

SPECIAL FEATURE

THE NET ZERO TARGET:

THE VOLUNTARY

CARBON MARKET

ENTERS A NEW

DIMENSION

GLOBAL
SYNTHESIS
REPORT
ON CLIMATE
ACTION
BY SECTOR
2022



CLIMATE
CHANCE



IN PARTNERSHIP
WITH

ecoact
an atos company



WORLD
NET
ZERO

SWEPT BY THE NET ZERO WAVE, THE VOLUNTARY CARBON MARKET DRIFTS TOWARDS NATURE-BASED SOLUTIONS..... 184

THE NET ZERO TARGET: THE VOLUNTARY CARBON MARKET ENTERS A NEW DIMENSION

1. CARBON CREDITS, AN INSTRUMENT OF ACTION TO ADDRESS THE CARBON NEUTRALITY CHALLENGE..... 186

Planet-wide carbon neutrality: A scientific and political objective..... 186

2. VOLUNTARY CARBON MARKETS SWITCH TO NATURE-BASED SOLUTIONS..... 191

Nature-based solutions are taking root; removal projects are still at an early stage..... 191

Beyond carbon: the co-benefits of compensation projects increase the value of the credits..... 194

3. INTERNATIONAL REGULATORY FRAMEWORKS FOR CARBON MARKETS ARE BEING STRENGTHENED..... 195

Rules for the application of Article 6 of the Paris Agreement adopted at COP26..... 195

Article 6.4 seals the end of the Clean Development Mechanism..... 197

Under pressure from the pandemic, CORSIA fails to take off..... 197

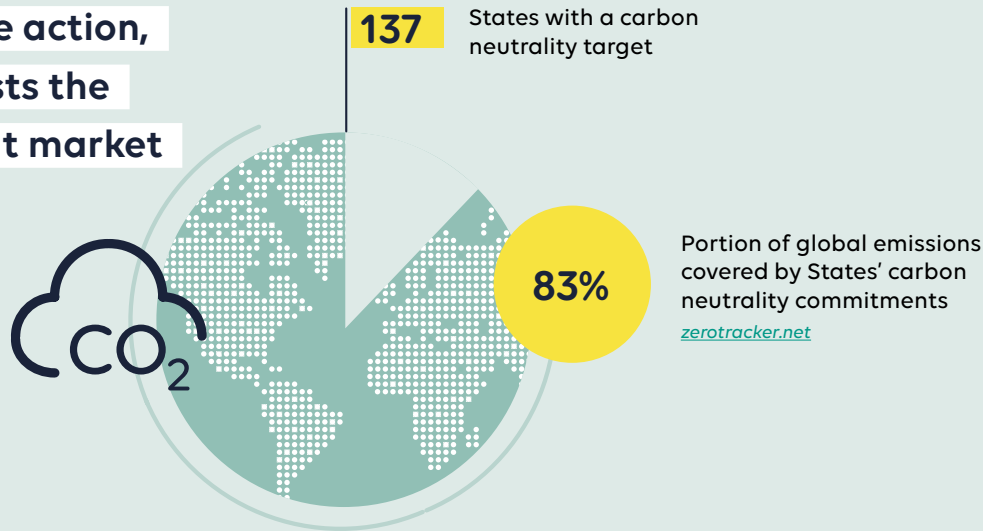
4. GOVERNANCE OF THE VOLUNTARY CARBON MARKET IS TAKING SHAPE..... 198

New standards to regulate "claims"..... 198

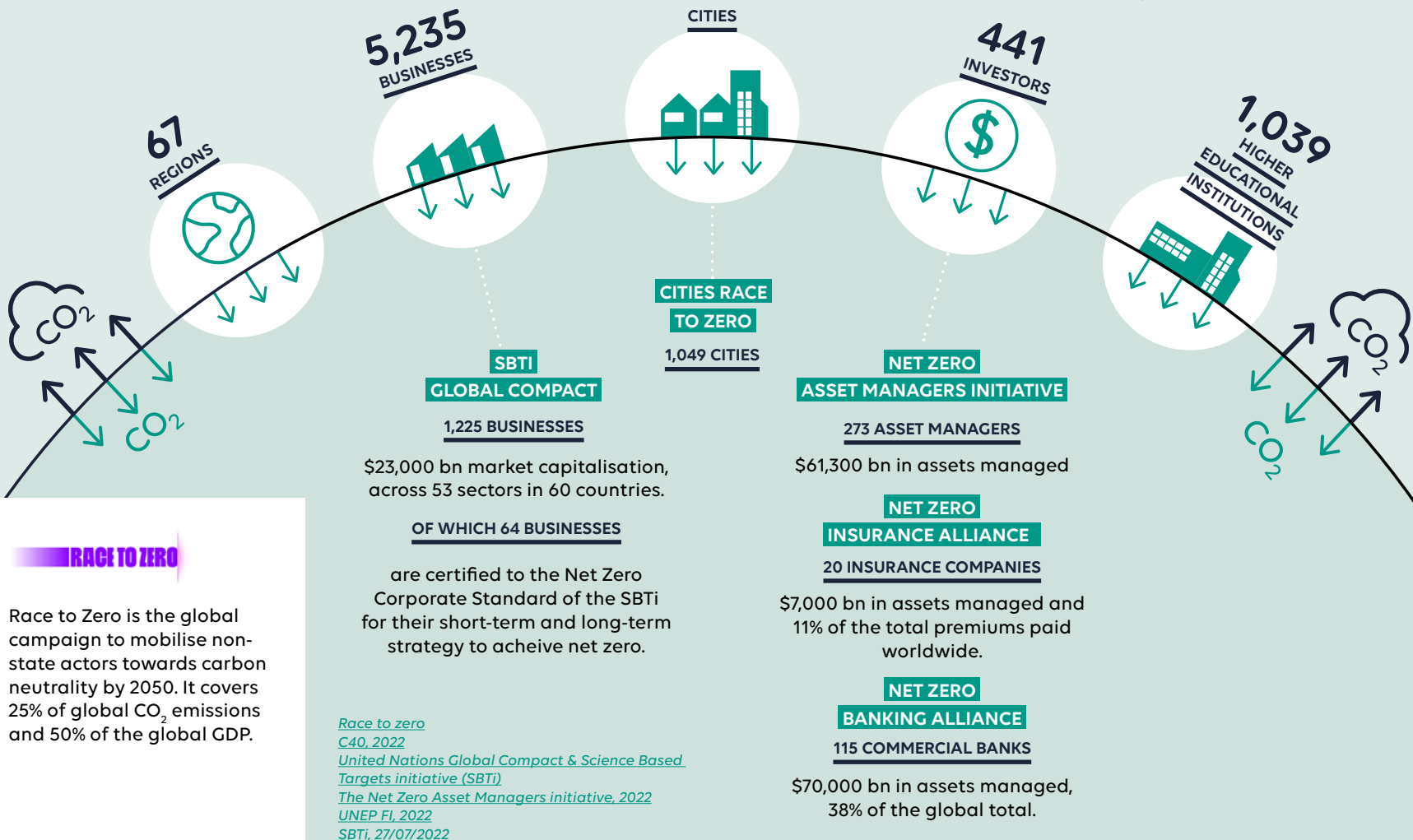
Standards for building a common approach to offsetting aligned with the Paris Agreement..... 199

SWEPT BY THE NET ZERO WAVE, THE VOLUNTARY CARBON MARKET DRIFTS TOWARDS NATURE-BASED SOLUTIONS

A barometer of climate action, carbon neutrality boosts the voluntary carbon credit market



NON-STATE ACTORS COMMITTED TO THE RACE TO ZERO CAMPAIGNE



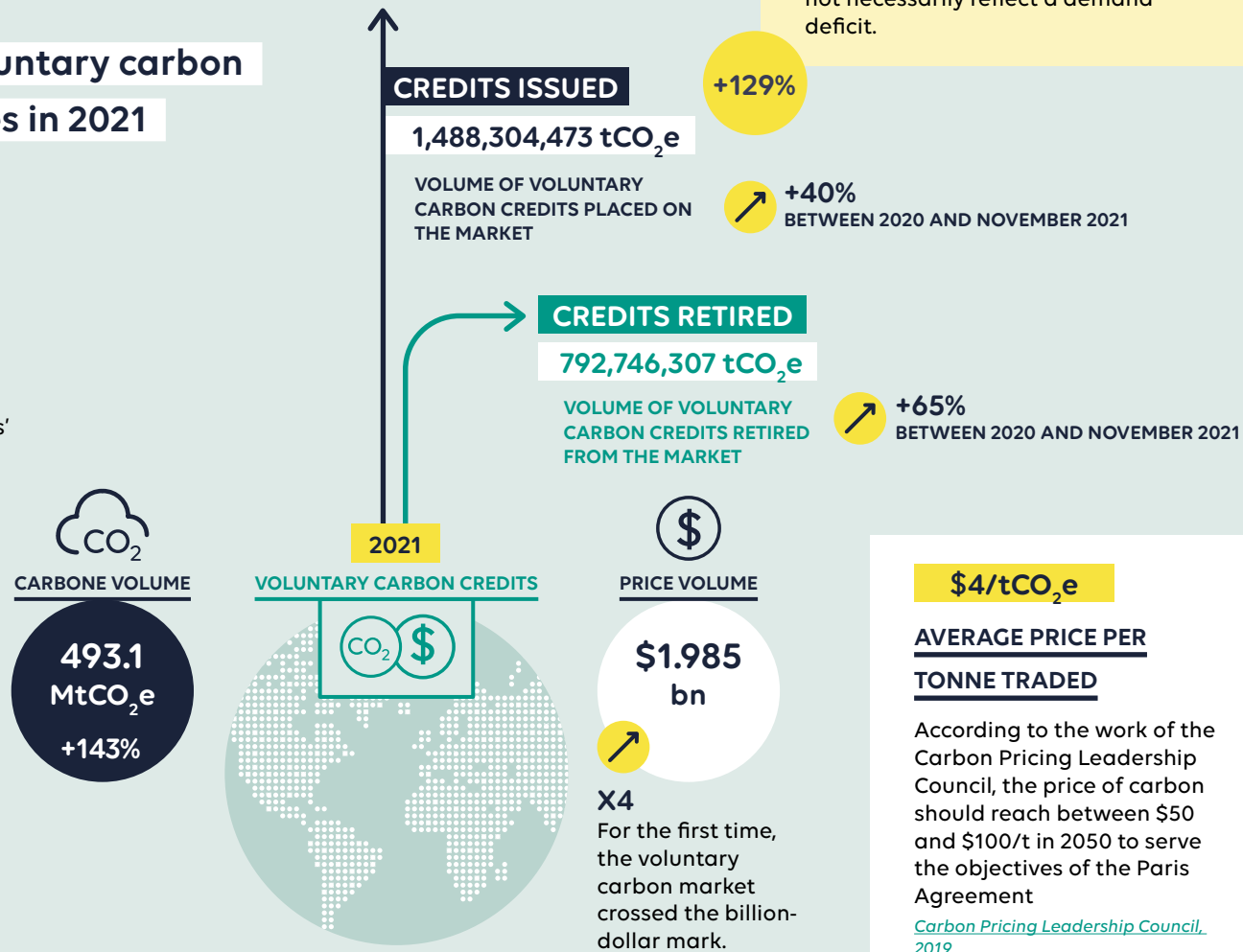
The volume of carbon credits issued exceeds the volume of credits retired by 129% over the first 11 months of 2021. The difference is due in particular to the stocks of credits accumulated by intermediaries, and therefore does not necessarily reflect a demand deficit.

The size of the voluntary carbon market quadruples in 2021

VOLUME OF VOLUNTARY CARBON CREDITS EXCHANGED GLOBALLY IN 2021

Over 2021, traded carbon credits' value quadrupled and carbon volume increased by 143%.

[Ecosystem Marketplace, 2022](#)



A market shifting towards Nature-based Solutions

\$75 bn

APPROVALS OF REDD+ PROJECTS

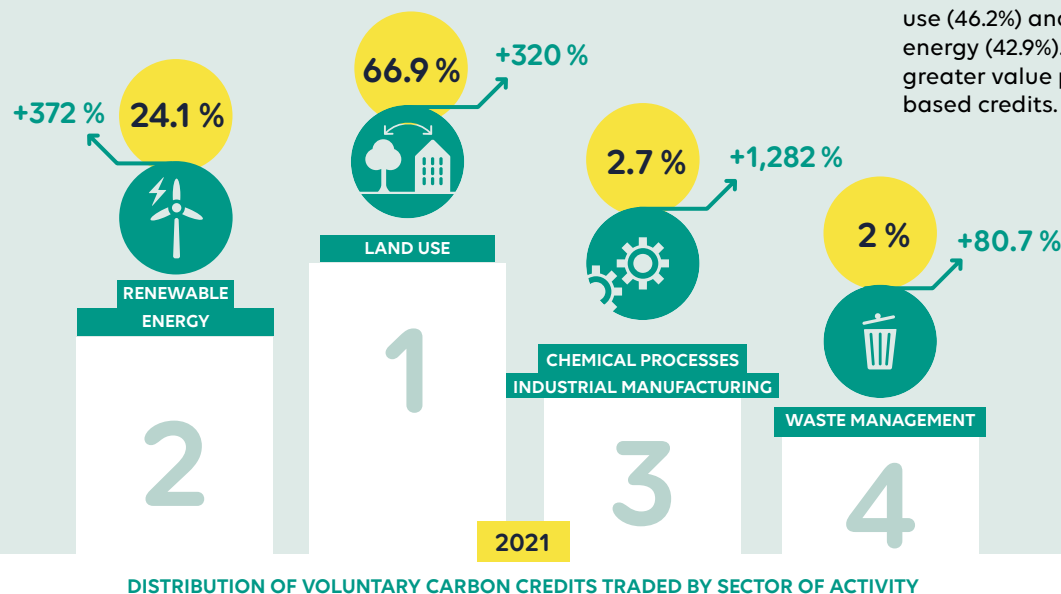
In 2021, only 75 million dollars of REDD+ conservation projects were approved, well below the annual average of 263 million dollars for the five preceding years. Approvals have shifted however more in favour of projects integrating results-based payments.

[Heinrich Böll Stiftung, 2022](#)

CREDITS LINKED TO LAND USE OVERTAKE THOSE RELATED TO RENEWABLE ENERGY PROJECTS

[Ecosystem Marketplace, 2022](#)

Nature-based carbon credits occupy more than two thirds of the market in value. In particular, credits with biodiversity co-benefits are highly valued. The last month of 2021 saw almost as many carbon credits traded as the rest of the year, by value. In contrast, carbon volumes are more balanced: 227.7 MtCO₂e for land use (46.2%) and 211.4 MtCO₂e for energy (42.9%). This is a sign of the greater value placed on nature-based credits.





The Net Zero target: The voluntary carbon market enters a new dimension

ANTOINE GILLOD • Director, Global Observatory of Climate Action, Climate Chance^a

Born from the 1997 Kyoto Protocol, the voluntary carbon market has taken up much space in debates of recent years on the transition pathways to “carbon neutrality”. Now in full swing, the purchase and sale of carbon credits according to an emissions offsetting logic is being driven by a wave of non-state commitments towards “Net Zero”. More than an arithmetic tool to balance the carbon footprint accounting of organisations, the trading of carbon credits is emerging as a channel for mobilising private capital at the service of mitigation projects. The market is progressively becoming regulated, the instruments are multiplying, and the volumes traded are increasing; but in the absence of universal regulation and standardisation of practices, financialization of the market raises concerns about the integrity of projects and the claims of “carbon neutrality” made by companies. This “special feature” of the 2022 Global Synthesis Report on Climate Action by Sector presents a panoply of recent regulatory trends, initiatives, and instruments for tracking carbon credit transactions.

1. CARBON CREDITS, AN INSTRUMENT OF ACTION TO ADDRESS THE CARBON NEUTRALITY CHALLENGE

Planet-wide carbon neutrality: A scientific and political objective

The 197 States that signed the 2015 Paris Agreement set themselves the goal of “holding the increase in the global average temperature to well below 2 °C compared to pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels” (Article 2). To achieve these goals, the Parties have agreed to “reach global peaking of greenhouse gas emissions as soon as possible [...] and to undertake rapid reductions thereafter [...] so as to achieve a balance between anthropogenic emissions from sources and removals by sinks” by 2050 (Article 4.1).

This commitment establishes the concept of carbon neutrality, defined by the Intergovernmental Panel on Climate Change (IPCC) in its special report on the consequences of global warming of 1.5 °C. The report assesses the possible pathways available for staying within the carbon budget imposed by a 1.5 °C trajectory and concludes:

“Staying within a carbon budget of 580 GtCO₂ means that the CO₂ emissions would reach carbon neutrality in about 30 years; this period is reduced to 20 years for a residual carbon budget of 420 GtCO₂ (high level of confidence).”

In this context, achieving carbon neutrality means reducing net CO₂ emissions to zero: “This means that the amount of CO₂ entering the atmosphere must equal the amount removed.” This goal is sometimes restricted to carbon dioxide, the main source of greenhouse gases in the world (about 72%),

^aThe author warmly thanks Emilie Alberola, Anouk Faure et Mathieu Salel (EcoAct) for their advices and prood reading, as well as Renaud Bettin (Sweep), Gilles Dufresnes (Carbon MarketWatch), César Dugast and Arthur Pivin (Carbone4), Harold Levrel (CIRED, AgroParis Tech), Amaury Parelle (Transitions-DD), Saverio Ragazzi and Lucas Winkelmann (Geres), for sharing analysis and informations.



or extended to other greenhouse gases with greater global warming potential (GWP), such as methane (CH₄), nitrous oxide (N₂O) or sulphur hexafluoride (SF₆). Regardless of the entry route or scope of gases included in the strategy, reduction of climate change boils down to two physical objectives which the actors can implement using three levers:

- Objective 1: Limiting the flows of greenhouse gases emitted into the atmosphere (level 1: **avoiding** emissions and level 2: **reducing** emissions);
- Objective 2: Increasing the flows captured and sequestered by natural carbon sinks (forests, oceans) or technological ones (direct air capture, capture and sequestration of carbon at factory outlets, etc.) (level 3: **removing** carbon emissions).¹

From this perspective, offsetting emissions with carbon credits on the voluntary carbon market (VCM) is one financial instrument among others, which is available to actors, enabling use of one of these three levers. A carbon credit can be defined as a deed that certifies the reduction, avoidance, or removal of a certain quantity of emissions by a project somewhere in the world: installation of renewable energy generation capacity, improvement in energy efficiency, woodland conservation, creation of new green areas, etc. Once issued, the credit can either be placed in the assets of the project leader who wishes to have its impact on GHG emissions recognised, or be put for sale on the voluntary market (*issuance*).

For the organisation that sells carbon credits on the voluntary market, the objective is to finance its project through an influx of private capital obtained through the sale of credits. By doing so it renounces claiming for itself the emissions reduced, avoided, or removed thanks to its project.

For the organisation that purchases credits on the voluntary market, its investment is generally motivated by the prospect of being able to credit the mitigation results obtained by the project in its own carbon footprint. By doing so, it may wish to eventually claim a form of “carbon neutrality” (included in its climate strategy) to highlight its mitigation efforts, once the remaining volume of emissions following its own reduction efforts equals the compensated volume of emissions. Once included in the carbon accounting of an organisation, the credit can no longer be traded on the market; the credit is then said to be “retired” (*retirement*).

In the absence of universal regulation of the voluntary carbon market, both the quality control of certified projects and the verification of the integrity of the climate strategy of the organisation purchasing credits are the subject of numerous technical, political, and even philosophical controversies. Within these discussions, it is necessary to distinguish those that concern each of the three key elements of the voluntary carbon market:

- the “carbon credits”, in other words, the rules and methodologies that govern the certification of the impact on emissions of a mitigation project;
- the “market”, that is, the rules and credit trading conditions between sellers, buyers, and intermediaries;
- the “compensation”, which relates to the criteria an organisation has to abide by to claim for itself the mitigation results obtained by the purchase of carbon credits, and then communicate its own “carbon neutrality” regarding the robustness of its climate strategy and its reduction efforts.

BOX 1 • KEYS TO UNDERSTANDING

CARBON PRICING, A SINGLE CONCEPT FOR MULTIPLE INSTRUMENTS

The World Bank defines **carbon pricing** as “an instrument that captures the external costs of greenhouse gas (GHG) emissions – the costs of emissions that the public pays, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise – and ties them to their source through a price, usually in the form of a price on the carbon dioxide (CO₂) emitted.” Various mechanisms put a price on carbon:

- The **Emissions Trading System (ETS)**, where “cap and trade” are intended to bring about emissions reductions of regulated emitters. These markets operate according to the “polluter-pays” principle as applied to GHG emissions: each emitter is allocated an emission quota beyond which it is forced to change its activities to reduce its sources of emissions, or to purchase other quotas from companies that have not exceeded their own limit. The evolution of the price then depends on the level of constraint applied to the supply of credits allocated on the market compared to the demand – the objective being to reach a price high enough to encourage

companies to prefer undertaking transformational measures rather than resorting to the purchase of quotas.

- The “**baseline-and-credit**” markets, such as those provided by Article 6 of the Paris Agreement (**see below**), which entails generating carbon credits based on the reduction of emissions compared to a reference scenario (business-as-usual). There is, therefore, no limit to the number of available credits. The purchase of these credits, in a carbon offsetting approach for example, makes it possible to finance the mitigation project.
- A **carbon tax** is a fiscal instrument which, while also adhering to a “polluter-pays” logic, predetermines a certain level of levy on the emission of one tonne of CO₂.

There are other mechanisms, such as the **results-based climate finance**, which delivers funds as a function of emission goals set beforehand, or the **internal carbon pricing**, set by organisations to guide their decisions based on the opportunity costs represented by the reduction of emissions.

Source: [World Bank, Carbon Pricing Dashboard](#)



This study intends to draw up an inventory of the dynamics of the voluntary carbon market, and to analyse recent changes in the rules and standards governing the use of carbon credits and the communication surrounding carbon neutrality.

Net zero and carbon neutrality, a barometer of the voluntary strategies of the actors

The carbon neutrality concept was initially conceived on a planetary scale: since emissions have no borders, the concentration of GHG in the atmosphere is non-discriminatory and its effects are felt on the entire globe. However, since its definition in major international agreements and in the work of the IPCC, States and non-state actors have gradually appropriated the language of “neutrality”, both as the ultimate goal of their emission reduction strategies, and as a narrative framework for describing their transition.

The vast majority of States have now set carbon neutrality at various deadlines aligned with their climate strategies. Since Sweden first adopted carbon neutrality in June 2017, the 137 countries which have formulated a “net zero” goal now cover 83% of global emissions, 90% of GDP and 85% of the population according to Net Zero Tracker.² While the IPCC talks of achieving global carbon neutrality by mid-century, the deadline set by States on their own emissions scope varies according to the country and the levels of emissions, from Costa Rica’s 2021 target to India’s 2070 target. Bhutan and Suriname are today the only two countries said to have a “negative” carbon balance, i.e., whose GHG emissions are lower than their absorption.³ The quality of these commitments is assessed against the precision of the detailed plans and strategies to achieve the objective of carbon neutrality, by independent organisations such as [Climate Action Tracker](#).

BOX 2 • KEYS TO UNDERSTANDING

CARBON NEUTRALITY TERMS

“Carbon neutrality”, “Net Zero”... The Glossary of the IPCC Group III Climate Change Mitigation Report, published in April 2022,⁵ has updated the definition of the various terms in use:

• **Carbon neutrality** refers to the condition “*in which anthropogenic carbon dioxide (CO₂) emissions associated with a subject are balanced by anthropogenic CO₂ removals. The subject can be an entity such as a country, an organisation, a district or a commodity, or an activity such as a service and an event. Carbon is often assessed over the life cycle including indirect (“scope 3”) emissions, but can also be limited to the emissions and removals, over a specified period, for which the subject has direct control*”. Greenhouse gas neutrality applies more broadly to all greenhouse gases (CH₄, SF₆, N₂O, etc.), and not just to carbon dioxide, as in the definition of “carbon neutrality”.

• **Net zero CO₂ emissions** refer to the condition “*in which anthropogenic carbon dioxide (CO₂) emissions are balanced by anthropogenic CO₂ removals over a specified period*”. **Net zero GHG emissions** also include all gases. The difference between “net zero” and “carbon neutrality” sometimes remains unclear and varies according to use. The IPCC holds that at the

Since 2015, the UNFCCC secretariat has wanted to extend the adoption of neutrality to actors not party to the Convention. The [Climate Neutral Now](#) initiative was launched for this purpose to promote the voluntary use of carbon market mechanisms by local authorities, companies, civil society organisations, and citizens.

Today, the [Race to Zero](#) mobilisation campaign serves this purpose. Initiated by the High-Level Climate Champions Nigel Topping and Gonzalo Muñoz prior to COP26, Race to Zero listed, in February 2022, 67 regions, 1,049 cities, 5,227 companies, 1,039 educational institutions, 441 financial institutions and more than 3,000 hospitals among 52 signatory health services for carbon neutrality in 2050. All of these actors cover 25% of global CO₂ emissions and 50% of GDP. By establishing “minimum criteria” for participation in the campaign, Race to Zero aims to act as an “umbrella” initiative that encompasses many independent initiatives for actor commitment to carbon neutrality.

In October 2020, the NewClimate Institute listed **929 local governments with a net-zero commitment**, covering 880 million inhabitants and representing an emissions reduction potential of 6.5 GtCO₂/year.⁴ The [Carbon Neutral Cities Alliance](#) network brings together 22 international cities (New York, London, Rio de Janeiro, Yokohama, etc.) committed to carbon neutrality, with a view to supporting them in reducing their emissions through the implementation of transformative climate actions in the spirit of just transition.

global scale, the terms “net zero” and “carbon neutrality” are equivalent. On a smaller scale, “net zero” is restricted to emissions or removals that are under the direct control or territorial responsibility of the entity, while “carbon neutrality” also applies to emissions and removals beyond this scope. In practice, net zero can refer to a trajectory aligned with the 1.5 °C goal, such as for the Science-Based Target Initiative (SBTi, see below), whereas carbon neutrality is a state of static equilibrium between emissions and absorptions not based on any trajectory.

It should be noted that following AR6, the IPCC has adopted a broad view of the neutrality concept which allows it to be used at the organisation or product level. So far, in the special report on the consequences of global warming of 1.5 °C, “net zero emissions” was only envisaged as “*when anthropogenic CO₂ emissions are globally balanced by anthropic CO₂ uptake over a period of time. Net CO₂ emissions is also referred to as carbon neutrality*.” In other words, the carbon neutrality of organisations such as cities or companies was not mentioned here. It should be remembered in this regard that the IPCC is not a normative authority, and this broad definition of neutrality continues to be debated (**Box 3**).



At the European Union level, the [NetZeroCities](#) consortium coordinated by EIT Climate-KIC, brings together 33 partners from thirteen countries to support thirty pilot projects between cities. These projects aim to promote rapid learning on how to achieve climate neutrality at the city level. Funded by the Horizon Europe programme, NetZeroCities addresses over a four-year period (2021-2025) a Mission proposed by the European Commission in September 2020 as part of the Green Deal, “100 Climate-neutral Cities by 2030 – by and for the Citizens”. The Mission should give rise to 100 carbon neutral cities in 2030 to act as centres of innovation and experimentation with all other cities by 2050. At the national level, numerous initiatives also exist for the alignment of cities and regions with carbon neutrality, such as the [UK100 Net Zero pledge](#) in the United Kingdom, which brings together 97 signatory cities, or the RAMCC (*Red Argentina de Municipios frente al Cambio Climático*) network, with 259 member municipalities.⁶

By November 2021, **1,045 companies representing more than \$23 trillion in market capitalisation, across 53 sectors in 60 countries**, had made a commitment to formulate emission reduction objectives aligned with the 1.5 °C target based on science (*1.5 °C-aligned science-based targets*), according to a press release issued by the United Nations Global Compact and Science Based Targets initiative (SBTi) during COP26.⁷ Of the 2,000 largest companies in the world, 417 (one third of the total turnover) have set a net-zero target.⁸

This movement extends to companies operating in carbon-intensive business sectors, and even reaches companies reluctant to undertake climate action. In early October 2021, the International Council on Mining and Metals (ICMM), which brings together 28 of the largest mining companies in the world, published an open letter stating that all of its members have committed to reducing emissions and to aiming for “carbon neutrality” by 2050.⁹ Several of its members had already adopted climate plans several months previously with “carbon neutrality” as an objective. Among the major European oil companies, BP, Shell, TotalEnergie, ENI and Equinor have integrated carbon neutrality into their growth strategies.¹⁰ Even the American ExxonMobil, still embroiled in anti-climate lobbying cases, recently introduced the term “net zero” across its operations in the Permian Basin.¹¹

As regards financial actors, the [Net Zero Asset Managers Initiative](#), launched in December 2020, claims 220 signatory **asset managers** with \$57 trillion under management, committed to supporting the goal of net zero GHG emissions by 2050; similarly, the [Net Zero Asset Owner Alliance](#) claims 74 committed **institutional investors** (\$10.6 trillion in assets). The [Net Zero Banking Alliance](#) has 113 signatory **commercial banks** covering \$69 trillion of assets under management, while the more recent [Net Zero Insurance Alliance](#) brings together 20 **insurers** (\$7 trillion in assets under management). In April 2021, the [Global Financial Alliance for Net Zero](#) (GFANZ) was launched by the UN Special Envoy for Climate Action Mark Carney and the High-Level Champions in order to bring together all actors from the finance sector around the Race to Zero. It now claims 450 member firms representing more than \$130 trillion in assets under management.

Verifying the individual carbon neutrality of organisations: Corporate standards

Within the context of the mass adoption of the language of “neutrality”, the credibility of commitments (*pledges*) rests on the ability of the actors to rely on solid standards for (1) taking *inventory*, (2) setting *objectives*, (3) formulating *plans*, (4) implementing *actions*, and (5) assessing their *impact* on the reduction of emissions. For each of these steps, numerous international standards exist and are still being developed, aimed at providing both technical methodologies for verification, and a frame of reference for the interpretation and communication of the results.

Discussions about the assessment of the requirements of these standards currently revolve around several criteria for assessing their ambition:

- The degree of constraint applied by the standards on organisations to reduce their GHG emissions;
- The range of qualified carbon credits that comply with the standard for offsetting, with regard to their age (vintage) and the requirements of the project certifying body;
- The assessment method;
- Communication on the efforts made.

The PAS 2060 standard was created in 2010 by the British Standard Institution (BSI) and updated in 2014. It not only certifies organisations, but also products or events. It is now one of the most widely used standards in the world. The PAS 2060 certification process is organised according to four criteria:

- Assessing 100% of Scope 1 and 2 emissions and Scope 3 emissions that contribute more than 1% of its carbon footprint.
- Reduction of emissions according to a plan which sets out an agenda, specific reduction goals, the means to achieve them, and how to offset residual emissions.
- Offsetting surplus emissions with carbon credits that meet the additionality and permanence criteria, avoids double counting without carbon leaks.
- Documentation and verification for reporting, based on self-validation, validation by external parties, or validation by independent third parties.

PAS 2060 nevertheless suffers from a mixed reputation of its certification criteria. The weakness of the Scope 3 requirements, extensive use of compensation allowed by the standard, and the self-validation of the authorised statement weaken the credibility of the commitments. This last point means it is not possible to judge whether the efforts to reduce emissions declared by the organisation are sufficient before resorting to offsetting residual emissions. It is one of the main criticisms of PAS 2060: companies are authorised to claim being “neutral” based on 100% compensation in the first year. They



must then present a mitigation plan, but it is not subject to any minimum level of ambition.

PAS 2060 is set to serve as the basis for the future ISO 14068 standard.¹² Under preparation since February 2020, this new standard should provide a standardised definition of carbon neutrality. These terms are the object of consultations and negotiations in a workgroup (comprising representatives from almost 60 countries) which will determine its degree of ambition. In the “Preparation” phase for two years, the adoption process must undergo a long series of steps before its validation, expected in 2023. The “Greenhouse gas and climate change management and related activities” committee (ISO/TC 207/SC 7)^b steers the process; however, the committee’s site has not been updated since 2019, and little public information on the status of negotiations is available.

The **CarbonNeutral Protocol** was published for the first time in 2002. Supported by the American group Natural Capital Partners, this standard also makes it possible to certify companies, products, and activities. Like PAS 2060, the CarbonNeutral Protocol does not constrain companies regarding the degree of internal emission reduction required to obtain the CarbonNeutral® status: organisations are only “encouraged” to use the management tools to define the right balance between reduction and offsetting. Similarly, it is not required that their internal reduction efforts be “science-based”, that is, aligned with the Paris Agreement objectives. The CNP only invites organisations to use the Science-Based Target initiative to align with the 2 °C or 1.5 °C objectives.

In fact, **the Science-Based Target initiative (SBTi) is now the reference standard for assessing emission reduction strategies** with regard to the Paris Agreement objectives. As of February 23, 2022, it showed 2,530 companies committed to setting a “science-based” emissions reduction target, aligned with the 1.5 °C and 2 °C Paris Agreement objectives. Among them, 1,181 were certified “science-based”; in other words, their emission reduction objectives were approved according to the SBTi methodology.¹³ This methodology is internal to the initiative, developed by a Technical Advisory Group and a Scientific Advisory Group, bringing together companies, researchers, NGOs and certification standards.

In October 2021, SBTi unveiled its net zero standard for companies in partnership with CDP, Global Compact, the World Resource Institute, and the WWF. Called the **“Corporate Net-Zero Standard” (CNZS)**, it describes itself as the world’s first standard aimed at providing guidelines, criteria and recommendations to help companies formulate “net zero” goals that are based on science and aligned with the 1.5 °C and 2 °C Paris Agreement objectives.¹⁴ In summary, the SBTi defines “corporate net zero” as:

The reduction of Scope 1, 2, and 3 emissions to zero or to a residual level compatible with achieving net zero emissions at a global or sectoral level, in a course of action aligned

with the 1.5 °C objective (approximately 90% reduction in emissions). 95% of emissions must be covered;

- The **neutralization** of all residual emissions *in the target year* and any GHG emissions released into the atmosphere thereafter.

For their “Net Zero emissions” commitments to be “science-based” certified, companies must meet two criteria:

- Set a short-term (5-10 year) SBT objective aligned with a 1.5 °C trajectory;
- Set a long-term (2050 or beyond) SBT objective aligned with a 1.5 °C trajectory;

Optionally under the SBTi criteria, they can also:

- Take measures to remove carbon from the atmosphere and store it permanently so as to “neutralize” residual emissions;
- Carry out actions or make investments to reduce emissions outside of its value chain.

Unlike PAS 2060, the CNZS is very robust on short- and long-term emission reduction requirements. However, the CNZS is weaker on the compensation component, and does not provide instructions nor clear criteria on the quality of the carbon credits that may be used, unlike PAS 2060. Although it ties the terms of “net zero” claims to the “target year”, SBTi does not give any clear indication on the possibilities of producing this claim at an intermediate date.

So far, only 33 companies have met the first two criteria and have received the “science-based” certification for their net zero goals, the first being Holcim Ltd., CVS Health, JLL, Dentsu International, Orsted, AstraZeneca, Wipro and even Ricardo PLC. SBTi is a verification standard: it produces its assessment according to its own methodology without third-party certification. This double stance raised questions on the independence of the standard (**SEE BELOW**), to which the SBTi responded by excluding oil companies from its field of activity, and by deciding to extend the certification time frames.¹⁵ The SBTi is also developing a similar standard intended for financial institutions.¹⁶

^b See the site: <https://committee.iso.org/home/tc207sc7>

BOX 3 • KEYS TO UNDERSTANDING

IMPOSSIBLE NEUTRALITY? THE CONTRIBUTION PARADIGM

More than a semantic controversy, the discussion surrounding the “neutrality” terms divides the actors according to two paradigms regarding the possibility offered to organisations to claim to be “net zero”, “carbon neutral”, etc. On the one hand is the “offsetting” paradigm, which conceives that a company or an organisation can claim carbon neutrality on its territory or its scope of activity by offsetting its residual emissions via the financing of reduction, avoidance, or removal projects according to arithmetic logic. On the other hand is the “contribution” paradigm which only conceives carbon neutrality at a planetary level and therefore rejects the possibility of declaring “zero net emissions” at the individual actor level, preferring instead to refer to the “individual contribution to collective neutrality”. This second paradigm draws from the exclusively “planetary” definition of carbon neutrality that the IPCC used to employ. In France and abroad, the Net Zero Initiative and the companies it supports continue to advocate this approach. In June 2022, the “10 principles for an ambitious corporate climate strategy” presented by NZI adopt this restrictive conception

of carbon neutrality.¹⁷ Among the 46 signatory organisations active in supporting the climate action of companies is the Ademe, the ecological transition agency in France. This public institution had already positioned itself in this direction in two “expert opinions” on carbon neutrality (May 2021) and on its use in communications (February 2022), in which it calls on organisations to “relinquish the purely arithmetic approach to neutrality” and to “communicate in a transparent, proportionate and distinct manner on the different levers for contributing to collective carbon neutrality”. However, the Ademe still grants the possibility for States to claim neutrality at a national level.

In the context of a voluntary market, companies are essentially driven by the possibility of promoting and communicating their actions. In order to preserve this investment driver, while further incorporating corporate communications, other avenues advocate regulating “carbon neutrality” claims (see below).

2. VOLUNTARY CARBON MARKETS SWITCH TO NATURE-BASED SOLUTIONS

*“Ecological compensation corresponds to actions in favour of certain components of nature, whose objective is to produce ecological gains deemed to be quantitatively or qualitatively equivalent, or better than, ecological losses suffered elsewhere by these same components as a result of human activities”.*¹⁸ Among the ecological compensations, carbon offsetting specifically aims to address the global warming problem caused by atmospheric GHG concentrations. Carbon offsetting may be required within a regulatory framework (example: CORSIA, the voluntary offset framework for the international aviation sector), or be the subject of a voluntary approach by a committed actor. The voluntary carbon market allows the free trade of carbon credits aimed at financing projects contributing to the reduction, avoidance or removal of GHG emissions, such as energy production, energy efficiency, agriculture, or forestry. The voluntary carbon market is an important potential channel for low carbon transition projects. The voluntary carbon market differs from “polluter pays” regulations, in that it is based on the funding of field projects.

Nature-based solutions are taking root; removal projects are still at an early stage

Whether it is part of an “offsetting” or a “contribution” logic, the purchase of carbon credits in the voluntary market is booming. In its *Net Zero Stocktake 2022* report, 40% of the 702 companies listed on the stock exchange tracked by Net Zero Tracker are explicitly considering using offset credits to achieve their goals (only 2% do not, and the majority did not specify).¹⁹

For the first time, the market value exceeded the \$1 billion mark in 2021, and quadrupled year-on-year to nearly reach \$2 billion, according to Ecosystem Marketplace.²⁰ Thus nearly 500 MtCO₂e were traded on the voluntary market in 2021, at an average price of \$4/tCO₂e. Overall, these are much lower volumes than those observed in some regulatory carbon markets,^c but they do not reflect the same reality. The prices in “cap and trade” markets are directly influenced by the ratio-

^c The market value of CO₂ emission permits traded around the world increased by 164% in 2021, to reach 760 billion euros, according to the firm Refinitiv. 90% of this increase is attributable to the European Union Emissions Trading System (EU ETS), the largest in the world. While it has capped at €5/t for the majority of the time it has existed, between 2005 and 2018, the price per tonne of carbon increased in June 2022 to 88€/t (with a peak of 97€/t in February), due in particular to the drop in the volume of free allowances and the general tightening of supply. This is a level compatible with the Paris Agreement, according to the Carbon Pricing Leadership Council, which estimated in 2019 that only a carbon price of 50 to 100\$/t can have sufficient leverage to bring about the necessary changes.

ning of allocated quotas, and thus reflect the opportunity cost to the company between the purchase of additional quotas and a capital expenditure of transition. Conversely, on the voluntary market, the price of credits is mainly based on the real cost of certified projects. However, growing intermediation and increasing financing of the market, the tightening of certification standards, and the growth in demand expected in view of the net zero commitments is likely to generate a greater price variation, as observed.

Indeed, while the average prices of the voluntary market remain quite low, on the whole they increased sharply during 2021, before falling – sometimes abruptly – in the first quarter of 2022 under the effects of inflation and rising energy prices, which may have reduced demand (FIG. 2). In addition, the volume of credits issued on the market exceeded retirements by 129% over the first eleven months in 2021,²¹ whereas they were at equilibrium until 2017. This difference does not necessarily mean that the demand does not follow the growth in supply of credits. Rather, it reflects a dual market orientation towards standardised long-term contracts and increasing market intermediation. Indeed, the World Bank²² notes a trend towards the standardisation of contracts, in particular through the emergence of futures contracts in organised markets, making it possible to assemble carbon credit “package” offers that share common features (vintage, type of project, co-benefits, standards, etc.). Over-the-counter (OTC) spot contracts

between seller and buyer of credits is still the norm, but the massive entry of financial intermediaries (brokers, traders, investment funds, etc.) into the voluntary market in recent years complicates the landscape and exposes the market to speculation as it becomes more lucrative.

The voluntary carbon market is gradually shifting towards “nature-based solutions” (NbS). According to the Voluntary Carbon Market Dashboard facilitated by Climate Focus, a think tank, the issuance of NbS credits increased by almost 170% between 2020 and 2021. Representing 45.2% of the credits issued in 2021 (31.6% in 2020), they are now ahead of renewable energy projects (37.6% in 2021 compared to 47% in 2020) which have dominated the market for several years. Among these credits, emissions avoidance activities are dominant, amounting to 80% (174.7 MtCO₂e) of these new NbS credits in 2021-2022.²³ For the most part, these are forest conservation projects funded via REDD+ (*Reducing emissions from deforestation and forest degradation*), the UNFCCC programme for the protection of forests. However, methods to estimate the carbon impact of avoided deforestation suffer from uncertainty.²⁴ Carbon Direct, a carbon management consulting firm, is also concerned that the renewable energy projects do not meet the additionality criterion: with or without carbon credit, the projects would have taken place in view of the growth of the renewables market.

FIGURE 1
THE ECOSYSTEM OF VOLUNTARY CARBON MARKET

Source: [Abatable](#), 2022

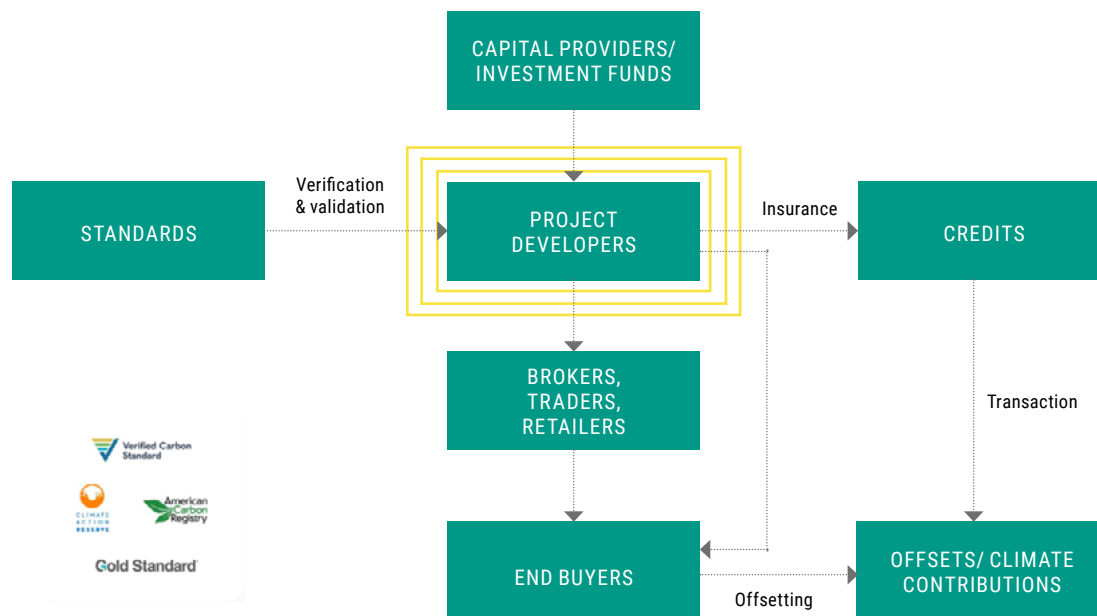
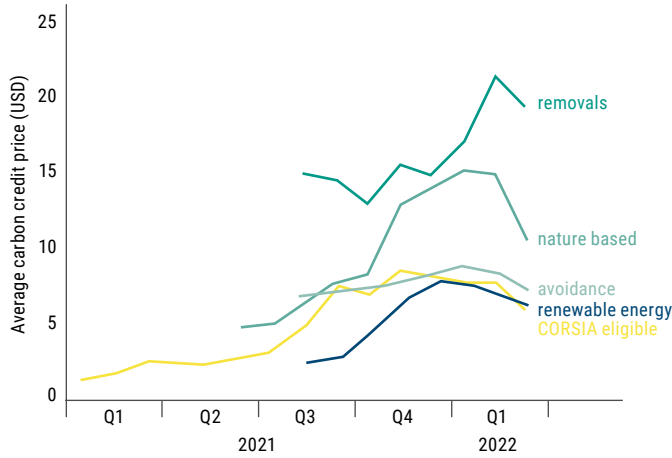




FIGURE 2
PRICES OF STANDARDISED CARBON CREDIT CONTRACTS

Source: [World Bank](#), 2022



The volume of removal credit transactions which aim to develop natural carbon capture and storage projects (via reforestation, or afforestation), or technological ones (Direct Air Capture, CCUS), remains modest. In 2021, the traded volume of carbon reduction credits was 21 times greater than that of carbon removal credits, according to Ecosystem Marketplace. According to Carbon Direct,^d pure removal projects represent only 3% of the credits issued in 2021, with the credits for combined removal and reduction amounting to 13%. No sustainable removal credit, making possible the removal of

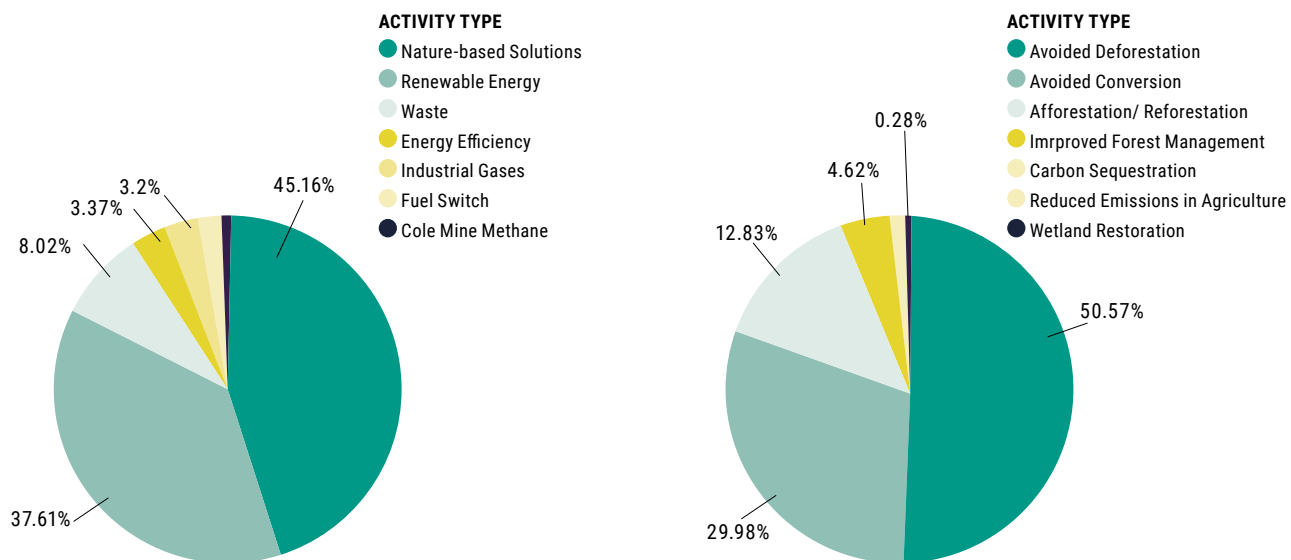
carbon in the very long term and ensuring a real impact on the concentration of GHGs in the atmosphere, was issued in 2021.²⁵

Still, the increase in demand for NbS credits is reflected in the prices observed on the market. From less than \$5/tCO₂e in June 2021, the Platts CNC index for natural avoidance and removal credits rose to \$14.55/tCO₂e. Highly sought after by customers in the face of a tight supply, these are credits tied to the removal of carbon which drove average prices up, rising to \$19/tCO₂e in March 2022.²⁶ Thus, there may be observed a narrowing of the spread between natural removal credits (Platts Natural Carbon Capture) and avoidance credits (Platts Nature-based Avoidance), from \$7/tCO₂e in August to 0.95/tCO₂e at the end of 2021.

The market shift towards nature-based credits is part of the trend of recent years. Indeed, according to Ecosystem Marketplace, it is also the credits linked to afforestation and reforestation projects that were traded at the highest price in a sustainable way between 2019 and 2021 (\$8.1/t in 2021). By comparison, the trading of credits for household appliance installation projects (especially improved cookstoves) fell by 40% but their price continues to increase and remains above average, from \$3.84/t in 2019 to \$5.75/t in 2021. The price index for renewable energy credits also increased at the end of the year, to a level close to CORSIA credits.²⁷ Conversely, the switch from credits linked to the agricultural sector, which is booming (+876% in one year), to low-cost pasture management credits precipitated the price drop from \$11.8/t in 2019 to \$1.36/t in August 2021 (BOX 4).

FIGURE 3
TYPOLOGY OF CARBON CREDITS (LEFT) AND NATURE-BASED CREDITS (RIGHT) PLACED ON THE MARKET IN 2021

Source: [Climate Focus](#), 2022



^d Carbon Direct's analysis is based on data from Berkeley's Voluntary Registry Offsets Database (VROD), which aggregates all carbon management projects from the four largest voluntary compensation registries: American Carbon Registry (ACR), Climate Action Reserve (CAR), Gold Standard (GS) and Verra (VCS) – is more than 1.5 GtCO₂ from more than 5,000 projects.

BOX 4 • EXPERIENCE FEEDBACK

CARBON FARMING, A NEW DEVELOPMENT IN NATURE-BASED SOLUTIONS

On a global scale, carbon credits linked to agricultural activities, although maintained at a marginal portion of the market, are flourishing. The mitigation potential of agricultural soils prompted the European Commission to adopt a Communication on sustainable carbon cycles in December 2021, as part of its Farm to Fork Strategy. The Commission wishes to promote “carbon farming” in this context, based on existing funding programmes (Common Agricultural Policy, LIFE program, Interreg, etc.) to encourage farming practices favourable to the sequestration and reduction of emissions (agroforestry, soil protection, restoration, etc.). In particular, the EU plans to strengthen the standardisation of methodologies for monitoring, reporting and verification of carbon farming. Such a framework has existed in France since 2019. The Low Carbon Label is a national certification framework for local projects to reduce and sequester greenhouse gas emissions. Operational since 2019, it was designed by the Ministry of Ecological Transition and technical partners, such as the think tank Institute for Climate Economics (I4CE). 233 projects now benefit from the Low Carbon Label, having met the criteria set by one of the sectoral methods established by the Ministry to assess reduced or removed emissions compared to a reference scenario. These methods now mainly cover the forestry and agricultural sectors, but also construction and transport. The Carbon Agri method gave birth to France Carbon Agri Association, which groups 302 farmers committed to reducing their emissions, for a potential reduction of 138,800 tCO₂. In South Africa, in 2021, the AgriCarbon programme run by the local operator Climate Neutral Group conducted the certification of 40 milk farms committed to the reduction of their carbon and environmental footprint, and the issuance of 230,000 tCO₂ of credits, sold at between \$15 and \$25/t.²⁸

Sources: [Ecologie.gouv, n.d.](#); [France Carbon Agri Association, 12/02/2021](#); [Climate Neutral Group, n.d.](#)

Beyond carbon: the co-benefits of compensation projects increase the value of the credits

The growing success of NbS credits is based on their potential as natural carbon sinks. The extent of the mitigation potential resulting from the planting of trees has been the subject of global modelling exercises that have led to academic controversies. In 2019, a study conducted by researchers at the Swiss Federal Institute of Technology in Zurich (ETH Zurich) estimated that ecosystems could support 0.9 billion hectares of additional continuous forest, i.e., a 25% increase in forest area. At maturity, this would represent a carbon sink of more than 200 Gt, and the capacity to store 25% of atmospheric carbon.²⁹ This study raised many debates and elicited many responses, both on the method of modelling on such a scale and on the “simplistic” conclusions to which the study could

lead regarding the value of trees as a solution to environmental problems.³⁰ This “carbon-centred” view of the NbS also questions their co-benefits for biodiversity, the economy, and local communities. All academic literature generally tends to show that the impacts of nature-based solutions are complex and vary according to local contexts, with synergies or compromises with the Sustainable Development Goals (SDGs).

Co-benefits refer to all the additional environmental, social and other benefits derived from a carbon project. In its “Special Report: Global Warming of 1.5 °C”, the IPCC emphasises this point: “*Mitigation options consistent with a 1.5 °C pathway are associated with multiple synergies and trade-offs across the Sustainable Development Goals (SDGs)*.”³¹ Thus, the co-benefits of an emission reduction, avoidance or removal project can be assessed according to whether it facilitates the access to energy (SDG 7), reduces gender inequalities (SDG 5) and/or economic inequalities (SDG 10), creates economic value or employment (SDG 8), or protects land (SDG 15) and marine (SDG 14) biodiversity.

Forest conservation projects, which represent the majority of nature-based projects, can in particular generate important co-benefits for biodiversity in addition to carbon sequestration. In this respect, the countries participating in the REDD+ programme for the conservation of forests increasingly tend to integrate non-forest biodiversity indicators into their national forest inventories, but the methodologies are still very disparate, according to one study.³²

However, researchers believe that tree planting is more often motivated by its utilitarian and commercial benefits than by its value for biodiversity and as a carbon sink. The number of organisations, especially for-profit ones, supporting and developing tree planting projects (afforestation or reforestation) in tropical and subtropical areas has almost quadrupled in the last 30 years. For the most part, they implement agroforestry systems, planting campaigns of mixed or single species, or carry out assisted natural regeneration. The species most often reported are cocoa, teak, moringa, mango and coffee, which primarily meet the economic needs of local populations.³³

A recent example of this utilitarian and commercial approach is that of Gabon, whose forests still occupy 88% of the territory. Environment Minister Lee White recently announced the issue of 187 million carbon credits under REDD+, with the aim of selling half of them on the voluntary market before COP27. It would be the largest carbon credit issuance ever. The minister of Gabon thus hopes to generate revenue, estimated at \$291 million, in order to preserve national forests, but also to ensure the sustainable exploitation of resources.³⁴ A few days earlier, TotalEnergies announced the acquisition of 49% of the shares of Compagnie des Bois du Gabon, which manages 600,000 ha of FSC-certified forests in the country, in order to generate carbon credits and offset its emissions.³⁵

In general, social and environmental co-benefits increase the value of carbon credits on the voluntary market: accor-



ding to Ecosystem Marketplace, credits certifying projects with co-benefits reach a weighted average price of \$5.95/t, against \$2.77/t for other projects. A recent study of 2,259 projects certified under the Kyoto Protocol's Clean Development Mechanism (CDM) reckons that the projects with the highest guarantee of co-benefits received a 30.4% higher price compared to projects with lower co-benefits, with an additional premium for CDM projects certified with the Gold Standard.³⁶

In fact, the evaluation of the co-benefits of carbon credits has for a long time been included in the evaluation criteria of the main certification standards. Since its birth in 2003, the Gold Standard has prescribed the assessment of the impact of carbon projects on neighbouring communities and populations. In 2017, the "Gold Standard for Global Goals" (GS4GG) became its new reference standard, intended to meet the objectives of the Paris Agreement as well as the SDGs. More recently, the Gold Standard has mandated the use of the SDG Impact Tool, an instrument introduced in December 2021 to help project leaders assess the impact of their carbon project on the SDGs. In 2019, Verra presented the Sustainable Development Verified Impact Standard (SD VISTA), a set of rules and assessment criteria that allow an independent as-

essor to certify a project's contribution to the SDGs.³⁷ Under its Climate, Community & Biodiversity (CCB) Standards programme, Verra labels certified projects (VCS) that generate positive benefits for local communities and biodiversity. So far, 51 projects have been validated, 75 verified, and more than 310,000,000 credits have been issued with the label (about 30% of all issued VCS credits).^e

The growth of interest in NbS also calls for regulation of practices to ensure the credibility of projects and credits issued. In July 2021, the [Natural Climate Solution Alliance](#) (NCSA), a multi-actor coalition led by the World Business Council for Sustainable Development (WBCSD) and the World Economic Forum, published a guide on the use of nature-based credits. The document, entitled "Natural Climate Solutions for Corporates", provides guidelines for actors in the supply and demand of credits, on the credible and integrated use of credits certifying nature-based projects.³⁸ In May 2022, NCSA sanctioned six nature-based trailblazer projects, all of which were Verra certified. Other initiatives such as [Nature4Climate](#), launched in 2017 made up of 19 specialist organisations, are campaigning to develop investments in this sector.

3. INTERNATIONAL REGULATORY FRAMEWORKS FOR CARBON MARKETS ARE BEING STRENGTHENED

Rules for the application of Article 6 of the Paris Agreement adopted at COP26

After several years of negotiations, the rules for the application of Article 6 (*Article 6 rulebook*) were finally adopted on November 13, 2021. They include a number of significant advances which settle controversial debates that were under discussion since the signing of the Paris Agreement. In particular, the accounting rules to avoid double counting have raised a lot of concerns. Certain conclusions remain open to interpretation, and many implementation methods will be the subject of a work programme in the coming years.³⁹ The provisions of Article 6 will have direct consequences on the functioning of the voluntary market.

Article 6 of the Paris Agreement aims to define the rules for voluntary cooperation between Parties to implement their Nationally Determined Contributions (NDCs). Two market mechanisms are provided:

- **Article 6.2** provides for the possibility for States to carry out bilateral international trading of mitigation outcomes (internationally transferred mitigation outcomes – ITMOs) among themselves within the framework of "cooperative approaches".
- **Article 6.4** establishes a new multilateral, centralised market with its own office, in the manner of the Kyoto Protocol's Clean Development Mechanism.

The Glasgow decisions allow ITMOs that are eligible under Article 6.2 to be traded with a view to not only help Parties achieve their own NDCs, but also for other "international mitigation purposes" or even "other purposes" as determined by the Parties. The "international mitigation purposes" are not specified, but are understood to refer implicitly to the emissions reduction programmes of the ICAO for aviation and IMO for maritime transport. The reference to "other purposes" suggests that States are free to decide whether their ITMOs can be used in the voluntary carbon market. If they are not authorised by the Parties to be traded under Article 6.2 (then referred to as "unauthorised credits"), the mitigation outcomes can then be credited to the NDC, or be used for domestic purposes, results-based financing, or in a voluntary

^e See the Verra Registry: www.registry.verra.org/#/ccb

carbon market.

All ITMO trades must lead to a “corresponding adjustment” in order to avoid double counting when a Party credits its NDC with the mitigation outcome transferred from another Party.

As a result, two parties cannot claim the same mitigation outcome on their balance sheet. In contrast, the Glasgow decisions leave it to the discretion of the Parties whether or not to make a corresponding adjustment to “unauthorised credits” for Article 6.2 that are used in the voluntary market, and to certifiers and credit programmes whether to discriminate these credits or not. In other words, the question is whether a country like the United States can claim in its carbon accounting a mitigation outcome obtained by a domestically based

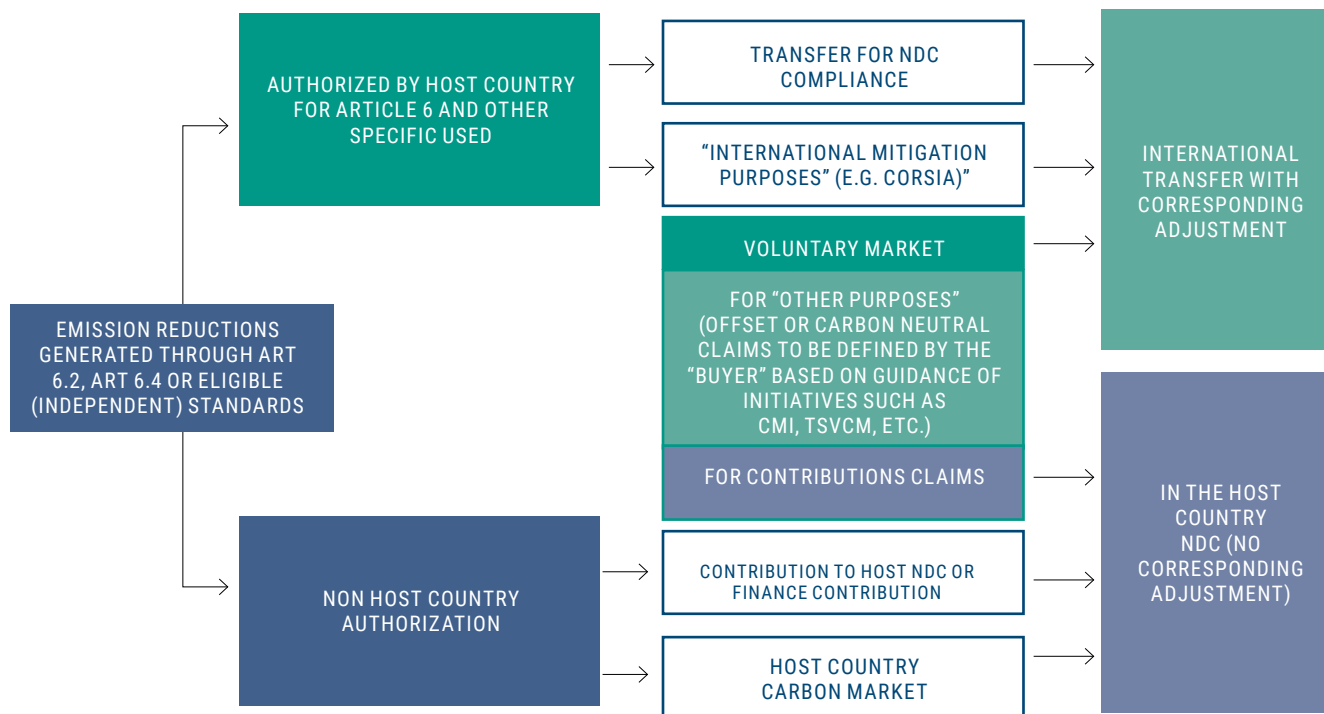
company, such as Amazon, via the purchase of carbon credits on the voluntary market, at the risk of weakening its proactive reduction policies.

By the rules established by the Voluntary Carbon Markets Integrity Initiative (VCMI) in its provisional Code of Practice in June 2022 (**SEE BELOW**), corresponding adjustments will not be mandatory. Verra,⁴⁰ then Gold Standard – which had, however, announced the opposite at the start⁴¹ – have aligned themselves with this position. Four States among the 32 signatories of the “San José Principles” for the integrity of international carbon markets have already declared that they will not use or transfer a mitigation outcome without a corresponding adjustment.

FIGURE 4

THE CORRESPONDING ADJUSTMENTS SYSTEM AND ELIGIBILITY OF CARBON CREDITS UNDER ARTICLE 6.2

Source: [World Bank](#), 2022



Article 6.4 seals the end of the Clean Development Mechanism

Article 6.4 establishes the creation of a new mechanism to replace the Clean Development Mechanism (CDM) of the Kyoto Protocol. Under the CDM, developed countries with an emission reduction target (known as “Annex B” countries) could purchase “Emission Reduction Certificates” (ERCs) generated by projects implemented in developing countries. To be delivered an ERC, a CDM project had to achieve an “additional” emissions reduction that would not otherwise have occurred. But CDM credits have acquired a bad reputation owing to the weakness of the standards governing their certification. The negotiation of this article proved to be particularly delicate, owing to the opposition of Brazil, China, India, and South Korea to the rules preventing double counting. The Glasgow decisions prompted the evolution of the Article 6.4 mechanism to address several criticisms of the CDM:

- Corresponding adjustments when transferring emission reductions (called “A6.4ER” in the jargon) between the Parties or to CORSIA or Emission Trading Systems (ETS).
- To boost the ambition of the mechanism compared to the CDM, a “global emissions reduction goal” has been set. This means that 2% of the A6.4ER credits will be cancelled at the time of their issuance, and therefore cannot be credited to any Party for the purpose of pure compensation.
- An obligatory share of 5% of transactions will be deducted to feed the Adaptation Fund.
- One item remains controversial regarding the use of old CDM credits in the Parties’ NDCs. The ERCs issued between 2013 and 2020, i.e., about 100 MtCO₂, have finally been admitted for use by the Parties to meet the objectives of their first NDC cycle.

Under pressure from the pandemic, CORSIA fails to take off

In order to “achieve carbon neutral growth from 2020 and reduce its carbon emissions by 50% compared to 2005 levels”,^f since 2016, the international civil aviation sector has been organised around the Carbon Offsetting Scheme for International Aviation (CORSIA), an emission compensation programme set up by the International Civil Aviation Organisation (ICAO). The programme is planned in three main implementation phases: the pilot phase (2021-2023) and the

first phase (2024-2026) are voluntary; the programme only becomes compulsory from the second phase onwards (2027). The pilot phase of the programme was launched on the 1st of January, 2021. During this phase the participating companies will only have to compensate the flights between the countries which will have volunteered to test the programme. There are now 107 countries ready to participate, among the 193 members of ICAO, representing 76% of international activity. From 2027 onwards, the offsetting obligations will become mandatory for all international flights.

Since its creation, the CORSIA program has struggled to answer questions about its real ability to drive the sector’s transition. The ICAO council has gradually strengthened its rules of application, restricting qualified credits for the programme to eight certification registries⁹ and prohibiting the use of credits linked to projects that started before the 1st of January 2016.

But the SARS-Cov2 pandemic halted the programme before it even started. In June 2020, the ICAO council decided to activate a safeguard clause contained in the CORSIA agreement to lower the programme’s reference threshold to 2019 emissions level instead of the sector’s average emissions in 2019-2020, as initially planned.⁴² This decision actually delays the entry into the programme by three years, since with emissions still lower than those of 2019 due to the drop in traffic induced by the pandemic, the volunteer companies will, in theory, have no additional emissions to compensate during the entire pilot phase.⁴³ In 2021, the weighted average price of credits traded in five of the compensation programmes eligible for CORSIA was only \$3.08/t, compared to \$4.89/t in 2020. This is lower than the average market price (4\$/t), with a spread between \$0.5/t and more than \$45/t.⁴⁴ This drop in price is normally attributable to the renewable energy credits (**SEE ABOVE**).

In addition, the voluntary phase, which will end in 2026, will only impose compensation on flights between two voluntary countries, reducing its scope to around 44% of total international aviation emissions.⁴⁵ Sixteen new countries have joined the voluntary programme as of 2022, but China, Russia, Brazil and India are still among the notable abstentions.⁴⁶ Finally, there is a significant risk of double-counting emission reductions if countries transferring credits to airlines do not make a “corresponding adjustment”.

To inform carbon credit purchase decisions, at the end of 2020, the International Air Transport Association (IATA) launched the *Aviation Carbon Exchange*, an electronic platform thanks to which airline companies can identify, select, and exchange voluntary emission units eligible under CORSIA.⁴⁷ JetBlue, a low-cost U.S. airline, inaugurated the programme by purchasing credits for the development of the *Larimar* wind farm in the Dominican Republic. When completed, the project will credit the company with 200,000 tCO₂ avoided per year.⁴⁸

^f As stated by ICAO in the resolution adopted at its 39th Session in October 2016, thereby creating the CORSIA programme.

^g These eight registries are: American Carbon Registry, China GHG Voluntary Emission Reduction Program, Clean Development Mechanism, Climate Action Reserve, The Gold Standard, Verified Carbon Standard, Global Carbon Council and Architecture for REDD+ Transactions.



To this system, major companies around the world have added voluntary compensation programmes, several of which began in 2020. However, in May 2021, an investigation published by Unerthed^h and The Guardian newspaper, showed how, out of a selection of projects aimed at reducing deforestation (funded by British airline companies and certified by Verra,

the largest carbon credits purveyor in the world), the methodologies used did not make it possible to draw conclusions on the real reductions in CO₂ emissions.⁴⁹ In particular, the notion of “avoided deforestation”, measured arbitrarily by the certifying body without any oversight from an independent central authority, was questioned.

4. GOVERNANCE OF THE VOLUNTARY CARBON MARKET IS TAKING SHAPE

New standards to regulate “claims”

As it allows for the financing of a mitigation project outside the scope of its activity, the prospect of being able to claim being “carbon neutral” is the main incentive for an organisation to finance a project through the purchase of carbon credits on the voluntary market. But in the absence of universal standards and a central regulating authority, the net zero commitments of companies lack a certain credibility. In a report published in February 2022 entitled “Corporate Climate Responsibility Monitor 2022” (CCRM) Carbon Market Watch and the NewClimate Institute have pinned down the carbon neutrality commitments formulated by 25 of the world’s largest companies. While their cumulative emissions reported in their inventories amount to 2.7 GtCO₂e, i.e., 5% of global annual emissions,⁵⁰ the objectives formulated by these companies only commit them to an aggregate reduction in their emissions of 40% on average at the due date they have set for themselves. Only 13 companies out of these have matched their commitments with their reduction targets, and only eight take into account the entire value chain (Scope 3).

This analysis runs counter to the assessments made by the main standards and assessors of corporate climate strategies. The authors of the study reckon that for the majority of the 18 companies in the sample, the endorsement by SBTi of their carbon neutrality objective according to the “Net Zero” standard is in reality “contentious or inaccurate”. In particular, the CCRM notes reference years that are too high, and inconsistencies between SBTi assessments and the companies’ own monitoring and progress reports. The authors point in the end to a “potential conflict of interest” for the SBTi, which produces fee-based assessment of companies against its own standards, and raise the question of whether it is “realistic and acceptable to conduct mass assessments for companies without sufficient resources to probe further.”⁵¹

In France, the consulting firm Carbone 4 presented the [Net Zero Initiative](#) (NZI) standard in April 2020.⁵² This standard for companies offers a normative definition of “corporate neutrality” in order to reconnect it with the objective of planetary neutrality. Concretely, NZI supports and provides a framework for companies to implement their carbon neutrality climate strategies.

FIGURE 5

THE THREE PILLARS OF THE NET ZERO INITIATIVE BENCHMARKS FOR “CORPORATE NEUTRALITY”

Source: [Carbone4](#), 2020

		PILLAR A Reducing my GHG emissions	PILLAR B Reducing others' emissions	PILLAR C Developing carbon sinks
In my value chain	In my operations	Direct emissions (scope 1)		Indirect removals
	Upstream and downstream	Indirect emissions (scope 2+3)	Emissions avoided by my products and services	Indirect removals
Outside of my value chain			Emissions avoided through the financing of reduction projects	Removals through the financing of absorption projects

^h Unerthed is a Greenpeace news initiative.



NZI is based on a restrictive but ambitious view of carbon neutrality, which it only conceives on a collective scale – planetary or national. In the NZI, unlike the CNZS, an individual organisation cannot therefore claim to be “carbon neutral”, but can instead communicate around its “contribution” to planetary or national neutrality. To maximise the contribution of companies, the NZI standard, like CNZS, distinguishes between a company’s own emissions reduction actions (which it calls “Pillar A”), the reduction of others’ emissions (“Pillar B”) and removals through development of carbon sinks (“Pillar C”).

Within the framework of the NZI standard, the purchase of carbon credits therefore constitutes only one instrument among others that can be mobilised by the organisation within the framework of its Pillar B or C. Within the framework of Pillar B, the carbon credit certifies the financing of a project leading to the avoidance of emissions (compared to a reference scenario) outside the company’s value chain. Within the framework of Pillar C, the carbon credit certifies the funding of a project leading to the sequestration of carbon. In both cases, the company cannot claim “possession” of the reduction, but only its funding, within the spirit of a “contribution” to collective neutrality.

To address the need for credibility and integrity of companies that claim to be “carbon neutral”, **the Voluntary Carbon Markets Integrity Initiative (VCMI) unveiled a “Claim Code of Practice” in June 2022**. In particular, the Code provides that a claim must first be based on a “net zero” objective (pledge) based on science, recommending certification of the SBTi Net Zero Standard for this (**SEE BELOW**); it also requires the purchase of carbon credits allowing mitigation outside of the organisation’s value chain, and the use of high quality credits.

Subject to consultation until August, the code has already raised some concerns. The NGO Reclaim Finance describes it as a “greenwashing manual”, considering in particular that it does not sufficiently compel companies to reduce their emissions before resorting to offset credits and to be able to claim a “net zero” claim, and that it lacks precision in all of its expectations.⁵³

In the end, some States have taken up the subject and have undertaken to regulate the carbon neutrality claims of companies. This is the case for France, which in the Climate and Resilience Law voted in August 2021, prohibits an advertiser from claiming “carbon neutrality” for its product or service without presenting an easily publicly accessible and yearly updated GHG balance sheet for its entire life cycle.⁵⁴ The European Union is also considering an initiative to regulate “green claims” more generally.

Standards for building a common approach to offsetting aligned with the Paris Agreement

As with organisations’ commitments and claims to carbon neutrality, there is no regulatory authority for the voluntary carbon market. Since 2008, the International Carbon Reduction and Offset Alliance (ICROA) has been accrediting organisations, active in the emissions reduction and compensation value chain and which comply with its own “Code of Good Practices”, with a view to enhancing the integrity, quality, and impact of carbon credits. In 2011, it joined the International Emission Trading Association (IETA), created in 1999 following the signing of the Kyoto Protocol. In recent years, several standards have been developed to promote adherence to common principles of integrity and robustness in the area of compensation.

Published in September 2020, **the Oxford Principles seek to define common principles in order that all Net Zero commitments may converge to the same propositions and requirements regarding the use of carbon credits**. These principles aim to provide credit buyers with a consistent understanding of the role of compensation as part of an overall mitigation strategy.⁵⁵ The Oxford Principles have been integrated into the Race to Zero campaign mobilising coalitions of businesses, investors, universities, cities, states and regions committed to carbon neutrality.⁵⁶ The principles of the *Race to Zero* campaign include:

- **Principle 1.** Prioritise reducing your own emissions first, ensure the environmental integrity of any offsets used, and disclose how offsets are used;
- **Principle 2.** Shift offsetting towards carbon removal, where offsets directly remove carbon from the atmosphere;
- **Principle 3.** Shift offsetting towards long-lived storage, which removes carbon from the atmosphere permanently or almost permanently;
- **Principle 4.** Support for the development of a market for net zero aligned offsets.

The principles proposed by the study are intended to be applicable to all non-state actors who, on the demand side, wish to use offsetting in the carbon neutrality plans. By encouraging carbon capture and storage (CCS), the Oxford Principles prioritise a resolutely technological approach to offsetting over a “nature-based” approach, arguing for greater permanence of storage made possible by CCS.¹ A position shared by Carbon Direct in its analyses (**SEE ABOVE**), which pleads for the multiplication of long-term sequestration credits.

ⁱ Regarding the status of carbon capture and storage technologies, read “CCUS is entering a pivotal period”, by Guillaume Marchand, page 141 in: Global Observatory of Non-State Climate Action (2021). [Global assessment of non-state climate action by sector](#). *Climate Chance*



At the same time, in September 2020, the **Taskforce on Scaling Voluntary Carbon Markets (TSVCM)** was born, an international multi-actor initiative aimed at driving the growth of the voluntary carbon market. Initiated by Mark Carney, United Nations Special Envoy for Climate Action and financial adviser to Boris Johnson for COP26, the TSVCM has brought together more than 250 representatives of private companies (Nestlé, Shell, Maersk, Tata Steel, Etihad, etc.), carbon offsetting operators (EcoAct, South Pole, etc.), certifying agencies (Gold Standard, Verra, ACR, etc.), financiers (BNP, UBS, Goldman Sachs, etc.), and even researchers (LSE, etc.). The work of the taskforce has resulted in the publication of several reports and the formation of a new governance body in October 2021, called the **Integrity Council for Voluntary Carbon Markets (IC-VCM)**.

The IC-VCM is now responsible for developing the *Core Carbon Principles (CCPs)*, a “meta standard” that should serve as a common denominator for certification methodologies to promote high-quality and transparent carbon credits. The first step in IC-VCM’s work was to appoint three members from indigenous peoples and local communities to its governing board to represent people living in the regions of the world most affected by carbon projects.⁵⁷



KEY TAKEAWAYS

2021 was a banner year for the voluntary carbon market, driven by the upsurge of corporate commitments to achieve “net zero emissions”. By exceeding a billion dollars for the first time and multiplying fourfold year-on-year between 2020 and 2021, the value of credits traded globally shows the growing interest of companies in this instrument within the framework of their transition plans. In particular, credits certifying nature-based solution projects (afforestation, reforestation, conservation, etc.) are enjoying a thriving success and occupy the leading position in the market. The co-benefits for biodiversity and the socio-economic development of local communities are also highly sought after. However, emission removal credits allowing the capture and additional sequestration of CO₂ in the long term, remain very underdeveloped.

While it is dynamic, the size of the voluntary carbon market nonetheless remains modest and still far from carbon pricing levels considered compatible with a trajectory that limits global warming to 2 or 1.5 °C. While it allows channelling of private financial resources towards projects beneficial to the mitigation of greenhouse gas emissions, the possibility offered to companies and other organisations to claim “carbon neutrality” in the absence of universal standards incites controversy. Therefore, alongside this development, new governance frameworks and standards are being created, that structure and regulate the use of carbon credits and strategies based on carbon neutrality. Though the adoption of Article 6 of the Paris Agreement may not result in a change on the fundamentals of the market for the time being, it will allow better integration of the voluntary market with that of the signatory States.



REFERENCES

RETURN TO PREVIOUS PAGE

- 1 IPCC (2018). [Special Report: Global Warming of 1.5°C. Summary for Policymakers](#). Intergovernmental Panel on Climate Change
- 2 [Net Zero Tracker](#). Energy & Climate Intelligence Unit, Data Driven EnviroLab, NewClimate Institute, Net Zero Climate
- 3 Goering, L. (03/11/2021). [Forget net-zero: meet the small-nation, carbon-negative club](#). Reuters
- 4 Day, T., Mooldijk, S., Kuramochi, T. (2020). [Navigating the Nuances of Net-Zero Targets](#). NewClimate Institute, Data-Driven EnviroLab
- 5 IPCC (2022). [Climate Change 2022: Mitigation of Climate Change](#). Intergovernmental Panel on Climate Change
- 6 Ryan, D. (2021). [Accelerating climate action: the role of in-country local leadership networks in delivering Net Zero](#). UK100
- 7 SBTi (10/11/2021). [More than 1,000 companies commit to science-based emissions reductions in line with 1.5°C climate ambition](#). Science Based Targets initiative
- 8 Black, R., Cullen, K., Fay, B., Hale, T., Lang, J., Mahmood, S., Smith, S.M. (2021). [Taking Stock: A global assessment of net zero targets](#). Energy & Climate Intelligence Unit, Oxford Net Zero
- 9 Reuters (05/10/2021). [World's largest miners pledge net zero carbon emissions by 2050](#). Reuters
- 10 Climate Chance Observatory (2021). [Global Synthesis Report on Climate Action by Sector](#). Climate Chance
- 11 ExxonMobil (18/01/2022). [ExxonMobil announces ambition for net zero greenhouse gas emissions by 2050](#). ExxonMobil
- 12 NQA (28/03/2022). [ISO 14068 – GREENHOUSE GAS MANAGEMENT AND RELATED ACTIVITIES](#). NQA
- 13 See on website: <https://sciencebasedtargets.org/companies-taking-action>
- 14 SBTi (2021). [SBTi CORPORATE NET-ZERO STANDARD. Version 1.0](#). Science Based Target initiative
- 15 Lo, J. (18/05/2022). [Science Based Targets initiative kicks out oil companies, delays validation criteria](#). Climate Home News
- 16 See on website: <https://sciencebasedtargets.org/sectors/financial-institutions>
- 17 Net Zero Initiative (29/06/2022). [10 principes pour une stratégie climat d'entreprise ambitieuse](#). Carbone 4
- 18 Levrel, H. (2020). Les compensations écologiques. Paris: *La Découverte*, Repères Écologie
- 19 Net Zero Tracker (2022). [Net Zero Stocktake 2022](#). Energy & Climate Intelligence Unit, Data-driven EnviroLab, NewClimate Institution, Oxford Net Zero
- 20 Donofrio, S., Maguire, P., Daley, C. et al. (2022). [The Art of Integrity. State of the Voluntary Carbon Markets 2022 Q3](#). Ecosystem Marketplace
- 21 Donofrio, S., Maguire, P., Myers, K., Daley, C., Lin, K. (2021). [Ecosystem Marketplace Insights Report. Markets in Motion: State of Voluntary Carbon Markets 2021 Installment 1](#). Ecosystem Marketplace
- 22 Shifflett, S. (22/07/2022). [Booming Carbon-Credits Market Took Hit as Stocks Sold Off](#). Wall Street Journal
- 23 Climate Focus (up. 06/06/2022). [Voluntary Carbon Market Dashboard](#). Climate Focus
- 24 Brimont, L. (28/09/2016). [La performance des projets REDD+ : prédire le pire et promettre le meilleur ?](#) IDDRI
- 25 Carbon Direct (06/05/2022). [Assessing the State of the Voluntary Carbon Market in 2022](#). Carbon Direct
- 26 Banque mondiale (2022). [State and Trends of Carbon Pricing 2022](#). Banque mondiale
- 27 Sebastian, V. (06/01/2022). [Voluntary carbon market rally set to stretch into 2022 on demand optimism](#). S&P Global Platts
- 28 Roelf, W. (06/04/2022). [South African dairy farmers eye carbon credits while curbing emissions](#). Reuters
- 29 Bastin, J-F., Finegold, Y., Crowther, T. W., et al. (2019). [The global tree restoration potential](#). Science, vol. 365 (6448), pp. 76-79
- 30 Holl, K. D., Brancalion, P. H. S. (2020). [Tree planting is not a simple solution](#). Science, vol. 368 (6491), pp. 580-581
- 31 IPCC (2018). *Réchauffement planétaire de 1,5°C*, op. cit.
- 32 Gillerot, L., Grussu, G., Condor-Golec, R., et al. (2021). [Progress on incorporating biodiversity monitoring in REDD+ through national forest inventories](#). Global Ecology and Conservation, vol. 32
- 33 Martin, M. P., Woodbury, D. J., Doroski, D. A., et al. (2021). [People plant trees for utility more often than for biodiversity or carbon](#). Biological Conservation, vol. 261
- 34 Rizk, Y. (04/07/2022). [Gabon to sell \\$2bn worth of carbon credits before COP27](#). The Africa Report
- 35 AFP (15/06/2022). [Crédits carbone: TotalEnergies investit dans la forêt gabonaise, avec l'acquisition de parts dans la Compagnie des Bois du Gabon](#). Connaissance des Énergies
- 36 Lou, J., Hultman, N., Patwardhan, A., Qiu, Y. L. (2022). [Integrating sustainability into climate finance by quantifying the co-benefits and market impact of carbon projects](#). Communications Earth & Environment, vol. 3 (137)
- 37 Verra (23/01/2019). [Verra Launches Sustainable Development Verified Impact Standard](#). Verra
- 38 WBCSD, WEF (15/07/2021). [Natural Climate Solutions for Corporates](#). World Business Council on Sustainable Development, World Economic Forum
- 39 Marcu, A. (2021). [Article 6 rule book. A post COP26 assessment](#). European Roundtable on Climate Change and Sustainable Transition
- 40 Verra (2021). [The Future of the Voluntary Carbon Market](#). Verra
- 41 Gold Standard (2021). [Aligning Gold Standard projects with the Paris Agreement. Summary of consultation feedback and next steps](#). Gold Standard
- 42 ICAO (30/06/2020). [ICAO Council agrees to the safeguard adjustment for CORSIA in light of COVID-19 pandemic](#). International Civil Aviation Organisation
- 43 European Commission (2020). [Feedback from: Environmental Defense Fund](#) (Accessed 9 July, 2022)
- 44 ICAO (Nov. 2021). [CORSIA Newsletter](#)
- 45 DufRASNE, G. (2020). [What will airlines buy to offset their pollution? Today's supply of carbon credits and tomorrow's demand from CORSIA](#). Carbon Market Watch
- 46 ICAO (06/07/2021). [Over 100 States now participate in ICAO's Carbon Offsetting and Reduction Scheme for International Aviation \(CORSIA\)](#). International Civil Aviation Organisation
- 47 IATA (2021). [Aviation Carbon Exchange](#) (page consultée le 8 juillet 2021)
- 48 Drab, E. (16/11/2020). [L'IATA lance un programme de compensation carbone](#). Le Journal de l'Aviation
- 49 Clarke, J. S., Barratt, L. (04/05/2021). [Top airlines' promises to offset flights rely on 'phantom credits'](#). Unearthed
- 50 Day, T., Mooldijk, S., Smit, S., et al. (2022). [Corporate Climate Responsibility Monitor 2022](#). NewClimate Institute, Carbon Market Watch
- 51 Clark, P. (05/05/2022). [New SBTi boss takes over as criticisms mount](#). Financial Times
- 52 Dugast, C. (2020). [Net Zero Initiative. A framework for collective carbon neutrality](#). Carbone 4, Net Zero Initiative
- 53 Reclaim Finance (23/06/2022). [VCMi: Carbon or Greenwashing Market?](#) Reclaim Finance
- 54 Ministère de la Transition écologique et de la Cohésion des territoires, Ministère de la Transition énergétique (03/05/2022). [Mise en œuvre de la loi Climat et Résilience : entrée en vigueur de 3 dispositifs pour une publicité plus responsable](#). Ecologie.gouv.fr
- 55 University of Oxford (29/09/2020). [Oxford launches new principles for credible carbon offsetting](#). University of Oxford
- 56 Race to Zero (2020). [Defining the "Starting Line". Minimum criteria required for participation in the Race to Zero campaign](#). United Nations Framework Convention on Climate Change
- 57 ICVCM (19/04/2022). [Integrity Council for the Voluntary Carbon Market appoints new IPLC leadership](#). The Integrity Council for the Voluntary Carbon Market