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UNFCCC REDD+ and the power of sovereign carbon

Key takeaways

- We expect rapid growth of voluntary purchases of Paris Agreement-compliant carbon credits. This "sovereign carbon" asset will offer major new opportunities to deploy capital to tackle climate change and keep the 1.5° goal alive.
- Sales of national-scale UNFCCC REDD+ credits can help generate financing to reduce and, perhaps, reverse de-forestation. Blue carbon credits could also prove very important.
- Larger-scale, liquid and transparent markets will encourage capital inflows, as will improved understanding of how to use carbon credits in investor portfolios.

01 A new era for the voluntary purchase of carbon credits

Carbon credits will remain one of the most important tools to mobilise capital towards mitigating climate change. An estimated 22% of global greenhouse gas (GHG) emissions are in effect already covered by carbon markets, almost entirely through the compliance (or regulated) markets created and run at a national or sub-national level on a mandatory basis for large-scale, high polluting companies required by statute to reduce their greenhouse gas (GHG) emissions. The residual 78% of emissions currently remain unaccounted for. As we move towards global net zero, capital needs to be deployed to close this emissions gap.

Voluntary carbon markets, by contrast, are at a much earlier stage of their evolution. These voluntary markets – which allow businesses, private investors and governments and non-governmental organizations (NGOs) to purchase carbon offsets for their own emissions – had a turnover of around USD1bn[1] in 2021, up sharply on 2020 levels, but still equivalent to only a tiny share of overall carbon markets turnover.

Two factors could however now unlock growth in the voluntary purchase of carbon credits.

• First, **the Glasgow COP26** meeting in 2021 reached agreement on Article 6 which will facilitate the creation of a rule book for global trading of sovereign credits (i.e. those coordinated at a national level, rather than being exclusively project based).

• Second, there is a growing realisation that **nature-based solutions (NbS)** are the key to mitigating climate change, with the major initiative here (the UNFCCC REDD+, discussed below) potentially dovetailing well into the new sovereign carbon credit framework (see Sections 3 and 4 below).

What this means is that the existing bifurcation of compliance and voluntary can now, post-Glasgow COP26, be set on a path to convergence. Through making possible the voluntary purchase of what is in effect a compliance grade asset that tackles climate change, sovereign carbon will encourage a wider range of market participants to empower and finance progress towards the Paris Agreement net-zero targets.

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02 COP26 agreement creates the framework for asset issuance

The **Glasgow COP26** meeting agreed to a framework for the international transfer of carbon credits between sovereigns and their use to meet countries' National Determined Contributions (NDC), as first envisaged by Article 6 of the 2015 Paris Agreement. These NDCs are the primary commitments that sovereigns make under the Paris Agreement on what timeline they will decarbonise to net zero. Under Article 6, a country which is net positive against their NDC can "sell" carbon credits to another sovereign or for other "international purposes" such as corporate net-zero plans, provided there is an adjustment against the issuing sovereigns' NDC, with a corresponding adjustment only if used by another sovereign in their respective NDC accounting. In effect, agreement on Article 6 will provide the basis for a global accounting standard for sovereign GHG commitments, which is fundamental to tracking progress towards the 1.5° temperature increase goal.

03 Why nature-based solutions are important

Forecasts suggest that meeting the current target of limiting the rise in global temperatures to 1.5° will need **deep and sustained reductions in carbon emissions.**[2] This can be achieved by both reducing emissions from existing activities and improving methods to remove existing carbon from the air (**carbon capture** or **sequestration**). Continued carbon capture will be necessary to achieve a "net zero" world through offsetting residual carbon emissions from existing activities. (Figure 1 below).

Better management of natural resources (as we increasingly embrace the idea of "**nature as capital**") will make **nature-based solutions** particularly important in reducing carbon emissions and improving carbon capture.

Natural resources are not being effectively managed at the moment. The Intergovernmental Panel on Climate Change (IPCC) estimates that deforestation was the main contributor to substantial net positive CO_2 emissions from **A**griculture, **F**orestry and **O**ther **L**and **U**ses (AFOLU) over 2007-2016[3].

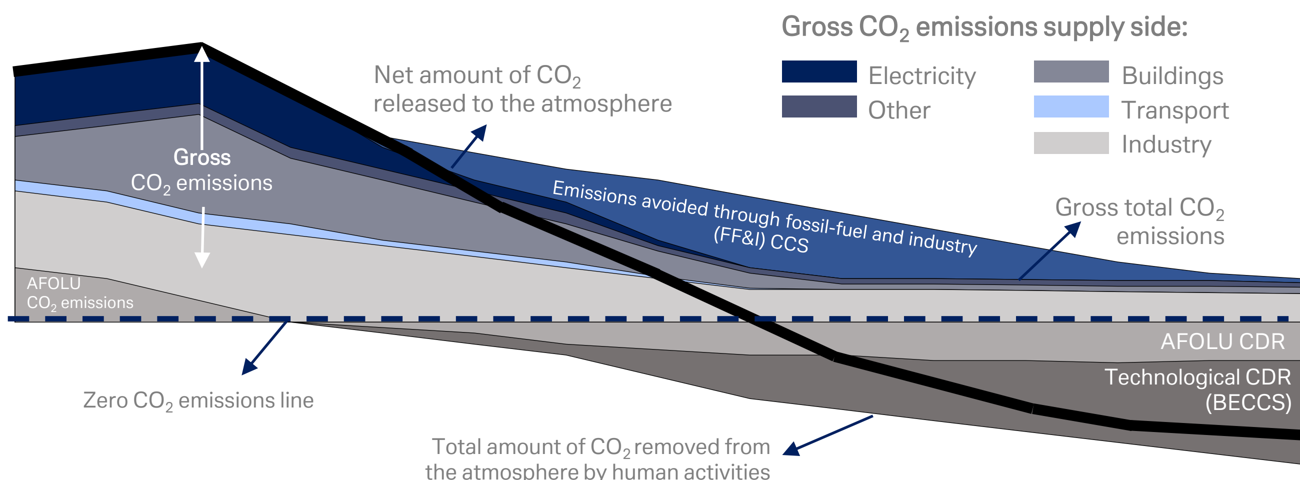
Sovereign carbon credits can help provide capital to fund the transition that takes the AFOLU contribution from being a net emitter towards being a net sequester of carbon. The likely scale and momentum of this market should offer a range of advantages over the existing fragmented project-by-project approach. It could improve our ability to mobilise capital towards nature and towards **local communities/indigenous communities** as protectors of nature. At present, this is not really happening: in Compliance markets, most of the investment from sale of the carbon credits is used in technical/engineering solutions and reinvested in the country of the regulator. More obvious channeling of funds to nature and local/indigenous communities could also help improve general public perceptions around carbon trading.

04 The REDD+ framework and Blue Carbon

Forests offer an important way to use this "nature as capital" approach to reducing emissions. At present, deforestation and forest degradation accounts for an estimated 6 gigatons of greenhouse gas emissions (mostly CO_2) a year[4] – putting it not far behind the two leading sources of global carbon emissions, China and the U.S. (Figure 2). Conversely, forest expansion and conservation also offer the potential to increase carbon removal, possibly equivalent to 5 gigatons per year[5] although there is some uncertainty about how sustainable this rate of carbon capture will be.

As part of the Paris Agreement, Article 5, we already have a system to reduce carbon emissions from forests – REDD+ (in full, **R**educing **E**missions from **D**eforestation and forest **D**egradation plus the sustainable management of forests, and the conservation and enhancement of forest carbon stock).

Figure 1: The global transition pathway to "net zero"



Source: Intergovernmental Panel on Climate Change (IPCC), Deutsche Bank AG. Data as of September 2022.
Notes: Indicative chart of general trends. AFOLU = agriculture, forestry and other land used. CCS = carbon capture and storage. BECCS = Bio-energy with carbon capture and storage.

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REDD+ dates back to 2005 when Papua New Guinea and Costa Rica began the process under the United Nations Framework Convention on Climate Change (UNFCCC). The first carbon credits verified under this mechanism were initially available to countries and multilateral banks towards the end of the last decade. In 2021, PNG became the first country to onboard the now UNFCCC verified REDD+, selling carbon credits to institutions, corporates and others using the www.redd.plus platform. REDD.plus only allows credits that have been verified by the UNFCCC and authorized by the respective sovereign, and then facilitates issuance, registry, custodial and settlement functions for distribution and sales. Carbon credit issued under this REDD+ mechanism can only be for voluntary purposes for pre-2021 vintages but subsequent issuance can be used for NDC-corresponding adjustments.

There are hopes that success around REDD+ could encourage the use of nature-based carbon credits in other areas, most obviously in marine and coastal activity (**blue carbon**), which is already part of REDD+ but more data from countries are required. The issues are comparable: degraded or destroyed coastal and marine habitats (e.g. mangroves, sea grasses or salt marshes) can release carbon in the atmosphere; well-functioning marine habitats will help sequester carbon from the atmosphere. Methodologies already exist under the UNFCCC and under voluntary standards to allow organisations conducting such blue conservation activities to sell carbon credits, but size of this market remains much smaller than the size of the problem would seem to justify. Agreement on clear principles and guidelines is needed to identify high-quality UNFCCC REDD+ blue carbon, and proposals here are likely to be forthcoming.

05 Carbon markets now

Carbon credits (as part of other "environmental commodities") already form an important market and there is scope for further growth as corporates and institutional investors voluntarily purchase utilize carbon credits approved under the Paris Agreement,

Existing **compliance carbon markets are centred on the EU.** At present EU Emissions Trading System (ETS) emissions trading accounts for around 90% of regulated markets. In Europe, carbon trading is already part of the financial landscape. Physical emission allowances have been classified as financial instruments under MIFID2 since January 2018. Derivative contracts on emissions allowances are also in scope of financial market rules, with recent ESMA (European Securities and Markets Authority) reports suggesting that the market is functioning in an orderly manner. Carbon pricing has fluctuated over time but still appears to remain below fair value, calculated on the basis of social cost of carbon or pathway-implied models. Carbon credits have continued to appeal to some investors as a potential yield enhancement product.

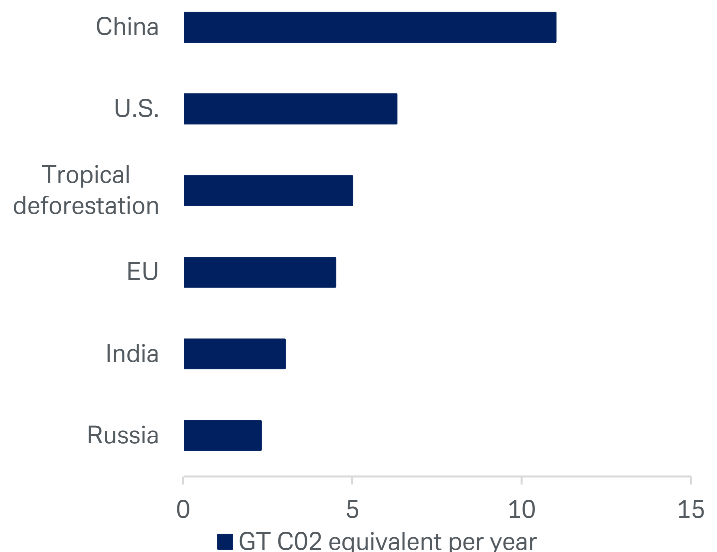
Voluntary carbon markets have so far failed to raise material amounts of capital, in the context of what is required. However, with the rule book now largely agreed under Article 6, many of the compliance risks previously associated with voluntary purchases of carbon could be removed.

Voluntary markets are already attracting a **wide range of investors**, e.g. institutional (insurance companies, asset managers, pension funds), more specialist investors (e.g. impact or blended finance funds), development finance (development or export credit agencies), private investors (e.g. family offices) and corporates (including state-owned enterprises as well as private firms). An institutional support structure of partners in fields such as accounting, registry, ratings and advisory services is also evolving.

06 Future voluntary carbon market development

The COP26 agreement on sovereign carbon credits, and UNFCCC REDD+, has led to hopes of timely voluntary market transition to Paris Agreement compliance in terms of standards, size and sophistication. One report by Singapore's GIC, Economic Development Board and McKinsey[6] suggests the voluntary carbon market overall could be worth USD5bn-USD30bn by 2030 with natural climate solutions accounting for 65% to 85% of total supply potential.

Figure 2: Global sources of greenhouse gas emissions



Source: Seymour and Busch 2016, Deutsche Bank AG. Estimates of greenhouse gas emissions can vary between sources.

As noted above, sovereign carbon credits should provide a stimulus to development and improvement of the voluntary market, and **new market entrants** on the demand side are likely to encourage change and help develop this infrastructure. A broader range of investors – with increasing reasons to hold and trade carbon credits (and perhaps different return parameters and metrics in assessing this social asset) will seek new and varying ways to approach the voluntary carbon market. Better permanence metrics (i.e. assessment of the longevity of related carbon benefits) could allow development of forward curves for sovereign carbon: in its simplest financial form, a rainforest can be seen as a series of one year forward removals.

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However, it is worth remembering that the **supply of credits** will depend on more countries joining UNFCCC REDD+ or other sovereign credit schemes, which will depend in part on evidence that the market is functioning well. For this, we need full transparency around financial flows along with their social and climate impact.

The quality of voluntary carbon credits is therefore likely to be linked to **recognised and credibly-governed standard-setting bodies**, and high and sustainable environmental quality, but criteria could also encompass human rights, biodiversity, and the promotion of equity (and positive social impact.)

UNFCCC REDD+ and sovereign carbon is, as noted above, a two-pronged approach to dealing with emissions in that it can both reduce one source of them (e.g. deforestation) and improve the world's capability for absorbing them (reforestation). But despite the approach's potential contribution on both fronts, questions will remain as to how exactly sovereign carbon credits fit into the existing **climate mitigation hierarchy** i.e. the prioritization of reducing carbon emissions over offsetting or mitigating them, as set out in the Paris Agreement.

Ultimately, sovereign carbon credits are only one component of the needed multi-faceted approach to dealing with climate change. Recent advances in potential sovereign carbon credit supply need to continue, if this market is to reach its potential large size and to counter any remaining criticisms that it is distracting attention from the need to directly reduce other sources of emissions. It is also worth noting that future climate change manifestations (e.g. warming oceans) may themselves reduce the ability of NbS to mitigate climate change: future predictions around sustained CO_2 capture abilities cannot be taken for granted.

An effective and transparent market is also important for **demand** as well as supply. Increasingly complex and demanding requirements for corporate reporting and monitoring of ESG issues will force firms to think clearly about how they will handle their carbon strategy in coming years and, as part of this, whether sovereign credits can help them or provide the best way of achieving a managed transition to a lower-carbon business model while ensuring their actions are correctly accounted for in their progress toward 1.5° goals.

Finally, at an investor level, there is likely to be a continuing debate as to what extent investing in carbon allowances can make portfolios **more resilient to carbon transition risk**,[6] particularly in comparison to other approaches (for example, changing sector focus). Clearly, the evolution of voluntary markets will continue to have intrinsic risks, given uncertainty over the speed of investor demand, liquidity and execution risks, along with reputational risks around perceived greenwashing. However, the COP26 sovereign credit framework, combined with the success of the UNFCCC REDD+ mechanism, is likely to accelerate growth in the sovereign carbon credit market and encourage consolidation of global carbon standards and accounting. Sovereign carbon can only be one component of what needs to be a multi-faceted approach to climate change, but it now looks poised to start making a major contribution.

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Glossary

AFOLU sector refers to Agriculture, Forestry and Other Land Uses.

Blue carbon refers to nature-based carbon credits from marine and coastal activity.

COP26 was the 26th UN Climate Change Conference of the Parties, held in 2021.

The EU Emissions Trading System (EU ETS) was launched in 2005 and is the world's largest multi-country, multi-sector emissions trading system.

The European Security and Markets Authority (ESMA) is the EU's securities markets regulator.

Singapore's GIC manages most of the Singapore government's financial assets.

Greenhouse gases (GHG) absorb and emit radiant energy within the thermal infrared range, maintaining global temperatures.

The UN's Intergovernmental Panel on Climate Change (IPCC) is tasked with assessing science related to climate change.

MIFID2, introduced in 2018, regulates EU financial markets

Nature as capital approaches consider how best to manage elements of the natural environment including assets like forests, water, fish stocks, minerals, biodiversity and land to deliver future ecosystem services.

Nature-based solutions according to the International Union for Conservation of Nature (IUCN) definition are "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".

Under Paris Agreement Nationally determined contributions (NDCs) are required to be established, it is a climate action plan to cut emissions and adapt to climate changes.

Net zero refers to reducing greenhouse gas (GHG) emissions to as close to zero as possible.

NGO stands for non-governmental organization, bodies operating independently of government and usually focused on social or political issues.

The Paris Agreement from 2015 sets out long-term goals on reducing GHG emissions

REDD+ comes from Article 5 of the Paris Agreement and is focused on reducing carbon emissions from forests.

The United Nations Framework Convention on Climate Change (UNFCCC) was agreed to 1992 and is intended to deal with "dangerous human interference in the climate system".

USD is the currency code for the U.S. dollar.

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