Carbon Credits: An Overview

To meet national and international net-zero targets, companies need to reduce emissions over time. Such efforts include the measuring of, and reporting on, progress made in this regard for the purpose of showcasing environmental accountability to investors and other stakeholders. Technological advances notwithstanding, some companies may find it prohibitively expensive to meet desired sustainability claims and aims. For example, making cement at industrial scale typically involves a chemical reaction. These hard-to-abate emissions may never be fully eliminated.

In this respect, dealing in carbon credits, and participating in the carbon market, may prove useful. Accordingly, it has become important today for a variety of entities to understand what such credits entail and how these can benefit their respective businesses.

CARBON CREDITS AND CARBON OFFSETS

Carbon credits

Carbon credits ("**CCs**") are a way of reducing greenhouse gas ("**GHG**") emissions by giving a monetary value to carbon dioxide ("**CO2**") or its equivalent ("**CO2e**"), using a metric ton of CO2e as the unit of measurement (such unit, "**MTCO2e**" or "**tCO2e**"). According to India's 'Carbon Credit Trading Scheme, 2023' (the "**Final CCTS**"), GHGs represent those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.

Each CC is a marketable permit or certificate which reflects one MTCO2e that a business is *allowed* to emit. Thus, CCs are commonly used in the context of emissions trading in which companies are given a fixed amount of credits depending on their emissions. These companies can later purchase more credits or sell their surplus, as required. In other words, companies with low(er) emissions can sell their extra allowance to larger emitters in a 'compliance' market (discussed below).

Accordingly, when a company obtains a CC – usually from the government or a regulator – it gains the right to generate one MTCO2e. In some cases, revenues may flow vertically from companies to regulatory bodies, although companies which end up with excess CCs can sell them to other private entities.

The number of CCs issued each year is typically based on emission targets. CCs are often issued under what is known as a 'cap-and-trade' ("**CAT**") system. When regulators set a limit on emissions, that forms the 'cap'. Such cap slowly decreases over time, making it harder for businesses to stay within that limit. Companies are thus incentivized to reduce their emissions to stay within such ceiling.

Carbon offsets

Carbon offsets ("**Offsets**"), on the other hand, are typically created when companies or individuals finance projects that reduce GHG emissions elsewhere either by lowering emissions or sequestering them. For example, reforestation and wetland restoration are natural sequestration solutions that collect carbon in the environment. Further, carbon reduction projects may involve investments in new technology that result in higher efficiencies or lower emissions: *e.g.*, renewable energy projects or direct carbon capture technologies. Additional examples include carbon-storing agricultural practices or waste and landfill management.

Offsets are granted to project owners, who sell them to third parties that want to balance the CO2 they put into the atmosphere by paying to remove CO2 from some other location. The importance of Offsets comes from their horizontal flow, involving carbon trading between companies. When a company removes a unit of carbon from the atmosphere, they can generate an Offset. Other entities may then purchase that Offset from such company to reduce their own carbon footprint.

Thus, Offsets can be considered a unit of measurement to *compensate* a business for investing in green projects/initiatives that aim to reduce emissions. CCs, on the other hand, are a measurement unit to *cap* emissions.

Contextualizing CCs and Offsets

CC and Offsets form part of a larger ecosystem with respect to carbon markets where entities can trade, sell or buy CO2e-linked instruments to meet their emission targets, or for the purpose of supporting environmental goals.

The concept of CCs and 'offsetting' was created by the United Nations Framework Convention on Climate Change ("**UNFCCC**") as a way to tax polluters for carrying on polluting activities. Monetization of pollution is effectively an environmental tax

designed to change human, governmental and corporate behavior – including in terms of sustainability and energy efficiency.

While the UNFCCC (which enjoys near-universal membership, comprising almost 200 countries) remains the parent treaty, other international accords like the Kyoto Protocol of 1997 and the Paris Agreement of 2015 established global decarbonization goals, including in terms of stabilizing atmospheric GHG concentrations at a level – and within a timeframe – that might allow climate and ecological systems to adapt naturally and sustainably. Over time, these agreements gave rise to national emissions targets, along with supporting domestic regulations to secure compliance and/or voluntary pledges.

CARBON MARKET

Within the broader carbon marketplace, there are two separate markets. One is a regulated compliance market (the "compliance carbon market" or "**CCM**"), punctuated by limits imposed on the volume of GHG emissions that an entity or industry is permitted to generate. Such limits are pre-defined – *i.e.*, these are set by law and/or via dedicated rules-based regimes, usually at the regional or state level. Eligible or obligated entities need to compulsorily comply with such pre-set limits.

In India, for instance, the Power Ministry ("**MoP**"), in consultation with the Bureau of Energy Efficiency ("**BEE**"), issued the Final CCTS pursuant to a gazette notification dated June 28, 2023.

The other kind of carbon market is a voluntary one (the "voluntary carbon market" or "**VCM**") where businesses and individuals may buy (or sell) CO2e-linked instruments of their own volition to offset their respective GHG emissions.

On account of the carbon marketplace (comprising both the CCM and the VCM, respectively), the amount of GHG emitted gets converted into a marketable commodity by attributing a price to such emissions. Accordingly, this commodification falls into two categories – CCs and Offsets – where the carbon market allows investors and companies to trade both such instruments simultaneously.

CC trading

CCs are especially relevant when a CAT system exists. From a regulatory perspective, a CAT regime aims to reduce the aggregate volume of GHG produced by a group of emitters by establishing a ceiling on permitted emissions. This market-based approach promotes lower emissions and higher investments into energy efficiency, along with an increased use of fossil fuel alternatives.

From a business/entity-level perspective, CCs can be used by those that have a legal obligation to reduce their emissions under a CAT system – such as the emissions trading system ("**ETS**") of the European Union (the "**EU ETS**") – the world's first ETS – or the Regional Greenhouse Gas Initiative ("**RGGI**") in the US.

Offset trading

Since Offsets are typically traded on a voluntary market, such VCMs may include businesses which aim to decrease their carbon footprint without a legal mandate to do so. Thus, market participants purchase Offsets to achieve internal emission targets and/or for the purpose of reducing emissions for ethical, social or business reasons (including when the intent is to signal a level of environmental consciousness to the wider market and/or if such goals have been publicly pledged to investors, shareholders and/or other stakeholders). By buying Offsets, entities can fund projects that fight climate change, instead of taking actions to lower their own carbon emissions. This way, the buyer's CO2 emissions are 'offset' with an equal amount of CO2 reductions in a different place.

Offsets can come from a variety of sources, such as the Clean Development Mechanism ("**CDM**"), the Gold Standard and the Verified Carbon Standard ("**VCS**"). Such programs outline the criteria that Offsets should achieve in order to obtain appropriate certifications. Projects are then examined and accredited pursuant to such standards.

In general, Offsets are supposed to direct private financing to climate-action projects that would not otherwise materialize. These projects can have additional benefits such as biodiversity protection, pollution prevention, public-health improvements and job creation. Offsets also support investments into necessary innovations for the purpose of lowering the cost of emerging climate technologies.

For instance, the China Certified Emission Reduction ("**CCER**") scheme – a VCM poised to relaunch soon – aims to complement China's ETS (the world's largest national carbon market). The CCER scheme involves emissions reduction activities conducted by companies on a voluntary basis that are certified by the Chinese government, including renewable power generation, waste-to-energy and forestry projects.

REGULATORY FRAMEWORK

As discussed, in response to the Paris Agreement and other international accords, several countries and businesses have pledged emissions reduction goals. Accordingly, national governments and regulators seek to put a cap on the amount of

CO2 that a business in a particular industry can emit in order to achieve such goals. These regulations allow entities to convert the margin below their emission limit into an equivalent amount of CCs, which can then be sold to another entity that requires such CCs to comply with applicable regulations.

India

On March 27, 2023, India's MoP had shared a copy of a proposed carbon credit trading scheme (the "**Draft CCTS**"). The ultimate objective of the Draft CCTS was to decarbonize the Indian economy by pricing GHG emissions through the trading of CC certificates ("**CCCs**"). This Draft CCTS had contemplated both CCM (compliance) and VCM (voluntary) components.

VCM

Under the proposed VCM of the Draft CCTS, 'non-obligated' entities had been permitted to voluntarily register their projects for reducing or removing GHG emissions in order to get CCCs issued in their favor. However, the Final CCTS does not refer to a VCM – except to the extent that non-obligated entities can purchase CCCs on a voluntary basis.

Nevertheless, pursuant to a gazette notification dated June 26, 2023, the Ministry of Environment, Forest and Climate Change ("**MoEFCC**") proposed the Draft Green Credit Programme Implementation Rules, 2023 ("**Draft Green Credit Rules**"). These rules seek to establish the 'Green Credit' program in the form of a voluntary market mechanism. Thus, green credits, which may arise from a range of sectors and entities, are proposed to be made available for trading on a domestic platform. Recent reports also suggest that the National Stock Exchange of India Limited ("**NSE**") is exploring opportunities in the voluntary CC market.

CCM

Under the *compliance* regime of the Final CCTS – the framework for which has remained largely similar to the one contemplated under the Draft CCTS – 'obligated' entities will need to adhere to prescribed GHG emission norms, as notified by the central government.

OBLIGATED AND NON-OBLIGATED ENTITIES

'Obligated entities' are those which are required to register for the Final CCTS, as notified under the CCM, including designated consumers ("**DCs**"). On the other hand, 'non-obligated entities' – while requiring registration under the Final CCTS – are those which can purchase CCCs on a voluntary basis (*i.e.*, despite not being notified under

the compliance mechanism). However, the Final CCTS makes no mention of whether such non-obligated entities can *register their projects* for CCC issuances.

The Final CCTS also states that a detailed procedure – as later developed for the purpose of operationalizing the Indian carbon market – will contain specific criteria for CCC issuances.

CONCLUSION

In the past, with the aim of developing a voluntary energy market in India, the BEE had proposed the eventual adoption of a CAT system for the Indian carbon market. In this regard, the BEE had referred to the untapped potential of carbon pricing, anticipating that a BEE-driven market would generate the necessary confidence to overcome entry barriers – such as a lack of consistent and clearly defined price-setting benchmarks – for the purpose of encouraging new entrants to join a widened Indian VCM.

In this regard, the BEE had contemplated increasing VCM *demand* by opening it up to buyers other than DCs, expecting demand to mainly stem from: (i) voluntary buyers; (ii) existing DCs which are part of the 'Perform, Achieve and Trade' ("**PAT**") scheme – a trade-based regulatory framework established through a 2010 amendment to the Energy Conservation Act, 2001 (the "**EC Act**") for the purpose of reducing energy consumption in energy-intensive industries involving certifications related to excess energy savings ("**ESCerts**"); (iii) designated state agencies which may be permitted to participate in India's VCM, (iv) state-owned electricity distribution companies ("**discoms**") with renewable purchase obligations ("**RPOs**") – *i.e.*, the requirement to purchase a minimum percentage of electricity from renewable energy ("**RE**") sources under India's Electricity Act, 2003, while RE certificates ("**RECs**"), which are market-based tradeable instruments that represent the environmental attributes of RE, can be used to meet such RPOs; and (v) the aviation sector as a whole – given global concern with respect to growing emissions from the airlines industry.

Further, the BEE had also proposed to increase the *supply* of CCs in the voluntary market by opening it up to sellers other than DCs. This could involve the registration and validation of emissions reduction projects – which may subsequently issue CCs. The BEE had hoped that the voluntary market could eventually evolve into a mandatory CAT system, in which DCs will be required to restrict their emissions within a pre-fixed cap.

Ultimately, a functional CAT regime – along the lines of the EU ETS – may be launched with sectors and entities that are already part of PAT. Obligated entities may be provided with emissions intensity targets, and the allocation of CCCs could be made

on that basis. Subject to their performance with respect to GHG intensity as well as compliance with such pre-set targets, these entities may then choose to abate or trade in emissions.

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