

A glossary of carbon markets

Key terms and concepts for the agricultural industry

Additionality – A demonstration that carbon sequestration and/or reductions in GHG emission associated with the adoption of new land management practices would be greater than the “business as usual” scenario and would not happen without incentives from the carbon markets.

Abatement – Refers to reducing the amount of GHG emissions released to the atmosphere (from soil) and/or increased amounts of (soil) carbon sequestered in the environment via the removal of GHGs already in the atmosphere. Net abatement (net sequestration) refers to the combined action of both to achieve an overall reduction in the concentration of GHGs in the atmosphere.

Assessment Framework (AF) – a new proposed standard for ensuring high-quality carbon credits, proposed and created by the Integrity Council on Voluntary Carbon Markets (ICVCM). This is being developed and consulted on in conjunction with the Core Carbon Principles. The Framework proposes a process for assessing eligibility, tagging, and enforcement of carbon credits.

Baseline – A baseline scenario assumes the continuation of pre-project conditions, including agricultural management practices. This forms the reference point for determining the outcomes from a soil carbon project with the use of MRV. For soil carbon projects, baselines may be dynamic or fixed. The former will be updated throughout a project while the latter will reflect conditions prior to the start of a project.

Carbon brokers – an individual or company that work with buyers and sellers of carbon credits to facilitate carbon trading. This can be driven by buyers looking to source offsets, or matching creators of carbon credits with a market. Brokers are not themselves regulated, so buyers and sellers should exercise due diligence before engaging with a broker.

Carbon credit – This is the unit of accounting used in carbon markets. One credit unit should be equivalent to 1 ton CO₂e. Verifiable soil carbon credits will be determined through the relevant quantification approach and MRV methods.

Carbon Credit Units – Each Carbon Standard has a particular geographical and sectoral scope and its own Carbon Credit Unit that represents 1tCO₂e. e.g.

- WCU- Woodland Carbon Unit (WCC)
- PCU- Peatland Carbon Unit (PCC)
- VCU – Verified Carbon Units (VCS)
- VERs– Verified Emission Reductions (GS)
- ERTs– Emission Reduction Tons (ACR)
- PVCs– Plan Vivo Certificates (PVCs)

Carbon dioxide equivalent – CO₂e is the shorthand for carbon dioxide equivalents which is the standard unit in accounting for carbon credits. This unit enables atmospheric reductions in non-CO₂ GHGs to be included in carbon credits. Non-CO₂ GHGs are converted to CO₂e based on their global warming potential.

Carbon farming – this is a relatively new term to describe farming according to agricultural practices that will increase (soil) carbon capture within the agricultural land involved. Increased soil carbon may be the main aim of these practices, or a by-product of other agricultural goals. While often used interchangeably with ‘regenerative agriculture’, the latter implies the potential for broader environmental or biodiversity benefits.

Carbon finance – finance that intends to reduce the impact of greenhouse gas emissions. The term can refer to the concept or methodology of channelling finance towards emissions reducing activities, or the flow of finance or investments themselves.

Carbon leakage – Leakage is used to account for increased GHG emissions or losses in carbon sequestration beyond a project boundary which have occurred as a result of the project. For example, lower productivity or intensification of land use or management elsewhere.

Carbon market – Carbon credits are tradeable in a carbon market. The voluntary carbon market (VCM) supports the trade in credits issued by voluntary organisations. UK land based carbon projects generally operate in the VCM. Compliance markets reflect the trade in credits to meet legal compliance obligations.

Carbon Offset Standards – recognised standards, protocols or/and methodologies to guide GHG quantification, monitoring and reporting.

Carbon Registries – used to track all credits generated, transferred and tradable in a VCM and trace transactions between buyers and sellers.

Carbon disclosure – when a body, organisation or company discloses the environmental impact and risks of their operations in relation to greenhouse gas emissions. This is currently optional in the private sector, although there is increasing numbers of bodies opting into the process, and some governments (e.g. USA) are considering requiring carbon disclosure for bodies providing public services or employed/contracted by the state. Organisations such as the Carbon Disclosure Project enable such bodies to report disclosures transparently, and support insights and improvement on the data.

Climate finance – similar to carbon finance, this refers to finance aimed at reducing emissions, but also more broadly to addressing the impacts of climate change, so can be considered to include finance for climate adaptation or compensation (e.g. Loss & Damage).

Code – The GHG accounting rules that determine project eligibility, additionality, and baseline and project emissions for a particular project type. The code also includes the program requirements for monitoring, reporting, verification, and certification. The terms code, protocol, and methodology are often used interchangeably. Examples, The Woodland Carbon Code

Compliance markets – emissions markets that are linked to meeting of mandatory/regulatory emissions targets e.g. Cap & Trade. This can relate to national emissions targets which countries are legally committed to, or in some cases sectoral or regional targets (based on the individual country).

Core Carbon Principles – a new proposed standard for ensuring high-quality carbon credits, proposed and created by the Integrity Council on Voluntary Carbon Markets (ICVCM). This is being developed and consulted on in conjunction with the Adjustment Framework. The 10 principles include additionality, transparency, no double-counting, permanence, governance, robustness, and registry. For full details see: <https://carboncredits.com/integrity-council-unveils-core-carbon-principles-for-consultation/>

Corresponding adjustments – Part Article 6 of the Paris Agreement, corresponding adjustment is a stipulation intended to guard against double-counting of emissions reductions. When Parties transfer a mitigation outcome internationally to be counted toward another Party's mitigation pledge, this mitigation outcome must be 'un-counted' by the Party that agreed to transfer it. While this seems straightforward, questions around how and when a corresponding adjustment should be applied remain contentious.

Crediting period – The period over which credits can be generated for a project, typically between 7 and 25 years. For some codes, a crediting period can be renewed at the end of the term.

ETS (Emissions Trading Scheme) – a scheme that enables trading of emissions allowances to support meeting emissions reduction targets. There are various regional schemes globally, although the best known is the EU ETS, based on the model of capping emissions by country, and trading allowances not used in the country's quota to another country that has exceeded its emissions targets. The EU 'Cap & Trade' aims to reduce allowances year by year, keeping the market buoyant as well as further incentivising emissions reduction.

ERPAs – "Emission Reduction Purchase Agreements", a contract between buyer and project developer for carbon offset credits, no intermediaries.

Futures market – a market where the commodity or services is traded with the agreement to deliver the underlying asset at a set future date at a set price, e.g. cereals bought at a locked-in price by buyers, decreasing the risk of price post-harvest. When a futures contract expires, the buyer and seller are both obligated to buy/sell and accept/deliver the underlying asset. Intercontinental Exchange (ICE) launched its Carbon Futures Index Family in early 2022, which accounts for 95% of global exchange traded volumes. Trading based on future price of carbon credits helps to stabilise and predict the price of carbon while de-risking investment in carbon markets through giving investors an asset to hedge against future price changes. This is a practice used to mitigate other common financial risks such as credit, interest rate and default risk.

Forward selling – Agreeing to sell an asset at a set future date at a set price; The transactions that constitute a futures market; Financial instrument used in a risk management strategy for the purpose of hedging.

Gold Standard (GS) – one of the main carbon credit registries for voluntary carbon credits (alongside VERRA). The GS is a non-profit organisation which provides quality assurance to voluntary carbon markets and non-governmental carbon reduction projects such as the Clean Development Mechanism (CDM).

Histosols – Histosols (from Greek histos, "tissue") are soils that are composed mainly of organic materials. They contain at least 20–30 percent organic matter by weight and are more than 40 cm thick. Bulk densities are quite low, often less than 0.3 g cm³. They are often referred to as peats and mucks and have physical properties that restrict their use for engineering purposes. These include low weight-bearing capacity and subsidence when drained. Histosols are divided into five suborders: Folists, Wassists, Fibrists, Saprists and Hemists. Most Histosols form in settings such as wetlands where restricted drainage inhibits the decomposition of plant and animal remains, allowing these organic materials to accumulate over time. As a result, Histosols are ecologically important because of the large quantities of carbon they contain. These soils occupy approximately 1.2 percent of the ice-free land area globally.

ICVCM – integrity council for carbon credits – helps to resolve concerns in the market, create threshold of trust – assess all GHG accrediting programs and come up with list of which is credible – can we come up with a step by step of compliance/checklist

IETA – Emission reduction purchase agreement – IETA – international emissions trading association has one – should be base of any transaction, a lot of time spent developing these

Insetting – Insetting refers to the financing of climate protection projects along a company's own value chain that demonstrably reduce or sequester emissions and thereby achieve a positive impact on the communities, landscapes and ecosystems associated with the value chain. Example: A retailer paying a supplier to convert to regenerative agriculture to increase carbon storage in soils and therefore reducing the product emissions.

Mitigation Hierarchy– This means companies should commit to reduce value chain emissions and implement strategies to achieve these commitments as their main priority before acting outside their value chains. Emission reductions must be the overarching priority for companies, and the central focus of any credible net-zero strategy.

MRV – MRV (Monitoring / Measurement, Reporting and Verification) is a key component of all carbon projects. Information from a carbon project is measured / monitored and reported on a regular basis throughout the crediting and permanence periods. A verification stage then validates that a project has performed as predicted and that anticipated carbon outcomes have been realised, based on the reporting. The terms monitoring or measurement are used interchangeably across the market-place

MRV method – Guidance and requirements for MRV are generally stipulated in a MRV Method or Protocol document approved and issued by a carbon programme organisation. Specific MRV approaches for a soil carbon project will reflect their application of this MRV document to the project's circumstance.

NbS– Nature-based Solutions projects in areas such as projects in Forestry, Agriculture and Blue Carbon.

Net negative –tons of GHGs avoided, reduced or removed that exceed the unabated GHG emissions.

Offsets – the use of carbon credit creation in one place (through emissions reduction, capture or sequestration) to counteract emissions produced in another. Offsets operate through the trading of carbon credits, and represent a fast growing market globally. Agricultural land use has potential to create offsets (in a small amount) through soil carbon sequestration, and (in a larger amount) from activities such as woodland creation and peatland management. There is much debate about the accountability and ethics of offsets, and greenwashing is a major concern.

Offset methodology – an offset methodology is a component of designing a project for carbon credit creation. It defines the rules that a project developer needs to follow to establish a project baseline and to determine project additionality, to calculate emission reductions, and to monitor the parameters (e.g., electricity produced by the project) used to estimate actual emission reductions.

Oxford Offset Principles – a framework developed in 2020 by Oxford and associated academics, to help guide impactful and transparent climate change reduction through offsetting. There are 4 main principles, including prioritising emissions reduction, removal and storage, and supporting net-zero market development.

Peatland Carbon Code– is a voluntary certification standard for UK peatland projects wishing to market the climate benefits of peatland restoration and provides assurances to voluntary

carbon market buyers that the climate benefits being sold are real, quantifiable, additional and permanent. The peatland carbon code is based on emissions reductions achieved by restoring degraded peatland.

Pending Issuance Units (PIUs)– are used in both the woodland and peatland carbon codes and is effectively a ‘promise to deliver’ a Woodland Carbon Unit or Peatland Carbon Unit in future, based on predicted growth. It is not ‘guaranteed’, and cannot be used to report against UK-based emissions until verified but can be sold to provide capital for a project.

Permanence – Permanence is a necessary condition for carbon projects to demonstrate that carbon credits reflect a long-term removal of GHGs. For soil carbon projects, this generally means the continuance of the positive carbon management practices to ensure that there are no reversals.

Permanence period – The defined time period that sequestered C must remain sequestered during the period of the offset credits. The permanence period is individually defined by each code and can vary from one code to another.

REDD– “Reducing Emissions from Deforestation and forest Degradation”

Registry – Programme registries are the platforms which enable the trading of carbon credits. A registry facilitates the transparent listing of information on registered carbon projects including issued and retired carbon credits units.

Reversal – Reversals are a component of permanence and used to account for losses from a project’s net sequestered carbon. Reversals can be intentional e.g., ploughing or unintentional e.g., extreme weather.

SBTi– The Science Based Targets Initiative is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). The SBTi hold companies accountable to their emissions reductions targets ensuring scientifically proven achievable targets are set by companies.

Sequestration– the capturing, removal and storage of carbon dioxide (CO₂) from the earth's atmosphere.

Spot market – a market where the commodity or services is traded with immediate delivery. Different asset types are traded on spot market such as financial instruments (shares in a company or equity, bonds, treasury bills, foreign exchange) and commodities (energy, metals, agriculture and livestock). Sometimes called the ‘cash’ or ‘physical market’ because cash payments are processed immediately and there is a physical exchange of assets. This is in contrast to forward or futures markets, where parties agree to deliver an asset in the future at a specified price.

TNFD = organisation leading framework, gov supported and corporate/financial insists, risk management and disclosure framework

Validation – An independent process for the evaluation of a carbon project plan to establish that the project should achieve the predicted carbon abatement and meets relevant eligibility and other programme criteria.

Value Chain Emissions– Can mean a company’s scope 3 emissions. However, sometimes the term value chain is used more broadly and includes both a company’s operational (scope 1 and 2) emissions as well as scope 3.

Verification – The process used to ensure that a carbon project continues to meet the standards and requirements set down by organisations issuing carbon credits, to ensure that carbon is fully accounted for and ultimately to verify carbon credits, with verification carried out by an accredited independent verifier.

Verifier – An accredited (reputable, competent) and independent person or persons with responsibility for performing and reporting on the verification process.

VERRA – one of the main carbon credit registries for voluntary carbon credits (alongside The Gold Standard). VERRA is a non-profit and the first organisation to create an internationally recognised methodology to provide quality assurance to voluntary carbon markets.

VCM (Voluntary Carbon Markets) – the market for optional carbon credits to be traded, as opposed to compliance carbon markets for carbon credits linked to legally determined emissions reduction targets. VCMs are fast growing, with increasing interest from the private sector to offset emissions for CSR and marketing purposes.

VCMII – Voluntary carbon markets integrity initiative – clarity on the supply side (as well as ICVCM on demand side)

VVBs – Validation and Verification Bodies, third-party bodies.

VCCs – Voluntary Carbon Credits, purchased voluntarily in a Voluntary Carbon Market

Woodland Carbon Code–The Woodland Carbon Code (WCC) is the quality assurance standard for woodland creation projects in the UK, and generates high integrity, independently verified carbon units. The woodland carbon code is based on the sequestration of carbon in growing woodlands.

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