robust offsetting strategy



Contents

This guide is divided into four sections.

Section 1 provides an overview of the carbon markets, looking at how they have evolved, how they are structured and puts the voluntary market in the context of the overall carbon market.

Section 2 introduces the concept of carbon offsets, their main characteristics and the standards against which they can be measured.

Section 3 explores the concept of carbon neutrality, indicating why an organisation might choose to become carbon neutral.

Section 4 is a step-by-step process designed to help organisations develop a robust offsetting strategy. It includes details of how to carry out the necessary due diligence to assess the integrity and credibility of offsets, and provides the knowledge and tools needed to have an informed discussion with offset providers.

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Preface

The voluntary carbon offset market has grown rapidly over the past two years as organisations have begun to use offsetting as a way of indirectly reducing their carbon emissions.

However, this market is largely unregulated and with voluntary offset providers offering a plethora of offset

and carbon neutral services, it is difficult to understand and to know, objectively, what is a good quality offset.

This guide will try to bridge that gap. It is intended to help organisations navigate the offset market and develop a robust strategy that takes into account all the issues faced by buyers of offsets and participants in carbon neutral schemes.

In our experience of working with companies across the UK on emissions reduction, the most cost effective and environmentally sound way to address an organisation's carbon footprint is to:

- ▶ **Firstly, focus on direct emissions**, reducing the in-house carbon footprint and creating bottom line savings by implementing all cost-effective energy efficiency measures. Where cost effective, opportunities to reduce the carbon intensity of energy supply by developing low-carbon energy sources such as on-site generation should also be explored
- ▶ **Secondly, look at reducing indirect emissions**, working with other organisations to reduce emissions (and cut costs) up and down the supply chain, and look for opportunities to develop new low-carbon products
- ▶ **Then, if appropriate, consider developing an offset strategy**, ensuring that only high quality offsets are purchased from verified projects that genuinely create emissions reductions.

Focusing on direct and supply chain emissions should deliver bottom line financial and carbon savings year-on-year. For those organisations considering buying offsets, this approach reduces the number of offsets that they might need to purchase.

The Carbon Trust can help organisations to navigate the offset market and provide advice on how to purchase good quality offsets, provided this is part of an overall emissions reduction strategy which includes direct and indirect emissions reductions.

Executive summary

Climate change is one of the greatest challenges of modern times. Most forward thinking organisations have already begun taking action to tackle climate change by reducing their carbon emissions.

Offsetting has emerged as an additional way for organisations to indirectly cut their emissions. Carbon offsets are generated from projects that reduce the amount of greenhouse gases entering the atmosphere. To qualify as an offset, the reductions achieved by a project need to be additional to what would have happened in the absence of the project, a condition defined as 'additionality'.

Carbon offsets (or carbon credits) can be used for compliance as well as for voluntary purposes. In the compliance market, offsets are acquired by organisations and governments to comply with their emissions reduction targets set under the Kyoto Protocol or other compliance initiatives (for example, the EU Emissions Trading Scheme). Equally, organisations around the world have started to use offsets as a voluntary way to reduce their carbon emissions indirectly. This has created a voluntary offset market commonly known as the offsetting market.

The voluntary offset market has seen rapid growth in the past two years, driven primarily by increasing public

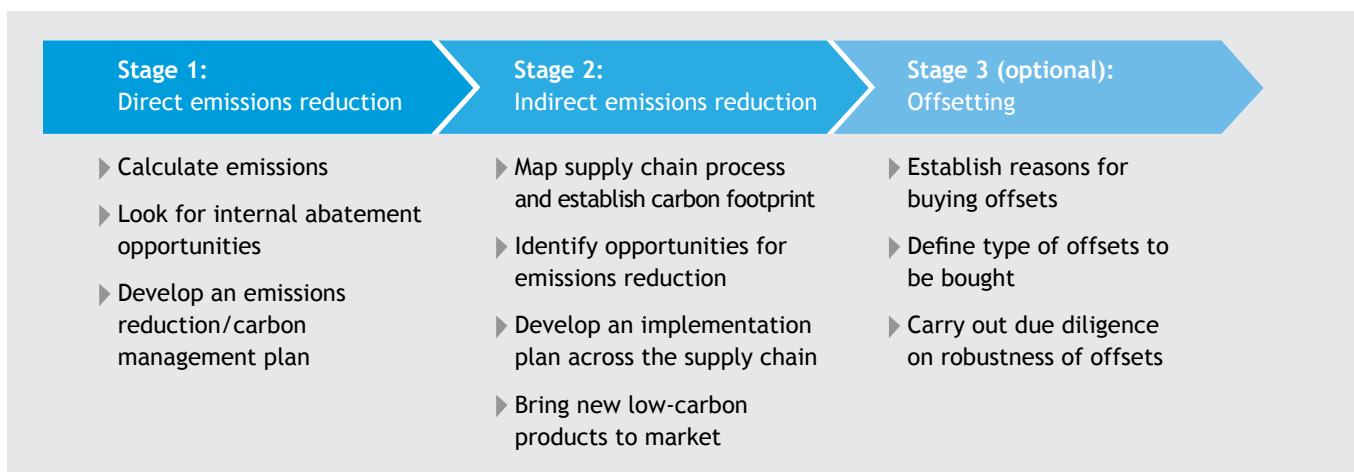
awareness of climate change. The concept of carbon neutrality, or the netting off of carbon emissions within a defined boundary, has emerged as an approach for some businesses wishing to demonstrate their commitment to emissions reduction.

There are risks associated with this approach. Using offsets could be an easy way to address an organisation's carbon footprint in the short term, but this strategy is only as good as the offsets acquired for those purposes. Addressing an organisation's own carbon emissions is likely to be a better overall approach than offsetting alone in the medium to long term.

There are a number of key challenges to address when offsetting emissions, such as calculating the organisation's carbon footprint, buying good quality offsets and communicating accurately what has been achieved to avoid the risk of reputational damage.

To overcome these challenges, the Carbon Trust has developed a three stage process to help organisations that wish to offset to do it robustly as part of an overall carbon management strategy.

Figure 1: The Carbon Trust three stage approach to developing a robust carbon management strategy



A robust carbon management strategy should focus on the first two stages – addressing an organisation’s direct and indirect emissions. There are a number of benefits in doing this, including:

- ▶ **Cost savings:** reducing energy bills as well as leading to savings in transport, waste and other operating costs within the organisation and its supply chain
- ▶ **Operational efficiency:** as a side benefit of improving energy and carbon efficiency
- ▶ **Increased revenues:** from exploiting opportunities to bring new low-carbon products and services to market
- ▶ **Mitigation of regulatory risks:** including Climate Change Levy (CCL), Energy Performance of Buildings Directive (EPBD), EU Emissions Trading Scheme (EU ETS) or any future legislation
- ▶ **Improved Corporate Social Responsibility and reputation:** from proactively making efforts to reduce carbon emissions.

After looking at their direct and indirect emissions, some companies may then decide to include offsetting as part of their overall carbon management strategy.

For this third stage, we provide a step-by-step guide on how to define that strategy, and how to identify the type of offsets to buy.

We highlight the pros and cons of offsets according to seven key categories:

- ▶ **Type of projects**
- ▶ **Standards used**
- ▶ **Project location**
- ▶ **Additional benefits**
- ▶ **Level of aggregation (credits from portfolio versus credits from individual projects)**
- ▶ **Provision of guarantees**
- ▶ **Labelling service offered by offset providers.**

The last step in the process is to identify and purchase good quality offsets. The Carbon Trust has developed a process with key questions to help organisations assess the validity of the offsets they are acquiring.

1 Carbon markets – putting the offset market in context

Development of the Kyoto Protocol

There is a growing consensus that climate change is one of the greatest challenges of modern times. Since the start of the industrial revolution, the volume and concentration of so-called 'greenhouse gases' (GHGs), has increased in the Earth's atmosphere. These gases trap heat within the atmosphere, and cause global mean temperatures to increase. This human induced global warming effect has produced changes to our climate which could have significant effects on our planet in the next decades.

The world is responding to this threat by taking global action to limit the emissions of GHGs into the atmosphere. The first step came in 1988 with the establishment of the Intergovernmental Panel on Climate Change (IPCC) to help governments across the world investigate and understand the science, issues and impacts of climate change, and build some international consensus on the nature of the problem. In 1992, the IPCC and the United Nations (UN) established the United Nations Framework Convention on Climate Change (UNFCCC).

This international treaty formally recognised the concern over climate change, and established non-legally binding targets to stabilise developed world greenhouse gas emissions at 1990 levels.

In 1997, the UNFCCC adopted the Kyoto Protocol, establishing legally binding targets for the developed world countries that ratified the protocol. It aims to reduce greenhouse gas emissions by an overall 5% below 1990 levels during the period between 2008 and 2012. To meet their targets, countries can either reduce their domestic emissions, or use the so-called 'flexible mechanisms' established by the Kyoto Protocol: Clean Development Mechanism (CDM), Joint Implementation (JI) or Emissions Trading. These mechanisms allow for the trading of carbon credits, or carbon emissions reduction units, which can be used for compliance purposes by parties that have legally binding targets.

Box 1: Kyoto Protocol 'flexible mechanisms'

Clean Development Mechanism (CDM)

CDM is based on the implementation of projects in developing countries that result in a net reduction of greenhouse gases (GHGs) entering the atmosphere. These projects receive emissions credits, or Certified Emissions Reductions (CERs), which can be used by developed countries with legally binding targets to achieve compliance. A condition for the issue of credits is that projects generate emissions reductions that are additional to what would have happened in the absence of the project, a condition referred to as 'additionality'. Emissions reductions under this mechanism need to be verified and certified by an authorised third party called the Designated Operational Entity (DOE). The DOE periodically verifies the reductions achieved by the project activity and provides written certification that the project activity has achieved the verified GHG reductions.

Joint Implementation (JI)

JI is based on the same principles as CDM, but operational in Annex I countries (developed countries with legally binding reduction targets under the Kyoto Protocol agreement). Emissions reduced by JI projects need to be additional in order to receive emissions credits called Emissions Reduction Units (ERUs). The ERUs generated by JI projects can be used by Annex I parties towards meeting their legally binding emissions targets.

Emissions trading

Emissions trading in the Kyoto Protocol is based on a cap-and-trade system where developed countries are allocated emissions allowances based on the emissions reduction target negotiated. Each allowance, called an Assigned Amount Unit (AAU), is equivalent to one metric tonne of CO₂. At the end of the compliance period each country has to hold an amount of AAUs equivalent to how much GHG it has emitted during the period. Countries which have reduced their emissions below their allocated allowances will be able to trade the surplus allowances to others that have exceeded their cap.

The compliance carbon market

The Kyoto Protocol created a market for carbon based on the trading of emissions reductions or emissions allowance units used for compliance purposes. The possibility of using trading as a cost-effective way to achieve emissions reduction targets has encouraged nations and groups of nations (eg the EU) to develop their own domestic trading mechanisms to help them meet their Kyoto targets.

Among these schemes the biggest is the European Union Emissions Trading Scheme (EU ETS), in operation since 1st January 2005.

Box 2: Why is emissions trading cost effective?

Emissions trading is a market-based approach that allows parties with environmental commitments to use instruments such as emissions allowances or credits to demonstrate compliance with their commitments. Using emissions trading, parties can decide whether they reduce their emissions internally, taking into account the costs of their internal abatement opportunities, whether they should buy credits or allowances from other parties, taking into account the price of those allowances or credits, or decide to abate their emissions beyond what is required, generating a surplus of emissions reductions that could be sold to other parties which are short of their commitment. By providing a market-based mechanism with price signals, parties can take decisions on which is the most cost-effective strategy to follow to achieve their environmental obligations.

EU Emissions Trading Scheme (EU ETS)

Based on a cap-and-trade system (see Box 3), the EU ETS is by far the largest emissions trading scheme in the world. It covers around 12,000 installations, in six major industrial sectors, across 25 countries. It encompasses over 40% of Europe's and the UK's CO₂ emissions. Companies included in this scheme have the choice to reduce their own emissions, buy allowances in the market (called EU allowances, EUAs) or purchase credits through CDM or JI projects (although there are limits on the volume of CDM and JI credits that can be purchased). The scheme has been running since

1st January 2005. Its second phase will start on 1st January 2008 and end on 31st December 2012, in line with the first Kyoto commitment period. A third phase is expected to run after this, but its form and duration have yet to be defined.

Other schemes

Apart from the EU ETS, there are three other schemes in operation in countries that have ratified the Kyoto Protocol: the Norway ETS, UK ETS (which will end in December 2006) and the Japan Voluntary Emissions Trading Scheme, which has been running since April 2006. Other schemes are also being developed to help countries comply with their Kyoto targets.

The New South Wales Abatement Scheme in Australia and the Regional Greenhouse Gas Initiative in the US are two other examples of emissions trading schemes. Although these countries have not ratified the Kyoto Protocol, and therefore have no legally binding commitments to reduce their emissions, the schemes are put in place at a state level and both are mandatory for the companies covered within the scheme, as described below:

► New South Wales Abatement Scheme

In operation since 2003, the scheme is aimed at reducing CO₂ emissions from the generation of electricity in this Australian state. A hybrid between a cap-and-trade and baseline-and-credit system (see Box 3), emitters are given a cap on their emissions based on the emissions per capita within the state; if an emitter exceeds the cap they can either pay a fine (c. €6.25/tCO₂e) or offset emissions by purchasing New South Wales Greenhouse Abatement Certificates (NGACs) generated by emissions reduction projects carried out within the state. Unlike other schemes, the New South Wales scheme does not allow the use of other credits, such as Kyoto credits, for compliance purposes.

► Regional Greenhouse Gas Initiative (RGGI)

This scheme is to be launched in January 2009 in seven North-Eastern and Mid-Atlantic US states. It is a cap-and-trade scheme and covers around 200 power plants with energy production capacity above 25 MW, which use fossil fuels to generate 50% or more of their energy. The scheme allows participants to use offsets for compliance purposes, favouring those generated in the US, although offsets from other schemes could be used with some restrictions.

Box 3: Emissions Trading Mechanisms

Emissions trading mechanisms can take two basic forms: cap-and-trade or project-based (sometimes also called baseline-and-credit).

Cap-and-trade system

Cap-and-trade systems are based on the allocation of a ceiling or cap on emissions over a period of time. The authority allocates allowances either free or by auctioning them. Each allowance represents a defined emissions amount (eg tonne of SO_x, NO_x or CO₂ equivalent). In order to create a market, authorities allocate a limited number of allowances, below the current expected emissions level, which creates scarcity in the market, generating a positive value for the permits. Examples of this system include the US SO_x allowances trading scheme, the Kyoto emissions trading scheme and the EU ETS.

Project-based or baseline-and-credit system

This system is based on projects which reduce emissions beyond a business-as-usual scenario – in other words, they generate emissions reductions that are additional to what would have happened in the absence of the project. The business-as-usual scenario provides the baseline for these projects. Baselines are established from historical emissions data or through other methodologies (eg ratio of emissions to output). Projects that reduce emissions beyond the baseline are entitled to emissions reduction credits, which can be sold to parties that can use them for compliance or voluntary purposes. Typically, emissions reduction credits are not issued until the reductions have actually occurred. Examples of this system are CDM and JI projects.

The voluntary carbon market

Alongside the compliance market, a voluntary market has emerged. This brings together some very different players (eg from companies to local governments, NGOs, individuals or cities) who have a range of reasons for participating in the market.

As in the compliance market, the voluntary market has a number of different schemes. However, in contrast to the compliance market, these schemes generate emissions reduction units or allowances which, in most cases, are not tradable outside the scheme boundaries, in other words, are 'non-fungible'.

The non-fungibility characteristic of the voluntary market is because of differences in the rules of the schemes. While in the compliance market most schemes are governed by the Kyoto Protocol, creating emissions reduction units which are fungible or transferable, there is no such overarching framework in the voluntary market. This makes the voluntary market not only complex to understand, but also less transparent and extremely diverse in terms of its 'trading units'. For example, some emissions reduction credits traded on this market do not need to pass any additionality criteria, while others do.

A way to understand this market is to divide it between the voluntary market with legally binding obligations and the voluntary market without.

Legally binding voluntary market

Players in this market form part of a scheme in which they voluntarily set themselves legally binding GHG emissions reduction targets. This is the case in the Chicago Climate Exchange (CCX). The CCX is a voluntary system (based in Canada, the US and Mexico) which sets self-imposed, legally binding reduction targets on its members. The system is a hybrid between a cap-and-trade and project-based scheme. Participant members have an emissions cap based on historic (1999-2002) emission levels. To comply, members can either reduce their emissions below their cap or purchase offset credits generated from projects in the US, Brazil, Canada or Mexico that focus primarily on landfill and agricultural methane destruction, or carbon sequestration in soils or forest-based biomass. The scheme also allows the use of Kyoto compliance instruments such as CERs or ERUs.

Non-legally binding voluntary market (the offset market)

Players in this market engage voluntarily in emissions reduction schemes because they have either set their own reduction targets or wish to reduce or net off their carbon footprint. Strategic reasons why companies buy offsets include addressing climate change, generating goodwill amongst customers and employees, learning by doing, or Corporate Social Responsibility (CSR) interest or obligations. This segment includes the so-called 'retail' carbon market, targeted at companies and individuals that usually have relatively small direct emissions, and wish to reduce their carbon footprint through offsetting. They often purchase small quantities of emissions reduction credits, which could either be verified or be part of a non-verification standard. This market is commonly referred to as the carbon offset market.

Both the legally and non-legally binding markets have seen a steady increase in their activities in the past two years. In the legally binding sector, the Chicago Climate Exchange has seen the value of its transactions grow by more than 140% annually. Similarly, the voluntary retail offset market has enjoyed a steady growth in the past two years. The voluntary offset market today is small and fragmented, but growth is expected for the foreseeable future. For example, in the past three years, the main non-compliance offset providers in the UK have grown by over 60% per annum.

Growth in the voluntary market will be dependent on the level of interest from the general public and key stakeholders interested in climate change, and on the perception of whether offsetting is the right way to address climate change in the long term. Some NGOs and the media have started to question the role of offsetting as they see it as a licence to continue the status quo and delay true changes in behaviour that would drive society towards a low-carbon economy.

In addition, the voluntary market could be changed considerably by the introduction of a common standard that could improve credibility, or by the evolution of a new international climate change agreement post-2012. This is why some market participants are cautious about the expected growth rate. They predict that continued growth can be sustained for the next 4-5 years but that after 2012 there is uncertainty as to how the market is going to evolve.

The rest of this guide will focus primarily on the voluntary market, specifically the voluntary retail offset market. This is still a very young and evolving market and participants need to consider carefully the issues relating to offsets and the wider carbon neutral concept before engaging in it.

2 Background on carbon offsets

Project-based carbon offsets

Carbon offsets are generated from projects that avoid or absorb/sequester carbon dioxide, or any of the other main greenhouse gases (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride).

These projects can take various forms, including renewable power, energy efficiency, fuel switching (eg from oil to natural gas), reforestation, or destruction of greenhouse gases (eg methane, HFC 23). Table 1 provides examples of the type of technologies that can be used to generate offsets.

In the voluntary sector, offsets are mainly sourced from small scale projects (typically with emissions reductions of below 15ktCO₂e per annum) located in developing countries.

This is for two main reasons. Firstly, small scale projects typically benefit local and rural communities providing sustainable development and/or social benefits. These benefits are sought by buyers who not only want to reduce their carbon footprint, but also want to use offsets as a way to promote corporate social responsibility.

The second reason is an economic one. In the majority of cases, small scale projects are still economically unattractive for the compliance market (due to the high transaction costs involved in developing these projects under compliance market rules), but they are a viable source of credits for the voluntary market where the burdens of verification are often much lower.

Table 1: Examples of technologies that can be used in offset projects.

	Type of technology	Examples
Technologies avoiding greenhouse gases	Renewable energy	<ul style="list-style-type: none"> ▶ Run-of-river hydro (typically less than 15MW) ▶ Biomass ▶ Wind ▶ Solar thermal ▶ Photovoltaic
	Energy efficiency	<ul style="list-style-type: none"> ▶ Low-energy lighting ▶ Industrial energy efficiency
	Gas recovery or destruction	<ul style="list-style-type: none"> ▶ Methane recovery from landfills ▶ Destruction of by-product (HFC 23) from HFC 22 refrigerant production
	Fuel switch	<ul style="list-style-type: none"> ▶ Oil to natural gas ▶ Diesel to natural gas ▶ Fuel oil to natural gas ▶ Liquid petroleum gas (LPG) to biomass briquettes
Technologies absorbing/sequestering CO ₂	Biological sinks	<ul style="list-style-type: none"> ▶ Reforestation (forestation of land previously forested) ▶ Afforestation (forestation of land not previously forested)

Not every project that reduces GHG emissions can generate carbon credits. To qualify as an offset, the reductions achieved by a project need to be additional to what would have happened if the project had not been carried out – a condition defined as ‘additionality’.

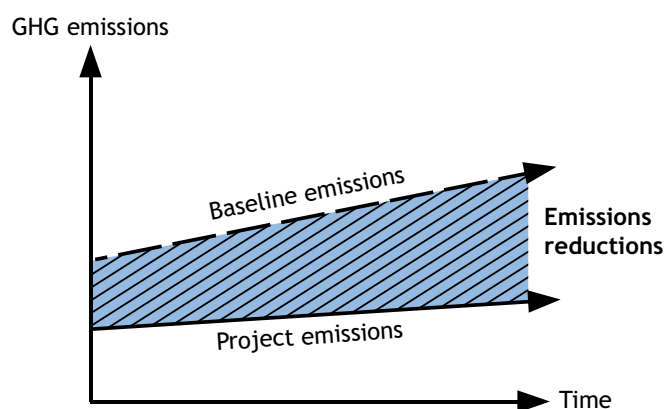
Box 4: Testing for additionality

The Executive Board of the UNFCCC has developed a toolkit to help project developers assess projects’ additionality. Published as the ‘CDM tool for the demonstration and assessment of additionality’, this has been widely used in the CDM market and is a robust process to test additionality for emissions reduction projects. Under the CDM tool, a project is additional if it meets the following criteria¹:

- ▶ It is not required by current regulation
- ▶ It is not common practice (ie technology or practice has not diffused in the relevant sector or region where the project is carried out); and/or
- ▶ It faces economic, investment or technological barriers that would prevent the implementation of the project. Examples of economic barriers could be an inability to meet IRR, NPV or payback criteria; investment barriers include a lack of access to debt funding or to capital markets due to real or perceived risks associated with the project; and technological barriers include lack of labour resources needed to operate and maintain the technology or a lack of infrastructure needed to implement projects in the country or region.

Additionality is the defining concept of offset projects. The integrity of project-based credits relies on the reduction of GHG emissions beyond what would have occurred in a business-as-usual scenario. What constitutes business-as-usual is not straightforward to determine and a number of methodologies have been developed to define the baseline emissions against which the project is compared (see Box 5). The difference between the project emissions and the baseline emissions defines the number of emissions reduction credits that a project is entitled to, as illustrated in Figure 2.

Figure 2: Net reductions generated from offset projects



Box 5: CDM baseline methodologies

Every project submitted for CDM registration has to have its baseline emissions calculated according to an approved methodology. These methodologies provide a reasonable process to represent the greenhouse gas emissions that would have occurred in the absence of the project.

As of September 2006, there are more than 60 approved methodologies that cover a wide spectrum of project types, such as zero emission renewable energy projects, biomass projects, emissions recovery from waste, wastewater or animal waste projects, fossil fuel switching projects, destruction of potent greenhouse gases such as HFC 23, changes in cement production, energy efficiency projects, transport projects and reforestation projects. A list of current methodologies can be found on the UNFCCC website, <http://unfccc.int>

¹ CDM tool for the demonstration and assessment of additionality (http://cdm.unfccc.int/EB/Meetings/022/eb22_repan8.pdf)

Characteristics of offset projects

Besides additionality, there are a number of other important characteristics that affect an offset project's integrity and credibility. These are:

Verification

Monitoring and verification of emissions reductions provide guarantees that the emissions reductions claimed by a project have actually been achieved. To ensure the integrity of the verification process, emissions reductions should always be verified by an accredited independent third party according to an established standard or protocol. It is important to distinguish between verification and validation. While validation involves assessing that the offset project has been set up properly, verification establishes whether the reductions it claims have actually been achieved. In the compliance market, verification is carried out by pre-approved verifiers, called Designated Operational Entities (DOEs). DOEs can also provide written assurance that the project has achieved the verified emissions reductions – a process defined as certification (this is why carbon credits from CDM projects are called Certified Emissions Reductions, CERs).

Permanence

Permanence refers to the ability of a project to maintain the reductions achieved over time. Permanence is important as some projects might mitigate emissions which may be released into the atmosphere later. For example, projects from forestry activities used as carbon sinks, could re-release the carbon captured in the growing trees if the forest burnt down or the use of the land changed. Offset providers should offer some form of guarantee that ensures that the emissions reduction credits contracted by a buyer are maintained over time. Guarantees could take the form of an insurance policy, where an underperforming project generating credits is either replaced by credits from other projects from the seller's portfolio, or by acquiring credits in the market to cover the shortfall. Other strategies could include the establishment of a contingency carbon credits pool (eg a percentage of the credits generated by the project are kept by the developer and not sold), or the maintenance of a portfolio of projects that would deliver credits from different technologies, at different times coming from different locations. This would ensure that underperforming projects could be balanced by other projects in the portfolio that are delivering.

Leakages

Leakage is defined as increases or decreases in emissions that take place beyond the project boundary and which are measurable and attributable to the project activity. For example, reforestation projects might have negative effects by displacing agricultural activities to other areas where they could generate emissions. Leakages need to be quantified and taken into account in the project, adjusting the emissions reductions achieved by the level of leakage identified. It is important that projects account for major and obvious leakages in a practical way, striking a balance between environmental integrity and the practicality (in terms of resources and financial constraints) of quantifying the impacts outside the project's boundaries.

Double counting

Double counting could happen at a project level, when a credit is sold two or more times to different buyers; and/or at a national level, where voluntary reductions are counted against national mandatory targets. To avoid the former, offset sellers should always have a registry in place where credits are accounted for and retired; without a registry in place, transactions cannot be logged or credited to buyers and potentially the same credit could be sold more than once. To guard against the second issue, rules that define how greenhouse gases are accounted for at a national level are required together with the use of national and international registries. Without an appropriate mechanism for discounting the reductions generated by offset projects from the national GHG inventory of countries with legally binding targets, the reductions could be double counted: against voluntary reductions as well as against national compliance targets. It is important that offset providers define how they are going to deal with double counting issues when sourcing projects from Annex I countries (developed countries with legally binding reduction targets under the Kyoto Protocol agreement).

Standards by which offsets are measured

To ensure that credits generated from emissions reduction projects are equivalent to each other, standards have been developed that regulate carbon offsets. These define the main characteristics that offset projects should comply with to guarantee their integrity, especially regarding additionality and verification.

In the compliance market, standards and rules of engagement are well defined, with the UNFCCC ensuring that both CDM and JI standards are met. Projects must comply with approved methodologies for calculating baseline emissions, executing monitoring plans, and use pre-approved organisations to carry out verification and certification of emissions reductions.

In the voluntary market, there is no equivalent to a defined standard or rule of engagement. Instead, there are a variety of standards, protocols, and verification methods, most of them proprietary to each offset provider.

Recently there has been some effort to provide harmonisation of the voluntary market through the development of two standards: the Voluntary Gold Standard and the Voluntary Carbon Standard by the Climate Group.

The former was launched in May 2006 and the latter is expected in December 2006.

These two standards are expected to be complementary. The Voluntary Carbon Standard will focus on the small to medium size projects, while the Voluntary Gold Standard will be aimed at micro to small scale projects with a strong sustainable development component.

Whether the market will see these two working in this way remains to be seen, but most likely the voluntary market will eventually have one standard (or two complementary standards) that will try to bring harmonisation to the market. A range of current standards is described in Table 2.

Table 2: Brief description of main offset standards

Standard	Coverage	Key points
CDM/JI	Project-based emissions reductions, including rules for baselines, additionality, monitoring, reporting, verification and certification	<ul style="list-style-type: none"> ▶ Governed by independent Executive Board of UNFCCC ▶ Robust additionality, monitoring and verification process; high credibility in the market ▶ Aimed at the generation of compliance instruments (CERs, ERUs) ▶ High transaction costs
CDM Gold Standard	As for CDM, but strong focus on sustainable development benefits and restriction on technology types (no forestry projects can be included)	<ul style="list-style-type: none"> ▶ Provides a consistent approach to assess the contribution of project towards sustainable development ▶ Endorsed by a number of NGOs ▶ High transaction costs
Voluntary Gold Standard (VGS)	As for CDM Gold Standard, but aimed at the voluntary sector	<ul style="list-style-type: none"> ▶ Aimed at small scale and micro scale projects ▶ Strong focus on sustainable development benefits ▶ Simplified rules to reduce transaction costs ▶ Launched in May 2006
Voluntary Carbon Standard (Climate Group)	For exclusive use on the voluntary market	<ul style="list-style-type: none"> ▶ Based on CDM framework ▶ Creates tradable Voluntary Carbon Unit (VCU) ▶ Registry to be managed by Bank of New York ▶ Expected to be launched in December 2006
Climate, Community and Biodiversity Standards (CCB)	Forestry carbon sequestration projects with community involvement and biodiversity benefits	<ul style="list-style-type: none"> ▶ Developed by the Climate, Community, and Biodiversity Alliance over two years and involving field testing in four continents ▶ Use methodologies developed by the Intergovernmental Panel on Climate Change (IPCC) ▶ Three levels of validation – Approved, Silver and Gold
Plan Vivo System	Framework for offsets from rural communities promoting sustainable livelihoods	<ul style="list-style-type: none"> ▶ Only used on forestry projects so far, but scope for other type of projects ▶ Low transaction costs ▶ Seven years' field experience of the standard
Proprietary Verified Emissions Reductions (VERs)	Generic term for voluntary carbon credits, not certified by external body but verified on a case-by-case basis	<ul style="list-style-type: none"> ▶ No formal VER standard yet, so no governance structure ▶ Emission reduction typically verified by third party, but standards can vary widely

CDM/JI standard

Projects that want to generate compliance credits (CERs, ERUs) need to comply with the CDM/JI standards, governed by the independent Executive Board that is part of the UNFCCC framework.

The standards provide high levels of integrity, credibility and robustness, but to comply with them, project developers have to incur high transaction costs: therefore applicability is mainly limited to medium to large projects generating emissions reductions in excess of 50,000 tonnes of CO₂ equivalent.

Under the CDM standard, additionality is proved using the additionality toolkit (see Box 4) and baseline methodologies approved by the CDM Executive Board. To comply with the standard, project developers must complete a Project Design Document (PDD) which provides:

- ▶ General description of project activity
- ▶ Application of a baseline methodology
- ▶ Duration of activity and crediting period
- ▶ Application of a monitoring methodology and plan
- ▶ Estimation of GHG emissions by source
- ▶ Environmental impacts
- ▶ Stakeholders' comments.

Project developers have to submit the PDD for validation by an accredited third party (Designated Operational Entity, DOE) and seek approval by the Executive Board. The standard defines a verification process that needs to be carried out by a DOE, once the project has been validated and registered with the Executive Board. This involves on-site inspections and reviews of the project documentation. The end of the process is certification, a written assurance by the DOE that the project activity has achieved the verified emissions reductions claimed. After certification, Certified Emissions Reductions (CERs) can be issued.

CDM Gold Standard

The CDM Gold Standard, developed by a group of NGOs led by WWF, is built on the basis of the CDM standard, but incorporates guidelines and frameworks to prove the sustainable development component of CDM projects. As already mentioned, under CDM standards, projects need to promote sustainable development. However, CDM rules do not provide guidelines on how project developers must

do this, nor how to conduct a stakeholder consultation (a requirement of CDM). Projects must pass three screens to qualify as a CDM Gold Standard project:

- ▶ Project-type screen – the Gold Standard is restricted to renewable energy and end-use energy efficiency improvement projects
- ▶ Additionality and baseline screen (similar to CDM)
- ▶ Sustainable development screen – projects must be assessed on their contribution to sustainable development using defined guidelines and frameworks provided by the standard to create a scoring system for environmental, social and economic impacts. The standard requires an extended stakeholder consultation and, when required by national law, the development of an Environmental Impact Assessment.

CDM Gold Standard, although targeted at the CDM market, could be applied to any project (except forestry projects which are excluded from the standard). However, due to the high transaction costs involved to certify under this standard, it is best applied to medium to large projects, which typically are developed for the CDM market.

Voluntary Gold Standard (VGS)

The Voluntary Gold Standard, launched in May 2006, has been specifically developed for use in the voluntary offset market to generate verified emissions reductions (VERs). As with the CDM Gold Standard it has a strong focus on sustainable development.

The standard is based on the CDM Gold Standard, but provides simplified procedures aimed at small or micro scale projects. For example, the verification process is conducted on a random sample, rather than for every project every year as in the CDM Gold Standard, and there is no need to carry out a certification process. By simplifying some procedures, the Voluntary Gold Standard aims to lower transaction costs and make it more attractive to generate VERs from small scale projects. The standard can only be applied to projects in developing countries to avoid double counting issues.

Voluntary Carbon Standard (VCS)

The Voluntary Carbon Standard designed by the Climate Group and the International Emissions Trading Association (IETA) is another standard specifically being developed for the voluntary offset market. It seeks to create a new trading unit called a Voluntary Carbon Unit (VCU).

The standard aims to bring together best practices that already exist in the marketplace. Although it is primarily based on the CDM standard, it incorporates processes from other standards. For example, while the additionality and baselining is based on CDM principles, the project accounting is based on the principles and methods of the GHG Protocol for Project Accounting, a different standard developed by the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI), which has been widely endorsed by governments, NGOs and industry associations to be used for corporate and project greenhouse gas accounting.

The Voluntary Carbon Standard has created a registry managed by the Bank of New York to register, transfer and retire VCUs from the market. The registry allows the trading of VCUs by different market players, and ensures double counting issues are avoided.

Forestry standards

There are two main standards used for forestry projects: The Climate, Community and Biodiversity standard (CCB) and the Plan Vivo system. Both standards provide a framework to develop forestry projects that incorporate sustainable development benefits for the rural communities where the projects are carried out.

The CCB standard has three levels of validation: approved, silver and gold. It sets out 23 criteria based on climate, biodiversity, and socio-economic development; baseline, project design and project management criteria. To qualify for the CCB standard, projects need to comply with a minimum of 15 compulsory criteria, and independent third party evaluators determine if the project merits approval. Projects can be approved, or can be issued a silver or gold standard, depending on how many other extra criteria they comply with. The standard uses the methodologies of the Intergovernmental Panel on Climate Change's Good Practice Guidance to estimate net changes in carbon stocks due to the project's activities. The standard can also use the methodologies approved by the CDM Executive Board.

Plan Vivo, developed by the Edinburgh Centre for Carbon Management (ECCM), is a system to create credits from small scale agro-forestry projects. It relies on the technical and management expertise developed by the ECCM over more than seven years of field work experience. Technical specifications are put together with project developers, the host organisation (usually an NGO or a local cooperative) and a technical team from ECCM and/or a local or regional organisation. Projects are regularly monitored using, in most cases, local experts. Credits generated from Plan Vivo projects are registered on a database so credits can be traced back to individual projects and double counting can be avoided.

Proprietary standards

Voluntary offset providers (primarily retailers who invest in a portfolio of offset projects and sell small amounts of credits to customers from their overall emissions reduction portfolio) have developed their own standards in the absence of a formal Verified Emissions Reductions (VER) standard. These standards differ widely, having different approaches to the way they test additionality, calculate baselines or the way the verification procedure is carried out. VERs generated from different proprietary standards are usually neither comparable or tradable. This is reflected in the price range of VERs, which varies from €3-15 per tonne of CO₂e (for projects that at the lower end, for example, do not need to comply with additionality principles or a standard) to €20-30 per tonne of CO₂e (for projects that need to comply with a rigorous methodology, including the promotion of sustainable development). It is up to the buyer of VERs to make sure that VERs sold under a proprietary standard comply with minimum quality levels (described later in this document). But as a bare minimum, the projects under any standard should have a methodology to assess additionality over a defined baseline and have a verification process run by an accredited independent third party.

3 The carbon neutral concept

The voluntary offset market has experienced rapid growth in the past two years. The key factor driving this market has been the increase in public awareness of climate change, and the acknowledgement by companies that it is an important element to consider in their business strategy and operations.

In our report *Brand Value at Risk from Climate Change*, climate change was identified as an issue that could become a mainstream consumer concern by 2010. It was acknowledged as a business risk or opportunity by more than 85 per cent of the Financial Times Global 500 (FT500) companies interviewed by the Carbon Disclosure Project² in 2006 so it is no surprise that climate change has become an important issue on corporate social responsibility agendas.

What is carbon neutrality?

Carbon neutrality is achieved when emissions from a product, activity or a whole organisation are netted off, either through the purchase of an equivalent number of offsets or through a combination of emissions reduction and offsetting. In theory, the concept is easy to understand, and this can explain why its popularity has grown in recent years. However, in practice this concept is more difficult to apply. Carbon neutrality is a dynamic state where year-on-year emissions need to be netted off. Immediately two questions arise:

- ▶ How to achieve carbon neutrality – and in particular to what extent should companies directly reduce their emissions versus purchasing offsets?
- ▶ How to define the carbon footprint of products, services or companies?

How to achieve carbon neutrality

In our experience of working with companies across the UK on emissions reduction, the most cost effective and environmentally sound way to address an organisation's carbon footprint is to:

- ▶ First, focus on reducing direct emissions – implementing all cost-effective energy efficiency measures and, where cost effective, reducing the carbon intensity of energy supply by generating low-carbon heat or electricity

- ▶ Secondly, look at opportunities to reduce indirect emissions – working with other organisations to reduce emissions and cut costs up and down the supply chain, and to look for new revenue opportunities such as developing new low-carbon products
- ▶ Then, if appropriate, consider the option of developing an offset strategy for those emissions that cannot be avoided.

This approach, focusing on direct and supply chain emissions, delivers bottom line financial and carbon savings year-on-year. And for those organisations considering buying offsets, this approach reduces the number of offsets that they might need to purchase.

An organisation could achieve carbon neutrality by acquiring carbon offsets without taking any action to reduce its carbon footprint. However, this strategy can bring many risks. Firstly, it is only as good as the offsets acquired. Not all offset projects create truly additional emissions reductions, and organisations need to ensure that they are purchasing good quality offsets that represent truly additional emissions reductions year-on-year. Secondly, while offsetting can address an organisation's carbon footprint in the short term, it can delay real changes in behaviour that would drive our society towards a low-carbon economy. Organisations will need to address directly their carbon footprint to achieve the targets set up by governments or comply with future legislation. Thirdly, some NGOs and the media have started to question the role of offsetting, and a strategy only focused on that option could potentially bring reputational risks.

If an organisation wishes to become carbon neutral then a strategy that combines direct and indirect emissions reductions with offsetting as an option, can be less risky and more beneficial from an economic point of view, reducing the number of offsets needed and improving the bottom line. In addition, from a CSR perspective it demonstrates the organisation's commitment to mitigating climate change directly by reducing its own emissions and carbon footprint. Most of the carbon neutral schemes in place in the market support the idea that carbon neutrality should be achieved through a combination of direct emissions reductions and offsetting.

² The Carbon Disclosure Project (CDP) Report 2006. The CDP provides a coordinating secretariat for institutional investor collaboration on climate change. CDP's aim is twofold: to inform investors of the significant risks and opportunities presented by climate change; and to inform company management of the serious concerns of their shareholders regarding the impact of climate change on company value.

How to define your carbon footprint

To be able to become carbon neutral, an organisation first needs to know its carbon footprint: the emissions for which it is responsible. A carbon footprint includes activities that result in direct and indirect emissions, and therefore it is closely related to where the boundaries for particular activities are drawn. Direct emissions, or those under full control of an organisation, are always included within the company's carbon footprint (including emissions associated with electricity consumption). It is really the inclusion or exclusion of indirect emissions that differs when calculating an organisation's, product's or activity's carbon footprint. Indirect emissions, or those emissions not controlled or fully controlled by an organisation, can include emissions from travel (eg business flights), supply chain emissions, employees commuting to work and so on.

Guidance on which emissions to include from indirect sources and how these are categorised can be obtained from standards like the GHG Protocol Initiative (developed by the World Resource Institute (WRI) and World Business Council on Sustainable Development (WBCSD)), ISO 14064 or from proprietary standards developed by offset providers. However, regardless of the definition used, the key is to state clearly what has and has not been included within the carbon footprint. This helps to explain what aspects of an organisation, product or activity have been considered in a carbon neutral claim, and which have been left out of scope and why.

Businesses and carbon neutrality

Most forward thinking businesses have recognised the need to address climate change and have begun to proactively reduce their carbon emissions, minimising the risks (such as regulatory, reputational or competitive risks), and maximising the business opportunities created by climate change (eg creating new commercial opportunities from low-carbon products or services, or from participating in the global carbon market). A number of businesses have also turned to the voluntary offset market as a way to compensate for their emissions and demonstrate their commitment to take action on climate change. Some of these companies include offsets as part of a wider carbon management strategy, which involves direct and indirect emissions reductions as well as offsetting, whilst others only use offsets as a way to address their carbon footprint.

A study commissioned by the Carbon Trust and carried out by L.E.K. Consulting found that the perceived pressure from customers and consumers has been the main driver of the voluntary market, motivating organisations to invest in voluntary offsets as part of their CSR or environmental policies.

Many companies also use offsets as a means to engage employees on environmental issues, offsetting their individual business flights or even giving them the opportunity to voluntarily offset their personal emissions. In addition, companies can also use offsets as a way to internalise the cost of carbon and anticipate future legislation.

Offsets can also provide a way to differentiate products. Companies can offer carbon-compensated products by offsetting the total life-cycle emissions of their products or by offsetting part of their emissions.

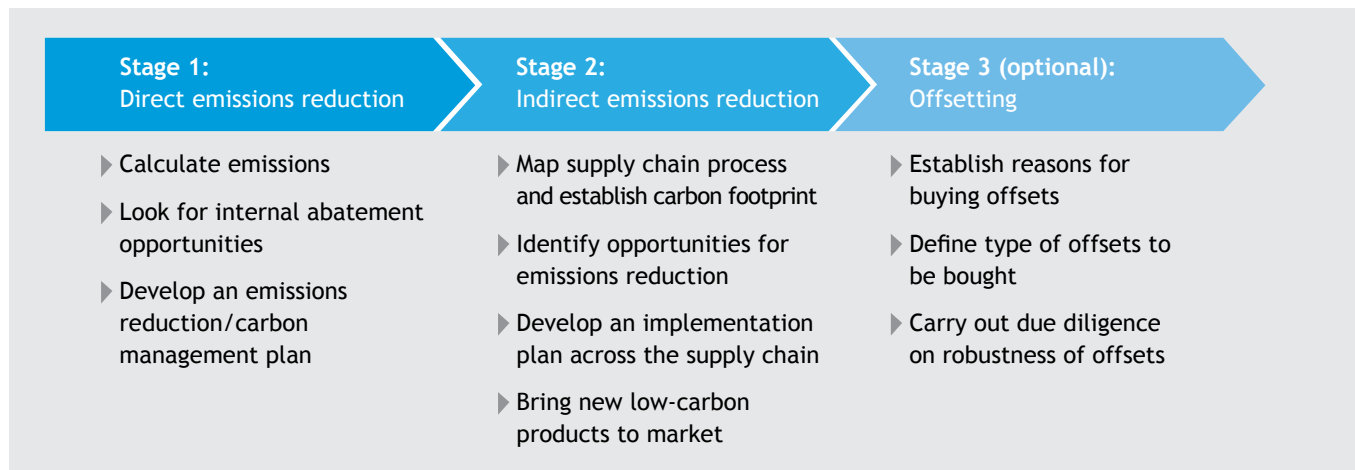
However, not all companies are likely to want to buy offsets voluntarily. Firms which are large emitters or have high direct emissions are either likely to be covered by the compliance market (eg EU Emissions Trading Scheme) or are in a better position to cost effectively abate their internal emissions, obtaining a net benefit rather than incurring a net cost.

4 The Carbon Trust three stage approach to developing a robust offsetting strategy

The Carbon Trust has developed a three stage process for creating a robust offsetting strategy, that places offsetting within an overall carbon management plan. This includes

direct and indirect emission reduction and puts offsetting in context as an option:

Figure 3: The Carbon Trust three stage approach to developing a robust carbon management strategy



Stage 1: Focus on direct emissions reduction

The first stage in a robust carbon management strategy is to focus on addressing direct emissions. There are a number of benefits to doing this, including:

- ▶ Cost savings –reducing energy bills as well as leading to savings on transport, waste and other operating costs
- ▶ Operational efficiency – as a side benefit of improving energy and carbon efficiency
- ▶ Mitigation of regulatory risks – including Climate Change Levy (CCL), Energy Performance of Buildings Directive (EPBD), EU Emissions Trading Scheme (EU ETS) or any future legislation
- ▶ Corporate Social Responsibility and reputation – from proactively making efforts to directly reduce carbon emissions.

In order to draw up an emissions reduction plan, an organisation first has to quantify its emissions and look for internal abatement opportunities. These opportunities can include:

- ▶ Implementing cost-effective energy efficiency measures, such as heating and lighting upgrades, using new process technologies and delivering staff training and awareness programmes
- ▶ Developing low-carbon energy sources such as on-site renewable generation
- ▶ Addressing the more strategic business risks and opportunities associated with climate change. Typically, this can include work on regulatory compliance, future cost of carbon, market opportunities for new products and services, and shareholder and other stakeholder impacts.

The Carbon Trust, through its Carbon Management programme and its range of energy surveys can help organisations quantify their emissions and provide advice on energy efficiency and carbon management, helping them draw up an emissions reduction plan.

Ideally, a feedback loop should be established where savings derived from low or no-cost emissions reduction measures provide funds to re-invest in cost-effective energy efficiency measures that do require capital investment, to provide further long-term energy reductions and cost savings.

Stage 2: Look at opportunities to reduce indirect emissions

Once an organisation has its house in order and has developed an emissions reduction plan, the next stage is to look at opportunities to reduce indirect emissions by working with organisations across the supply chain. By considering all of the raw materials and processes required to get a product to market, it allows the carbon footprint of the final product to be calculated. This can be used to identify opportunities to make significant cuts in emissions and energy costs across the supply chain. As consumer attitudes change, it also allows forward thinking companies to develop low-carbon products to capture new markets and generate higher profits over time.

The Carbon Trust has developed a supply chain methodology to help companies build the full carbon footprint of products and identify emissions reduction savings opportunities across the supply chain. The methodology draws heavily on standard life-cycle analysis techniques (LCA) and is structured in four chronological steps:

Step 1	Initial analysis and engagement
Step 2	Construction of the carbon footprint
Step 3	Opportunity identification and prioritisation
Step 4	Presentation of results and implementation planning

The methodology allows the inclusion of emissions from product use, reuse, recycling and disposal alongside emissions from production and distribution in an integrated way. It identifies carbon savings beyond the scope of those identified by other analysis techniques. Because the scope is wider than in traditional analyses, the emissions reduction opportunities identified tend to be larger.

This supply chain approach has the potential to unlock significant emissions reductions and large financial benefits by reducing the carbon footprint at an individual product level.

Ultimately it can help all of business make better-informed decisions in product manufacturing, purchasing, distribution and product development by considering the costs and liabilities that exist whenever carbon emissions are generated.

More details on the supply chain product can be found in the Carbon Trust publication: *Carbon footprints in the supply chain: the next step for business* (published in November 2006).

Stage 3 (optional): Develop an offsetting strategy

After looking at the direct and indirect emissions, some companies may decide to include offsetting as part of their overall carbon management strategy.

Those companies that decide to offset should define a strategy. It could be as simple as quantifying the number of offsets to buy and the potential providers of good quality offsets, or involve defining particular requirements that offsets should comply with, and finding providers that could match those requirements.

Establishing reasons for buying offsets

Organisations might want to offset their emissions:

- ▶ As part of an environmental strategy that includes offsetting emissions which are not cost effective or feasible to reduce in the previous stages
- ▶ As part of a carbon neutral strategy driven by CSR reasons or brand positioning
- ▶ As a way to anticipate future legislation or to gain experience in the carbon market.

Whatever the case, defining the reasons will help to identify the type of offsets that organisations should acquire if they decide to offset at all.

For example, an organisation driven by CSR reasons, is likely to acquire offsets from small scale projects from developing countries with a strong sustainable development component. On the other hand, an organisation wanting to anticipate future regulation might try to obtain compliance credits.

Identifying the type of offsets to buy

Once an organisation has established the reasons for buying offsets, the next step is to define the type of offsets to acquire. This will depend on the reasons for offsetting emissions and on the particular requirements that organisations might want. There are seven key categories to look at when defining the type of offsets to buy:

- ▶ Project type
- ▶ Standards used
- ▶ Project location
- ▶ Additional benefits
- ▶ Level of aggregation (credits from a portfolio versus credits from individual projects)
- ▶ Provision of guarantees
- ▶ Labelling service offered.

Table 3 (overleaf) provides options, advantages and disadvantages for each of these categories.

Purchasing good quality offsets

Acquiring credible good quality offsets is crucial when defining an offsetting strategy. Poor quality offsets not only create significant reputational risks but also provide no additional environmental benefits. As the voluntary market remains largely unregulated, buyers should carry out their own due diligence to assess the integrity and credibility of the offsets they are buying. However, with the large variety of standards, protocols, and verification methods in existence, most of them proprietary to offset providers, it is difficult for buyers to carry out such an assessment.

Carrying out due diligence

To help in the assessment of good quality offsets, the Carbon Trust has developed a test which refers to the five main characteristics that offsets should comply with to provide a minimum level of quality assurance:

- ▶ Verification – offset should always be verified by an accredited third party according to a standard or protocol
- ▶ Additionality – ensure reductions are additional to what would have happened in the absence of the project
- ▶ Leakages – take into account negative impacts beyond the project boundary
- ▶ Impermanency – ensure the reductions achieved are maintained over time (particularly critical for carbon sink projects)
- ▶ Double counting – avoid offsets being used or counted more than once.

All recognised independent standards comply with this minimum level of quality assurance:

- ▶ CDM/JI
- ▶ Voluntary Gold Standard
- ▶ Climate Group Voluntary Standard
- ▶ Plan Vivo
- ▶ Climate, Community and Biodiversity standards (CCB).

For proprietary standards, it is more difficult to know, without further enquiry, whether they will pass the validity test. Figure 4 provides a step-by-step process to aid customers to assess the validity of the offsets they are acquiring.

Identifying offset providers

The last stage of this process is to identify providers of good quality offsets.

Carbon credits, in general, are sold through a number of mechanisms including trading platforms, brokers, credit aggregators, or retailers. Voluntary credits are mostly sold through retailers given the small volumes traded (usually below 15-20 tonnes of CO₂e).

Although organisations could buy either compliance or voluntary instruments, offset retailers tend to sell only voluntary instruments as the volume purchased per transaction in the voluntary market is low, making the selling of compliance instruments very cost ineffective.

There are 30 to 40 retailers that sell voluntary offsets worldwide. Most of them are located in the US, Australia and Europe. In Europe, there are around 10 main offset providers. They all vary according to the verification process or standard they use, the type of projects used, the project location and the price of offsets.

Offset prices can vary significantly depending on the type of offsets required. For certificates that include sustainable development benefits and that comply to a standard like the Voluntary Gold Standard, buyers have been paying prices of up to €20-30/tCO₂e. In contrast, credits based on proprietary standards have been selling at prices ranging from €3/tCO₂e to €15/tCO₂e.

One important point to mention is that cheap offsets could come at a cost and organisations should assess whether the financial benefit merits putting their reputation and brand at risk. Value for money does not necessarily mean acquiring the cheapest offset available in the market, but the most cost effective depending on the characteristics that buyers are looking for.

Table 3: Pros and cons of main offset characteristics

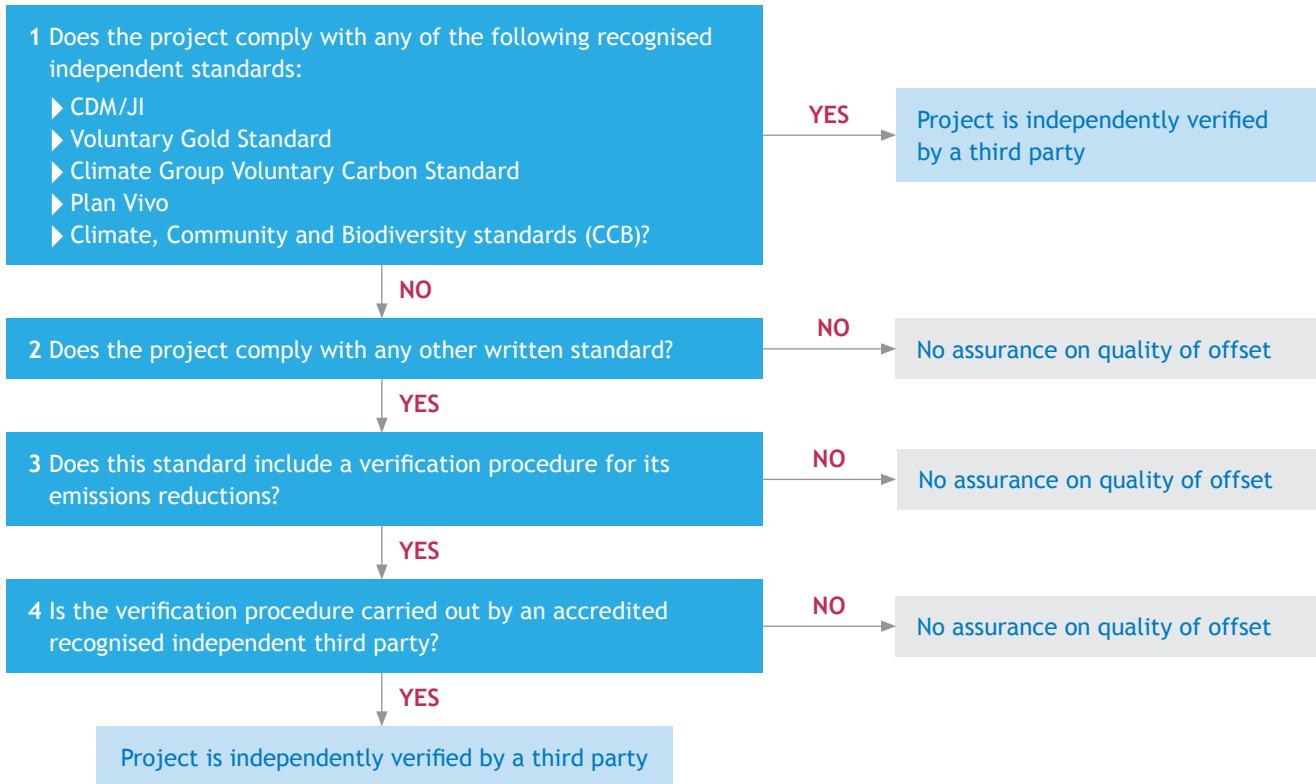
Project type	Options	Pros	Cons	
	Renewable energy	Easier to prove additionality; technology transfer benefits (to developing country); long-term benefits	Complex projects; delivery of credits could, for example, be affected by delays in making project operational, difficulties in establishing baseline, or changing baseline conditions	
	Energy efficiency	Technology transfer benefits (to developing country); long-term benefits	Complex projects; delivery of credits could, for example, be affected by difficulty in establishing baselines or concerns over additionality	
	Fuel switching	Simple projects, proven technologies	Concerns over additionality	
	Gas recovery or destruction	Simple projects, proven technologies	Concerns over additionality	
	Carbon capture and storage	Technology transfer benefits (to developing country); long-term benefits	Methodological accounting issues yet to be resolved, concerns over long-term environmental impact; early stage technology	
	Biological sinks – Land Use, Land Use Change and Forestry (LULUCF)	Additional socio-economic and environmental benefits; reverses contribution of approximately 20% of anthropogenic greenhouse gas emissions caused by land use change and forestry; viable way for least developed countries to participate in climate change mitigation and bring sustainable development benefits to those countries	Permanence issues (not able to guarantee CO ₂ capture over time); accounting and methodological issues; negative secondary effects (leakages); seen by some as distraction from real problem (world's fossil fuel-based energy systems); credits granted on predicted CO ₂ absorption level rather than actual absorption levels	
	Standards	CDM/JI standards	Robust/reliable standards, broad acceptance as good quality credits	Difficult to buy compliance credits for voluntary purposes (depending on volume); price could be high
		Voluntary Gold Standard	Robust standard for small scale project-based on CDM standards; strong focus on sustainable development component of project; good acceptance by stakeholders	No track record (standard just launched in May 2006); prices expected to be high
		Voluntary Carbon Standard	Robust standard based on CDM rules; strong backup from international organisations (IETA, WEF)	No track record (still under development, expected in December 2006)
		Climate, Community and Biodiversity standards (CCB)	Robust standard, use methodologies developed by the Intergovernmental Panel on Climate Change (IPCC); strong stakeholder backup	Credit prices generated under CCB expected to be high
	Plan Vivo	Robust standard, seven years of field work experience	Small number of projects developed under this standard	
	Proprietary (Self-developed standards)	In general, generates cheaper credits	More difficult to assess; weak standard can put credit buyer's reputation at risk; not always accredited third party verification or auditing	

Table 3 (cont.)

	Options	Pros	Cons
Project location	Developing country	Easier to prove additionality; sustainable development benefits	Country risk, non-delivery
	Developed country outside Kyoto	Cheaper credits, lower country risk	Credibility concerns; subsidising free-riding from countries benefiting from carbon market but without themselves making commitments to reduce their emissions under a legally binding framework
	Developed country inside Kyoto	Promotion of reductions in home country	Additionality concerns
Additional benefits	Environmental/conservation benefits	Buyers can be associated with particular projects that brings sustainable development benefits, improving the Corporate Social Responsibility (CSR) position of the organisation and providing positive Public Relations (PR)	Credits usually more expensive; exposure to additional reputational risks if social component of project goes wrong
	Social benefits		
	Technology transfer		
Aggregation	Credits from portfolio of projects	Cheaper credits; minimises risk of underperforming (non-delivery, impermanency)	Credit cannot be associated to individual project; credit's credibility could be affected by any individual project in portfolio (higher probability of reputational risks); non-customisable
	Credits from individual project	Credits can be associated with a particular project (can provide positive PR and improved CSR position); customisable	Expect higher credit prices; higher exposure to underperformance and credibility risks
Guarantees	Provide guarantees against non-delivery, permanence issues, or changes in baseline	Cover against uncertainties; provides insurance for biological sink projects	Expect higher credit prices
Labelling	Carbon neutrality stamp	Provides positive PR and improved CSR position	Exposure to label brand risk

Figure 4: Key questions for validity test

Verification



Additionality

NOTE: additionality is a difficult concept and testing it could prove to be a complex process; the following diagram provides very basic questions to ask offset providers to prove additionality. For a more detailed analysis refer to the toolkit for the demonstration and assessment of additionality from the UNFCCC (http://cdm.unfccc.int/EB/Meetings/022/eb22_repan8.pdf).

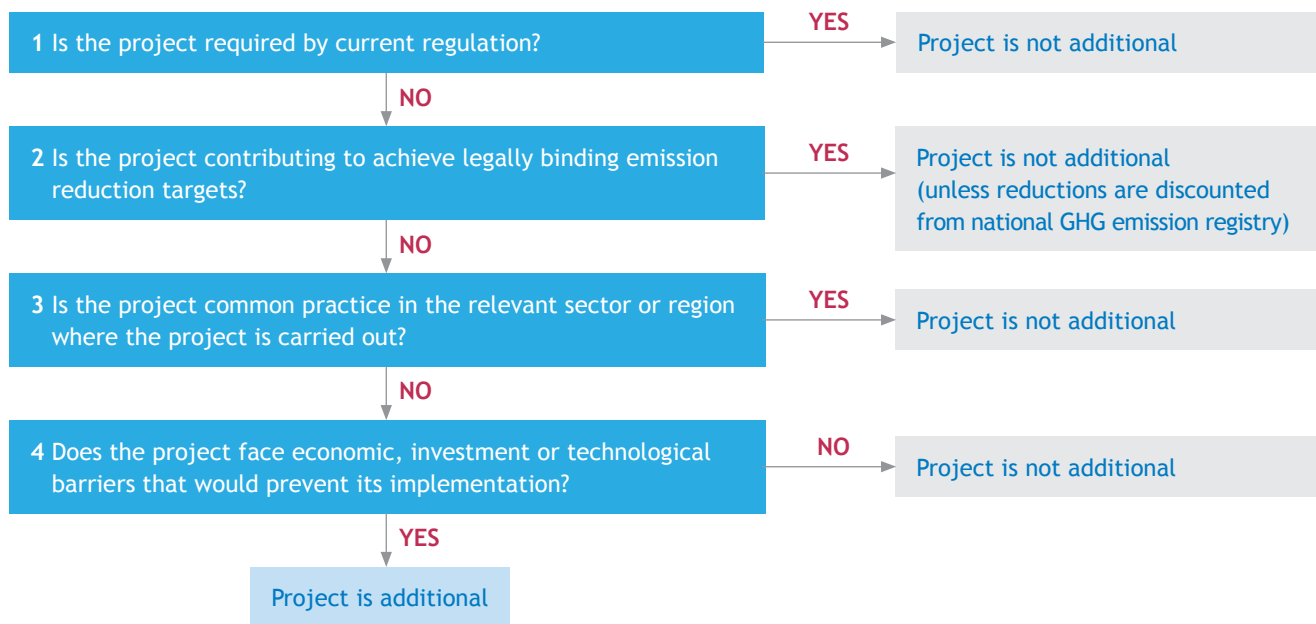
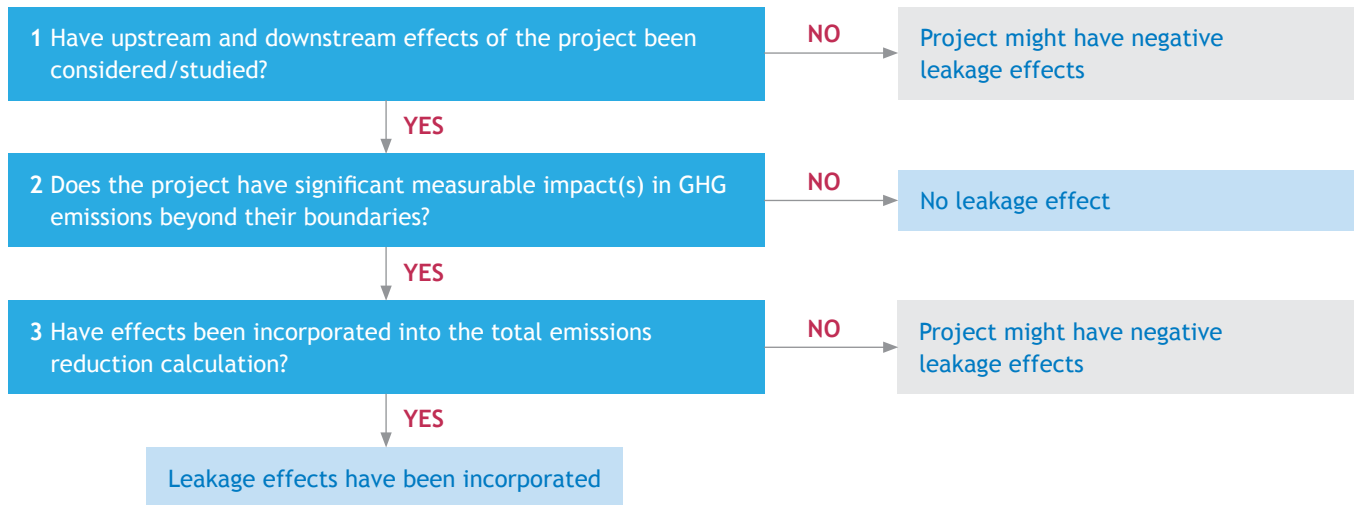
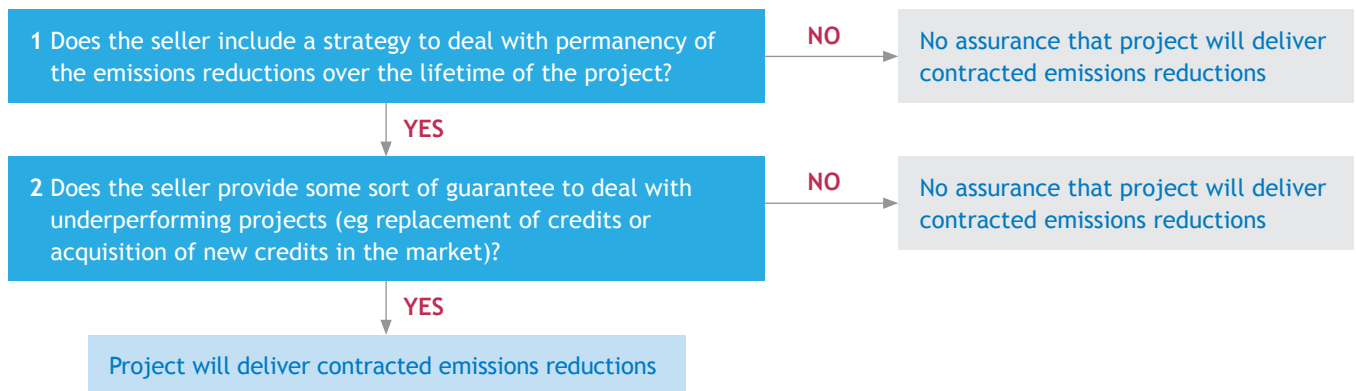


Figure 4: Key questions for validity test (cont.)

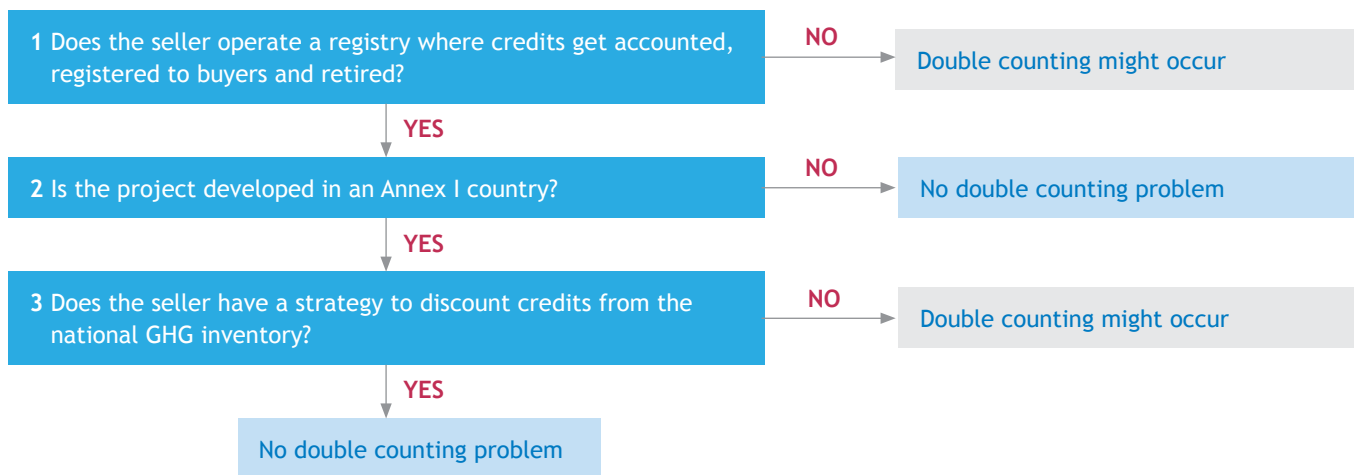
Leakages



Impermanency



Double Counting



Conclusion

The three stage process, together with the essential information on offsets provided in this guide, should give companies and organisations interested in offsetting all the relevant information to help them put together a robust carbon management strategy.

By following a strategy that firstly focuses on direct and indirect emissions before offsetting, organisations should obtain business benefits in addition to carbon savings. This strategy should improve an organisation's bottom line through cost-saving measures and improved operational efficiency, help them exploit new revenue opportunities from new low-carbon products and services, and improve their corporate social responsibility position and reputation by demonstrating the organisation's commitment to mitigating climate change directly by reducing its own emissions and carbon footprint.

Ultimately, this strategy should help organisations to mitigate climate change in a way that is environmentally sound and cost effective.

www.carbontrust.co.uk
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Making business sense
of climate change

The Carbon Trust works with business and the public sector to cut carbon emissions and capture the commercial potential of low-carbon technologies.

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