HSBC Global Research

14 July 2020

On account of carbon

FAQs on carbon pricing, offsets, and COVID-19

Climate Change & ESG
Global

- We answer the top ten investor questions on carbon pricing, carbon offsets, and what might change with/after COVID-19
- Issues: emissions and effectiveness, compliance and credibility, policy and prices, coronavirus and CORSIA
- In our view, implementation of carbon pricing schemes might be a little delayed, but long term, the direction of travel is clear

COVID carbon: We published *On account of carbon: The carbon price of changing behaviour* in April 2020 – in the middle of what was then a peak in emissions declines globally. We are already beginning to see evidence that carbon emissions are likely to rise after the temporary pause due to COVID-19 as economies emerge from lockdown. Although there has been a slowdown in climate action momentum from governments as they focus on dealing with the pandemic, many corporates have continued to make new climate pledges even during these difficult times. Also, as governments shift some focus towards recovery, there is much discussion as to how to make it a sustainable or green recovery.

Top 10 questions: In discussions with investors (over Zoom or otherwise), we were asked many questions about carbon pricing, details about offsets, and how COVID-19 will affect carbon markets. Here, we set out the most common questions we have received over the past three months.

1) *Will COVID-19 lockdowns reduce demand and prices for allowances and offsets?*
2) *Will the delay in climate negotiations affect implementation of the UN's carbon pricing mechanism?*
3) *How do we assess the quality of a carbon reduction pledge?*
4) *Which form of carbon pricing is most effective in reducing emissions?*
5) *Which sectors already use internal carbon pricing?*
6) *Can all offsets be used for compliance in actual ETS schemes?*
7) *Who and what determines the credibility of an offset mechanism or project?*
8) *What determines the price of an offset?*
9) *What are some of the issues related to forestry offsets?*
10) *Will aviation follow through with the CORSIA programme after COVID-19?*

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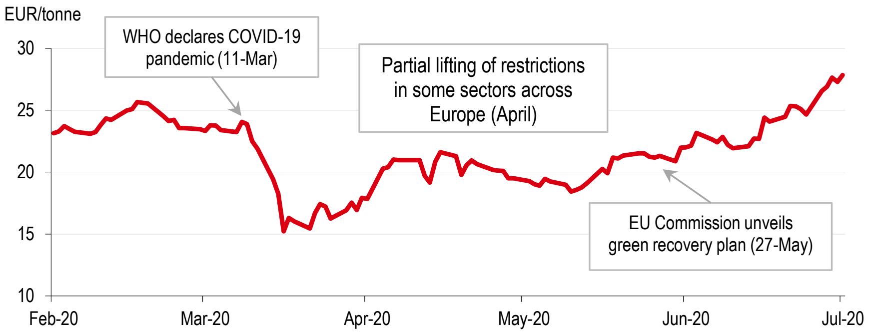
For more detailed background on carbon pricing, the quality of reduction pledges, and the nuances of carbon credits and offsets, please see On account of carbon: The carbon price of changing behaviour (2 April 2020).

1) Will COVID-19 lockdowns reduce demand and prices for allowances and offsets?

For most carbon pricing schemes, emissions allowances must be submitted according to the volume of greenhouse gases (GHG) emitted over the designated time period. The closing of facilities during COVID-19 lockdowns makes it easier for participants in these schemes to comply with allowance submissions – because they emitted less during shutdowns and thus are less likely to use all of their allowances. Some carbon pricing schemes allow the "banking" of allowances i.e. unused allowances can be held for future use. The knock-on effect is that fewer participants will need to go out and find surplus allowances or offsets.

However, the decline in absolute emissions is temporary and if facilities restart, emissions are likely to be go up in tandem. From a climate perspective, it is the concentration of emissions in the atmosphere that matters – and the recent declines are a mere drop in the ocean that will do virtually nothing to change atmospheric concentrations. What is required is a structural change in the economy, as is being pursued by the European Union's Green Deal.

Chart 1: Fluctuations in the EU ETS price during COVID was sentiment driven



Source: Refinitiv Datastream

Sentiment driven: Prices of EU allowances (EUAs) declined with sentiment at the height of lockdown across Europe in mid-March, but have since recovered as lockdowns eased, businesses responded with different strategies, and as stimulus or recovery plans were unveiled (Chart 1).

2) Will the delay in climate negotiations affect implementation of the UN's carbon pricing mechanism?

The next round of climate negotiations, known as COP26, have now been delayed by a whole year to November 2021. One loose end – that has remained open for a while – is that of Article 6 of the Paris Agreement: on cooperative approaches (6.2), a new pricing mechanism (6.4), and non-market approaches (6.8).

This part of the Paris Agreement affects the market for carbon offsets. The three key parts of Article 6 were not agreed at COP24 in 2018 when the Paris Rulebook was adopted, nor at COP25 in 2019 (for more details, see *COP25: Intransigence*, 16 December 2019). The general consensus at the time was that "no deal" was better than a "bad deal".

If agreement on these issues were to be found originally in November 2020, then the actual implementation of this new mechanism would occur (a year or two) afterwards. It was hoped that the carbon offset market would begin to see a resurgence in demand thereafter (and in turn, drive more investment into projects). However, now with the year-long delay to COP26, the actual implementation of any global mechanism will be further delayed.

At the same time, demand for offsets may also soften because of the time it takes for businesses to recover (as per 1Q) and require (extra) offsets, as well as afford them.

3) How do we assess the quality of a carbon reduction pledge?

Carbon reduction pledges should all aim for emitting less than before over a given time period – however, it is important to distinguish between an ***absolute*** reduction and a ***relative*** reduction. When businesses or countries make reduction pledges, the quality should be assessed over three parts:

a) **What is the reduction relative to?** 'Itself' in terms of *absolute* emissions, or an 'intensity level' or some 'other baseline' such as a benchmark for *relative* reductions. There are other types of reduction pledges such as *zero* or *net zero* emissions or *negative* emissions.

b) **What is the timeframe?** It could be 2025, or 2030; sometimes it will be mid-century (i.e. 2050) or century end (2100). In general – the sooner the better.

c) **Is the reduction in line with science?** A large reduction in emissions is better than a small one over the same timeframe but the UN's climate science body (IPCC) has outlined the required emissions reductions in order to meet global climate targets. In order to limit temperature rises to within 1.5°C, the reductions should generally be in line with a 45% decline (from now) by 2030 and reaching 'net zero' by 2050.

Beyond the announcement of a pledge, the entity should also provide a comprehensive strategy to meet the targets in terms of its implementation (and perhaps incentivisation) as well as regular disclosure on progress.

4) Which form of carbon pricing is most effective in reducing emissions?

The three main forms of carbon pricing – taxing, trading, and using offsets – each have their merits and implementation challenges. The main purpose of carbon pricing is to capture the external costs of GHG emissions and change behaviour towards improved efficiency (lower or no emissions). It is difficult to say which is most effective.

- **Taxes** may be easiest to implement.
- **Trading** may allow more market forces.
- **Offsets** come with co-benefits (and many challenges).

How effective each will be depends on the dynamics of the individual market such as: the source of emissions, the level of existing taxes, public awareness and willingness to change, the abundance of energy as well as how any revenues raised from the scheme are used.

Whichever method is chosen, the manner with which it is implemented is key. For example, the proportion of jurisdictional emissions that are covered, the resilience of the authorities from lobbying (in making allocations), the ability to maintain suitable prices that nudge behaviour, and also whether any potential sanctions are strong enough to influence behaviour.

5) Which sectors already use internal carbon pricing?

Some sectors (and corporations) naturally lend themselves better to internal carbon pricing hence the adoption is not uniform. There are a whole variety of reasons to start using an internal price not least because it helps businesses understand their own emissions and is good preparation for the future when emissions may be priced (higher). The reasons tend to fall into three main categories:

- **Risk management** – to assess potential (future) liabilities / costs in relation to emissions for a project, asset or activity.
- **Decision making** – to determine the potential profitability of an investment, project or line of business.
- **Carbon efficiency** – to identify operational areas to reduce emissions and lower risks.

According to CDP, which routinely asks companies about carbon disclosure, around four-fifths of the ***utilities*** and ***energy*** sectors use internal carbon pricing (based on companies surveyed in 2017). This falls to around half for the ***materials*** sector and then down to below one-third for other sectors.

There is no real reason why any sector would not be able to adopt an internal carbon price – any entity that emits any GHG emissions should be able to. There are companies from all types of sectors which have already adopted one.

There are other factors at play such as: size and complexity of the company, overall emissions, the markets where manufacturing or selling occurs. The overall trend over the past few years is clear, however – more companies are already adopting some form of internal carbon price, and more are planning to do so in the future.

6) Can all offsets be used for compliance in actual ETS schemes?

An *allowance* is a “permission to emit” whereas an *offset* is a certificate of carbon credit (awarded to an activity which prevented a GHG from reaching the atmosphere). Some carbon pricing schemes allow credits/offsets to be used in lieu of allowances. However, there are usually some conditions attached – because not all offsets are equivalent in nature. Each scheme has its own set of rules.

The main priority is to ***lower emissions structurally*** – such that participating entities within schemes emit less. Hence there is often a limit as to what proportion of allowances may be substituted with credits. In the regional trading schemes in China for example, the limit is between 5-10%; in California, it is similar at around 8%. In many jurisdictions, there is a trend towards lowering this limit over time.

Another condition is that of the ***types of credits/offsets*** allowed. For some schemes, the credits must be generated from within the same geographic boundary; for others, there are specific projects which are either allowed / not allowed (e.g. no forestry or certain chemicals). For instance, Phase 3 of the EU ETS stipulates that all credits must come from Least Developed Countries (LDCs) in order to promote projects in those areas.

7) Who and what determines the credibility of an offset mechanism or project?

There are many levels to this which cover the *climate aspects* as well as the *standards and verification* processes of the certifier.

Firstly, the **climate credibility of the project**. This covers the *additionality* and *climate integrity* of the project. *Additionality* describes whether a project delivers emissions reductions "in addition to" the status quo or a baseline scenario that already exists or would have been implemented anyway – commonly known as 'business as usual' or BAU. This can be complicated to assess because it tries to address the question of "what would have happened".

Climate integrity determines whether an activity is truly beneficial to solving climate change. From a mitigation perspective, this essentially means modifying the atmospheric concentration of GHGs by either *reducing* emissions, *withholding* emissions, or *removing* emissions. One further aspect is to prevent carbon leakage, which is effectively stopping emissions intensive activities moving elsewhere.

Secondly, the **robustness of the verification and certification process**. This is largely determined by the accreditation organisation. Some are accredited under organisations such as the UN – these include 'Certified Emission Reductions' from the Clean Development Mechanism (CDM) or 'Emission Reduction Units' from the Joint Implementation scheme; others are run by independent organisations such as the *Gold Standard* or the *Verified Carbon Standard*. For example, the aviation industry has approved an initial six organisations from which airlines may purchase credits for use as offsets.

Sometimes there are also issues surrounding ownership, the duration of the emissions reductions (which should be permanent), and whether the projects ensure that "no significant harm" is done to other areas of sustainability.

8) What determines the price of an offset?

The main determinant of price is whether the credit can be used for *compliance* or just for *voluntary purposes*. Those that can be used for compliance tend to be priced higher (than voluntary ones) and within the range of the trading price of that scheme (but dependent on whether it is spot or future prices).

The second determinant is that of 'supply and demand' – which is related to the *credibility or quality* of the project. For example, projects that are located either in areas where there is higher (perceived) accuracy of GHG accounting, or whether there is a perception that the project can make a bigger local impact – such as in least developed countries – tend to be more sought after by those looking for quality offsets. This allows the ability to price at a premium because there is a lower likelihood that the credibility of the project will become unstuck over time and hence reflect badly on the purchaser.

The type of project also feeds into quality – especially when it comes to forestry (see Q9 below). Rarer types of project, for instance, physical emissions reductions, may also command a premium due to shorter supply.

9) What are some of the issues related to forestry offsets?

Besides the quality and assurance issues discussed above, forestry offsets come with their own set of potential issues. On the surface, forests may seem like an easy category for offsets because as trees grow, they absorb CO_2 from the atmosphere and store it in their biomass. However, broadly speaking forest offsets can be split into two categories: *sequestration* and *avoided emissions.*

For **sequestration** forestry projects that act as carbon sinks, such as afforestation or reforestation and improved management (of forests or soil), the main (potential) issues tend to surround:

- ***Permanence*** – that the forest lasts at least 100 years or more and is not destroyed by fires, insect infestations or illegal logging; and
- ***Additionality*** and ***leakage*** (as explained above) – the issue is really one of monitoring and verification that the sequestration amounts are a fair and true reflection.

For **avoided emissions** forestry projects that prevent emissions from reaching the atmosphere, such as avoiding deforestation or land conversions for agriculture, the main (potential) issues concern:

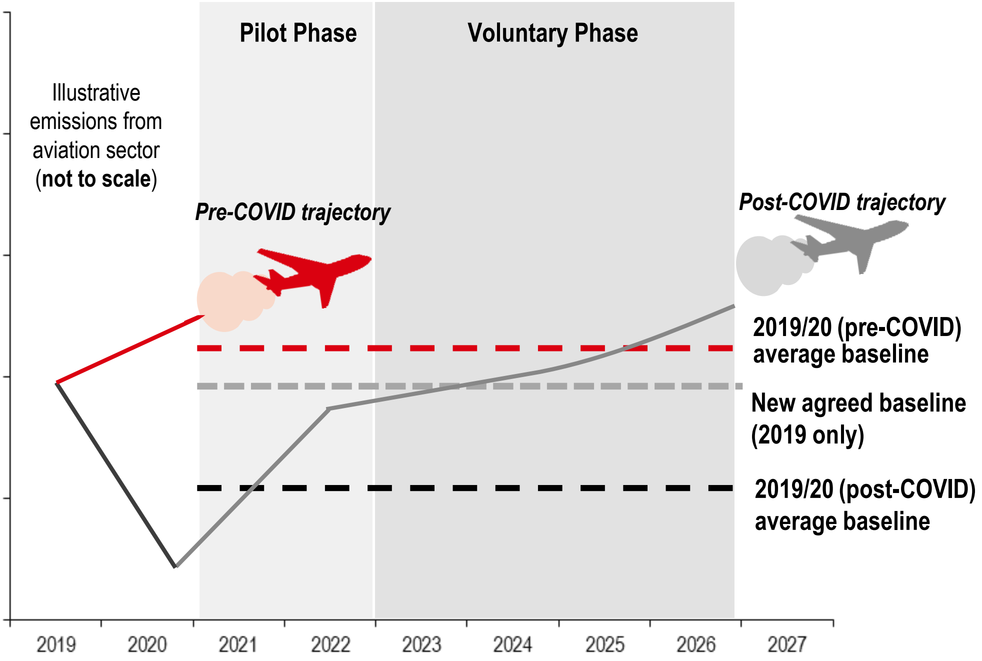
- ***Leakage*** – where the forest remains intact, but harvesting is thus shifted to other forests, or perhaps whether wood is replaced with more carbon intensive materials.
- ***Verification*** – this is key in terms of accurate information that the avoided emissions 'really have been avoided' or that agreements that determined them have been upheld and enforced etc.

10) Will aviation follow through with the CORSIA programme after COVID-19?

The dramatic fall in aviation during COVID-19 has led to some changes to the *Carbon Offsetting and Reduction Scheme for International Aviation* (CORSIA) program. Originally, the scheme was going to offset any excess emissions beyond a 2019/20 average baseline. However, no one envisaged 2020 emissions would be at such low (COVID) levels. It means that a new average of 2019 and (COVID) 2020 would be much lower than expected, thus if the industry were to stick with the 2019/20 baseline then it would face significant costs in purchasing offsets above this new lower level. Not only are airlines around the world already struggling with finances, but many countries would most likely have withdrawn from participation in CORSIA in our view – unless the baseline was changed.

In late June 2020, after extensive lobbying by the industry, ICAO agreed to change the emissions baseline to solely 2019. A 2019 only baseline is below what would have been the original 2019/20 (pre-COVID) average; however, it is above a 2019/20 (with COVID) average. It means that offsets most likely won't be purchased by the industry for a few years yet – as the industry takes time to recover traffic volumes etc. For offset projects, the implications are that demand will reduce as supply (possibly) increases. Overall, the CORSIA program remains intact – although the pilot phase (2021-23) is effectively written off.

Chart 2: Illustration of CORISA's revised emissions baseline



Source: HSBC

The global climate calendar: Upcoming events

2020	Location	Event
21-22 September	To be held virtually	9th World Climate Congress & Expo
29 September-1 October	New Delhi, India	Adaptation Futures 2020
4-12 October	Bonn, Germany	Bonn SB 52 conference
6-10 October (TBC)	TBA	53rd Session of the IPCC
12-13 October	Zurich, Switzerland	9th World Conference on Climate Change
18-19 November	To be held virtually	7th Global summit on climate change
TBC	Lisbon, Portugal	2020 UN Ocean Conference
TBC	Kunming, Yunnan, China	2020 UN Biodiversity Conference
TBD	Beijing, China	UN Global Sustainable Transport Conference
2021		
7-15 January	Marseille, France	IUCN World Conservation Congress
1-12 November 2021	Glasgow, Scotland, UK	26th Conference of Parties (COP 26)

Source: HSBC

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