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SINGAPORE CARBON INITIATIVES: INTRODUCTION TO CARBON MARKETS

Interest in carbon markets is growing across the globe. Singapore has led the way in carbon regulation in South-East Asia and has been proactive in seeking opportunities for international collaboration. In this briefing, we explore the different forms of carbon market – regulated, voluntary and hybrid, and consider the opportunities available to participants in Singapore.

Why is interest in carbon markets growing?

- Carbon credits are not new. Since their formal international recognition under the Kyoto Protocol in 1997, boosted by the Paris Agreement signed at COP 21, pricing emissions has become a popular decarbonisation policy globally. This sentiment is likely to continue to grow in 2024 and beyond.
- Carbon markets have seen significant development and it has been clear for a while that they are here to stay, with emerging mechanisms, structures, guidelines and documentation, and governments taking steps to define their local carbon market policies. The UK and EU, in particular, have well-established, regulated carbon markets, and there is a global push to create hybrid carbon markets that encourage international participation.
- The push towards standardisation in the voluntary carbon market has never been stronger. There have been perennial concerns about the lack of standardisation in the voluntary carbon markets which hinder their liquidity, development and effectiveness. However, important efforts are being made by public and private bodies to encourage consistency, standardisation and interoperability, and to address the integrity and accountability of emissions reductions.
- 2023 was a slow year for the voluntary carbon market. However, the lack of agreement in the COP 28 Global Stocktake on how to develop Article 6.2 and Article 6.4 mechanisms (envisaged under the Paris Agreement) has given an implicit green light to the voluntary carbon credit market to take substantial steps forward.
- The popularity, and the ripple effect, of new carbon tariffs remains to be seen. The EU's Carbon Border Adjustment Mechanism (CBAM) entered into effect from 1 October 2023, with a transitional phase that runs until the end of 2025. This has already spurred other countries into consider implementing their own carbon pricing mechanisms, including the UK

(which has announced its own UK CBAM to be implemented by 2027), Canada, Australia, Turkey, Indonesia, Vietnam and Thailand.

- There has been an increase in Singapore's carbon tax rate under the Carbon Pricing (Amendment) Act 2022, from SGD 5 per tonne of taxable emissions to SGD 25 per tonne of taxable emissions as of 1 January 2024. Furthermore, this carbon tax rate is set to increase again – to SGD 45 per tonne from 1 January 2026 and, based on statements from the Singapore Government, is likely to rise to between SGD 50 to SGD 80 per tonne by 2030.
- Singapore's international collaboration grows ever stronger including, among other things, its memorandums of understanding with other countries and Implementation Agreements with Papua New Guinea and Ghana. These will likely have domestic implications.

What are carbon markets?

Carbon markets are systems that have been established to control greenhouse gas emissions (GHG Emissions), typically through the issuance or buying and selling of carbon allowances or carbon credits (in voluntary / hybrid markets); see further below. It is important to distinguish between credits and allowances and the mechanisms from which they originate – a carbon allowance (see regulated / compliance markets below) permits the holder of such allowance to emit one metric tonne of CO2 equivalent (tCO2e) emissions (a right to emit), whereas a carbon credit (see voluntary market and hybrid markets below) represents 1 tCO2e of emissions reductions, avoidance or removals and may be retired by the holder of such credit to offset 1 tCO2e of emissions (an ability to offset).

What is tCO2e?

One metric tonne of CO2 emissions, or an amount of greenhouse gas that has the same global warming potential as one metric tonne of CO2 emissions.

How these allowances or credits are originated and what their purposes are vary significantly across the types of carbon markets. The general view is that there are three types of carbon markets:

Regulated / Compliance Markets

Regulated markets are established by government bodies, typically used to target specific industries where GHG Emissions are most significant – for example, power, aviation, shipping and energy-intensive industry sectors. Entities within the scope of such a scheme must ensure that they hold and surrender carbon allowances to cover their GHG Emissions. A common feature of these schemes is a "cap-and-trade" mechanism. In short, an establishing government body sets a cap on GHG Emissions from in-scope businesses, allocates a set number of carbon allowances to in-scope businesses (permitting that number of metric tonnes of carbon to be emitted by such in-scope businesses) and reduces the number of carbon allowances issued to such in-scope businesses over time.

Examples of regulated carbon markets include the European Union Emissions Trading System, the United Kingdom Emissions Trading Scheme, China's National Emissions Trading Scheme, the California Cap-and-Trade Program and the Regional Greenhouse Gas Initiative.

Voluntary Market

As the name suggests, participation in this type of market is voluntary and the market is not formally regulated. An entity that is not subject to any

compliance scheme may still choose to offset their GHG Emissions – an increasingly popular option from a corporate responsibility and sustainability perspective.

In terms of where voluntary carbon credits come from, any entity can generate voluntary carbon credits by developing a project that has the effect of reducing, removing or avoiding GHG Emissions in compliance with the rules and requirements of one of the carbon standards, such as Verra's Verified Carbon Standard (VCS) or Gold Standard. Different prescribed criteria will also apply to a carbon credit, depending on the type being issued and the standard the project is registered under. The carbon standard will issue to the entity that owns the project one carbon credit for each tCO2e of emissions verified as having been removed, avoided or reduced as a result of that project.

The biggest carbon standards are Verra, The Gold Standard, American Carbon Registry and Climate Action Reserve. Via their registries, the carbon standards issue carbon credits and keep track of, among other things, how many carbon credits have been issued pursuant to any project registered with them, who is the owner of such carbon credits, and how many have been retired.

Carbon credits issued off the back of a project may be sold in the voluntary market. The buyer of any such carbon credit may either use them towards their climate mitigation objectives or sell them – voluntary carbon credits do not typically have an expiry date (though generally become less valuable the older the "vintage").

Hybrid Markets

The most well-known hybrid markets are the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the Clean Development Mechanism (CDM).

CORSIA is an initiative developed by the International Civil Aviation Organisation (ICAO) to reduce CO2 emissions by measuring, reporting and verifying CO2 emissions from the aviation sector in each of ICAO's participating member states (the compliance element) and offsetting such emissions using approved CORSIA-standard carbon credits, which includes voluntary carbon market standards bodies that ICAO has approved to supply eligible credits into the scheme (the voluntary element). The goal is to ensure that airlines in the participating member states stabilise their CO2 emissions at 85% of 2019 levels, by offsetting any growth in CO2 emissions from that baseline level through the purchase and surrender of such CORSIA-standard carbon credits. This, the first global market-based measure for any sector, is a Paris Agreement-aligned initiative that aims to provide infrastructure to airlines to make actionable climate pledges to reduce CO2 emissions in the aviation sector. Participation in CORSIA is, for now, voluntary for ICAO members, but will eventually be mandatory.

The CDM was established under Article 12 of the Kyoto protocol – and is a so-called "hybrid" market because it is governed by international laws while having voluntary participation. Its purpose is to benefit "investor" developed countries and "carbon credit issuer" developing host countries alike, by allowing "investor" countries to invest in sustainable projects to contribute towards the development of such "carbon credit issuer" host countries. These

projects would produce carbon credits that would be allocated to "investor" countries, helping them to meet their targets to reduce GHG Emissions. Public and private entities in these "investor" countries can also participate in the CDM to obtain carbon credits.

The general expectation now is that the Article 6.4 mechanism, which envisages an international carbon credit trading mechanism, will have the effect of replacing the CDM once developed. A significant breakthrough at COP 26 was that a general framework (broadly resembling the CDM) for this mechanism was agreed – however, little progress has been made since.

What does the Singapore carbon market look like?

To date, Singapore does **not** have a regulated carbon market. It is important to distinguish between the existence of carbon regulation (regulation that addresses carbon emissions) from there being a regulated carbon market (regulation that creates a regulated / compliance carbon market as described above). While the two are not mutually exclusive, Singapore's carbon regulation does not create a regulated carbon market. Singapore likewise does not have a hybrid carbon market.

What Singapore does have, as a result of its carbon regulation, is a carbon tax which applies to all facilities producing 25,000 tonnes or more of reckonable GHG Emissions (and would apply to all such emissions), which will be the subject of a future blog post. This was the first carbon tax established in Asia, covers 80% of Singapore's domestic emissions, and up to 5% of the liability for it may be satisfied by carbon offsetting (subject to certain requirements).

Singapore has positioned itself to be a significant player in the voluntary carbon market. Singapore is home to two prominent carbon trading platforms (Climate Impact X and AirCarbon Exchange) and a carbon standard (Asia Carbon Institute), and there are many more initiatives and new businesses underway. The carbon tax similarly encourages participation in the international voluntary carbon market (through the opportunity to use its carbon offsetting mechanism). Singapore has also been proactive in negotiating arrangements with other countries and setting up initiatives to support international collaboration on carbon projects including, among other things, the development of transition credits for the early retirement of coal plants in the Philippines – topics that we will also be considering in future briefings.

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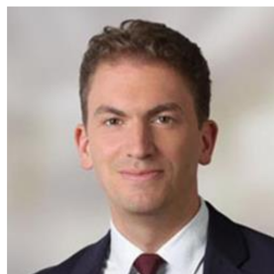

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