

Maximising Singapore's Readiness as a Carbon Services Hub

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SYNOPSIS

Singapore is positioning itself as a hub for trading carbon credits generated from nature-based solutions, leveraging on existing advantages of having an ecosystem of services to engage in carbon finance and trading. However, substantial capacity building is still needed to ensure readiness for Singapore to become a leading carbon services hub. This policy brief examines the issues surrounding Singapore's efforts in this regard.

KEY POINTS

- Foundations like the carbon tax and carbon marketplaces will build knowledge capabilities and send signals to businesses, but more has to be done to maximise readiness for post-2020 climate markets.
- Singapore has a role to play in developing broad consensus on assurance and integrity standards in a world where heterogeneous carbon markets exist. Doing so will enable it to build trust and accountability, and to facilitate the use of high-quality carbon credits for emissions reduction.
- Singapore must look at developing a pipeline of talent and experts, including by encouraging school curriculum to adapt, and by channelling research attention to develop and increase understanding of carbon accounting methodologies relevant to Asia, especially in terms of nature-based climate solutions.

INTRODUCTION

The world is adopting increasingly stringent climate targets for a low-carbon future and to hold temperature increase to below 2 degrees Celsius above pre-industrial levels. This transition is resulting in a shift in investment patterns and behaviors, and has sparked innovation in technological development, infrastructure spending, and financing mechanisms. In 2020, a South Pole-Vivid Economics-Engenco consortium conducted a study commissioned by the Enterprise Singapore and the Singapore Economic Development Board to study the potential economic opportunities to be reaped in providing carbon services. The report noted that Singapore is already a carbon services hub on account of its pre-existing advantages, favourable policy and regulatory environment, and attractiveness to business and professionals both geographically and

culturally. Singapore is well-positioned to provide complementary services to support decarbonisation efforts in the Southeast Asian region. The goal now is to ensure Singapore and the rest of the region is ready engage in carbon markets and their development.

This policy brief examines efforts by the Singapore government to develop the carbon services hub, as well as a gateway to trusted, high-quality carbon projects in Southeast Asia. As the world gears up for the carbon market mechanism of the Paris Agreement, including the need for higher levels of preparation for markets and the development of robust accounting systems to ensure that traded units are real and not double counted, this brief also explains why institutional coordination and further capacity building will be important to ensure that Singapore is ready to handle large volumes of international transfers of carbon.

ANALYSIS

Laying the Foundation

Singapore is home to over 280 global trading companies and is an established commodity trading hub. In addition, the nation hosts some 4,200 regional headquarters and was ranked the 5th most competitive financial centre globally in the 2021 Global Financial Centres Index compiled by the Z/Yen Group biannually, in cooperation with the China Development Institute. This means that there is an existing ecosystem of services including highly skilled labour and infrastructure to engage in carbon and green finance, and in carbon trading. Many large local and foreign firms have also pledged net-zero emissions targets. This has led to corporate engagement in voluntary carbon markets starting with offsetting and insetting activities, since there are limitations on the growth of renewables in the form of solar photovoltaics due to Singapore's small land area and urban density.

Singapore introduced a carbon tax in 2018. The current tax rate is SGD5 per tonne of carbon dioxide equivalents (or "CO₂e") over a period of five years from 2019 to 2023. This tax rate is scheduled to increase to between SGD10 and SGD15 per tonne by 2030, though the tax level and trajectory post-2023 will be reviewed by 2022 in response to calls by Members of Parliament in February 2021 to review the rate. The outcome of the post-2023 carbon tax level and trajectory review is scheduled to be announced at Budget 2022. Public consultation engagements are being planned to seek views on how the Singapore Green Plan and the carbon tax can help Singapore move to a low-carbon and sustainable future.

Singapore's carbon tax, under the Carbon Pricing Act, works as a Fixed Price Credit Based (FPCB) system. For the past two years, companies have had to pay the carbon tax by surrendering non-tradeable, fixed price carbon credits they buy from the Government. According to Singapore's Long-Term Low-Emissions Development Strategy (LEDS) document, *Charting Singapore's Low-Carbon and Climate Resilient Future* published in 2020, the FPCB mechanism "puts in place key building blocks that help regulatory bodies and companies build up necessary capabilities to trade credits in a linked market". Stable

governance and foresight in developing long-term climate policy is seen as favourable attributes for a carbon services hub. Having Government support towards developing domestic institutional structure and capabilities for administering carbon market mechanisms allows Singapore to attract skilled professionals to work and firms to set up here. The country has set clear long-term targets, such as its updated nationally determined contribution (NDC) in 2020 to peak greenhouse gas emissions at 65 million tonnes of carbon dioxide equivalent (MtCO₂e) by 2030. Beyond this, it will halve peak emissions to 33MtCO₂e by 2050 and achieve net-zero emissions as soon as viable before 2100. These are strong signals for the development of sustainability expertise.

Market Readiness

In November 2018, the first global chapter of the World Bank's Carbon Pricing Leadership Coalition (CPLC) was launched in Singapore with the Global Compact Network Singapore (GCNS). Momentum is growing for carbon pricing in Asia and the chapter's establishment highlights the significant role Singapore is playing in the region through CPLC Singapore. To enable greater participation, Singapore is working with the World Bank and the International Emissions Trading Association (IETA) to develop the Climate Warehouse, an initiative developed by the World Bank's Carbon Markets and Innovation team. The Warehouse aims to increase transparency across different carbon markets and reduce double counting of credits. It will be a crucial tool to manage risks associated with participating in carbon markets.

In September 2021, a new governance body under the Taskforce on Scaling Voluntary Carbon Markets was announced. Two Singaporeans, Professor Koh Lian Pin, Director, Centre for Nature-based Climate Solutions, National University of Singapore and Vinod Kesava, principal founder and CEO of Climate Resources Exchange (CRX) and the CRX CarbonBank were appointed to the expert panel with Professor Koh serving as one of four co-chairs. The Governance Body is set to transform the voluntary carbon markets, working towards setting the threshold standard for high-quality carbon credits and a framework for the markets.

This follows an announcement in May that a new global carbon exchange will be set up in Singapore. Climate Impact X (CIX) is a collaboration between the Development Bank of Singapore, Singapore Exchange, Standard Chartered Bank and Temasek Holdings. CIX came out of the Emerging Stronger Taskforce's Alliance for Action on Sustainability, set up under the Future Economy Council to help Singapore seize new growth opportunities by examining shifts caused by the COVID-19 pandemic. The new marketplace to trade carbon credits will commence in late 2021, and it will join five other exchanges trading in carbon allowances, namely the European Climate Exchange, NASDAQ OMX Commodities Europe, PowerNext, Commodity Exchange Bratislava and the European Energy Exchange. There are other climate marketplaces such as Climate Trade, and AirCarbon which originated in Singapore in October 2019. There are also meta-registries by IHS Markit to track, manage and account for trades of credits generated from mitigating climate change impacts across various independent carbon markets and registry systems from around the world.

There is intense competition with more banks coming together to set up digital platforms designed to provide liquidity, price discovery and transparency for carbon credit projects. To get ahead of the curve, CIX has said it wants to focus on ensuring the environmental integrity and quality of traded credits by working with the Taskforce on Scaling Voluntary Carbon Markets and the Natural Climate Solutions Alliance. Data analytics, satellite monitoring, machine learning and blockchain technology used to monitor, report and verify credits traded on CIX will also help. Every market is different, so there is no one way to design an exchange. However, as CIX is likely to focus first on nature-based climate solutions, the use of digital technologies first to measure, report and verify emissions from forestry and land-use projects including satellite data, aerial sensors from drones, low-flying aircraft may need to be used. If so, Singapore must build up such capabilities and better understand the methodologies used to calculate carbon in an Asian or tropical context. A World Bank report on the Simulation on Connecting Climate Market Systems published in 2019 notes that blockchain technology

could be one way to provide the traceability and immutability needed to verify that credits are not double counted and can facilitate linkages between national registry systems consistent with the bottom-up ethos of the Paris Agreement.

What is clear is that future carbon markets will look and work differently from those that came out of the Kyoto Protocol's flexibility mechanism, which were primarily top-down. Under the Kyoto Protocol, when just 37 industrialised countries listed in Annex I had quantified emission limitation and reduction objectives, developing countries readily gave up the generated credits from projects as they did not have legally binding obligations to fulfil. Now that all countries under the Paris Agreement have to submit and maintain successive NDCs, the country generating the emissions reductions could wish to claim them towards achieving its own NDC. The operationalisation of carbon markets under the Paris Agreement is more complex because more countries now plan to use market and non-market approaches to complement domestic emissions reduction measures compared to before.

Preparing for Post-2020 Carbon Markets

According to Kelly Kizzier, Associate Vice President for International Climate at the Environmental Defense Fund and former co-chair of the UNFCCC's Article 6 negotiations, Article 6 is one of the least accessible and complex concepts of the Paris Agreement. It should have been concluded at COP24, in Katowice, Poland in 2018 with the rest of the Rulebook. The COVID-19 pandemic resulted in the postponement of COP26 by a year, causing further delay in finalising the rules on how countries can reduce their emissions using the international carbon market. For past discussion on Article 6, please refer to *ESI Policy Briefs* no. 30 and 33.

Outside of Article 6, however, states and companies will still find other ways to achieve their climate goals, especially those motivated to pursue net-zero targets. Japan, Norway, Sweden, and Switzerland have already begun to invest directly in emission abatement projects overseas in exchange for a share of the resulting emission offsets, under the rubric of "Article 6 pilots". The intended aim is to

eventually integrate these pilots into Article 6 mechanisms, if they materialise. On the other hand, companies have been using carbon offsets for some time now. Ecosystem Marketplace noted in their *State of the Voluntary Carbon Markets 2021* report that the number of carbon offsets issued has been skyrocketing since 2019. Before this period, the volume of offsets never exceeded 100 MtCO_{2e}. However, in 2019, this figure reached 158.3 MtCO_{2e}, and increased further to 198.3 MtCO_{2e} last year. In the first 8 months of 2021, 238.5 MtCO_{2e} of offsets were issued. However, only about half of the offsets issued since 2005 have been retired (i.e. used against the buyer's emissions inventory). Much of this glut stems from the entry of new projects since 2016, when the Paris Agreement was adopted. This glut however, is likely to close as more companies adopt net-zero commitments. It will be this growth in voluntary commitments for which Singapore's carbon services hub will be geared towards. These companies, as well as those operating in the region are a large captive audience for Singapore and Singapore-based professional services firms to provide carbon services, such as carbon footprinting, sourcing for carbon offsets and projects, providing and participating in green finance and investments, low carbon advisory amongst others. The success of CIX and Singapore's carbon services hub status will depend mostly on developments in the private sector, regardless of Article 6. The Science-Based Targets Initiative noted that amongst Asian economies, Singapore and India are close to reaching a 20 per cent "critical mass" in terms of companies setting Paris Agreement-compliant goals, ahead of putative leaders like South Korea and Taiwan. Only Japan has exceeded this 20 per cent figure. Singapore appears to have a head start, though the size of the domestic and regional market remains to be seen.

CONCLUSION

While Singapore has seen an increase in carbon services consultancies set up here in the past few years, knowledge and expertise on carbon markets remain scarce. The Government must look at developing a pipeline of talent and experts, including by encouraging school curriculum to adapt, and by channelling research attention to develop and increase understanding of carbon

accounting methodologies relevant to Asia, especially in terms of nature-based climate solutions. All of this is complex. Singapore can play a role in fostering broad consensus on assurance and integrity standards as the carbon market develops. Higher levels of preparation, including by establishing transparency as a core element of markets, will build trust and accountability. This will establish clearer norms for firms and countries to use high-quality carbon credits, including toward their net-zero targets in a way that is transparent, credible and most importantly, aligned with the goal to limit global warming to below 2 or 1.5 degrees Celsius.

WHAT TO LOOK OUT FOR

- Singapore's efforts to deepen trading linkages and data sharing with green finance and carbon market leaders to enhance inter-operability and cross-regional capital flows.
- COP26 in Glasgow from 31 October to 12 November 2021, where Article 6 rules are scheduled to be presented to the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) for consideration.

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