

MARKETS FOR NATURAL CLIMATE SOLUTIONS

An NCS Options Paper for Singapore
April 2020



OVERVIEW: OPTIONS PAPER

This document sets out a number of ideas that the Singapore Government could support or implement to help enable private sector investment in NCS at scale. The first sections present an overview of IETA's new initiative 'Markets for Natural Climate Solutions' and the current policy context in Singapore. It then leads into a section outlining a number of NCS options which the Government could consider taking forward. The document concludes with a short overview of current business and NGO support for NCS policy and a set of IETA recommendations.

MARKETS FOR NATURAL CLIMATE SOLUTIONS

Markets for Natural Climate Solutions is a new IETA initiative which was launched at COP25. Its mission is to maximise business investment in NCS to ensure it plays the fullest role possible in delivering the goals of the Paris Agreement.

NCS are one of the most cost-effective forms of CO₂ management¹ and can make a critical contribution to meeting the goals of the Paris Agreement. However, at present only about 3% of total climate finance is directed towards NCS. Consequently, there is a huge discrepancy between what is spent on this solution and what is on offer. Markets for Natural Climate Solutions was created to address this discrepancy by creating global markets for carbon credits generated from NCS. We believe that creating robust and efficient market structures will enable private sector investment in NCS at scale and help ensure it plays the fullest role possible in delivering the goals of the Paris Agreement.

CLIMATE POLICY & NCS: SINGAPORE CONTEXT

Singapore submitted its first INDC² in July 2015, ahead of the signing of the Paris Agreement at COP21 later that year. In that INDC, Singapore committed to reduce its emissions intensity by 36% from 2005 levels by 2030 and stabilise its emissions with the aim of peaking around 2030.

To help deliver this target, in 2019 Singapore introduced a carbon tax on installations emitting more than 25,000 tonnes of CO₂e per year. The tax is currently set at S\$5/t during the transition phase of 2019–2023. It will be reviewed by 2023, with the intention to increase it S\$10–S\$15/t by 2030. The Government expects to collect revenues of nearly S\$1 billion over the first five years which will fund green initiatives.

The tax uses a Fixed Price Credits-Based system (FPCB), meaning that liable installations need to purchase non-tradeable credits from the National Environment Agency (NEA) and then retire them. Adopting this type of approach lends itself to either accepting other types of credits as compliance instruments in the future or converting the system into an ETS.

¹ Natural Climate Solutions: Griscorn et al (2017). PNAS, October 31, 2017 114 (44) 11645-11650

² Singapore's [Intended Nationally Determined Contribution](#) and Accompanying Information.

In March 2020, Singapore submitted an enhanced NDC³ and a long-term low GHG emission development strategy⁴ to the UNFCCC. Singapore now aims to peak emissions at 65 MtCO₂e around 2030 and then halve emissions by 2050, with a view to achieving net-zero emissions as soon as viable in the second half of the century. These two documents – and especially the latter one – express Singapore’s interest in using international market-based mechanisms and positioning Singapore as an international hub for carbon trading. The document states that “The FPCB mechanism puts in place key building blocks that help regulatory bodies and companies build up necessary capabilities to operate in a linked market, should we decide to do so in the longer term.”

The long-term low GHG emission development strategy also communicates some of Singapore’s interest in nature-based solutions. This includes the “One Million Trees” movement to plant a million trees across Singapore by 2030, and the restoration and enhancement of mangroves to mitigate coastal erosion and contribute to climate mitigation. To help build capacity in Singapore and the region, the National University of Singapore is also setting up the Centre for Nature-based Climate Solutions, which will open in summer 2020.

NCS OPTIONS TO BE CONSIDERED

Singapore’s enhanced NDC makes it one of the first developing economies to set an absolute cap on domestic emissions and target net-zero emissions in the second half of the century – in line with the goals of the Paris Agreement. It also communicates its desire to see Singapore emerge as a carbon trading hub for the region, to complement its position as a global centre for trade across a number of markets and commodities.

Being an island-city State with limited domestic abatement opportunities, it inevitably focuses attention on *international* policy options Singapore could pursue now to deliver on both its climate and trading goals. We outline four ideas below:

1. Carbon Tax evolution

A key option to stimulate trading activity and position Singapore as a regional hub would be to accept international credits for compliance with the carbon tax. This could be introduced in parallel with raising the ambition of the tax by expanding its scope. At present, any installation emitting more than 2,000 tonnes of CO₂e has to submit an emission report to the NEA (even though the tax is only levied on installations with much higher emissions). This means the NEA will have high quality emissions data and it would be a relatively simple task to expand the scope of the tax by lowering the entry threshold. To provide liable companies with more flexibility, this could be combined with an expansion of compliance units to include international carbon credits – including from natural climate solutions – alongside the Fixed Price Credits the Singapore Government currently uses. These international credits could be sourced via Options 2 and 3 outlined below (Article 6 pilot projects or a Public-Private NCS Fund).

There are many precedents that Singapore could draw from if it chose an approach like this. Colombia, Mexico, Chile and South Africa have all implemented carbon taxes which accept credits in lieu of payment. Notably, when Colombia introduced its tax in 2017 it accepted international credits in its first

³ Singapore’s Update of its First [Nationally Determined Contribution](#) and accompanying information

⁴ [Charting Singapore’s Low-Carbon and Climate Resilient Future](#)

phase. It also accepts credits from domestic REDD+ activities which has helped to channel private finance directly to climate mitigation activities.

A natural evolution to this development would be to also transition the carbon tax into a fully-fledged emissions trading system. This should be appealing as cap-and-trade markets have the benefit of being able to guarantee the delivery of climate targets at lowest cost. It could therefore be a key policy tool to deliver Singapore's enhanced NDC.

Given the potential size of a Singapore ETS, it would be natural to consider linking to other systems from the outset. Singapore can learn from Switzerland's experience, who have operated an ETS of only ~5 Mt CO₂ for several years. In 2017, Switzerland concluded an agreement to link their market to the much larger EU ETS. The link became operational in January 2020, meaning that units from each system are fully fungible. This has provided Switzerland with a huge boost to its liquidity.

Singapore could also draw from the experience of the UK, which introduced the UK ETS in 2002. Part of the aim of this development was to establish London as a global centre of emissions trading ahead of the start of the EU ETS in 2005. This approach has proved to be highly successful. In 2019, the value of the EU ETS increased to €169 billion with nearly 7 billion EU Allowances (EUAs) changing hands⁵. Most of this trading took place via the London based Intercontinental Exchange (ICE) or through London based brokers.

When considering potential market partners, Singapore would likely have a number of regional countries to consider. Both Indonesia and Thailand are actively developing domestic carbon markets, China is on the cusp of launching its national ETS and South Korea currently operates the world's second largest ETS. Linking with regional partners could also be an opportunity to support the expansion of the trade in NCS units as part of national ETS systems.

2. Article 6 NCS pilot projects

To start to build a supply of international carbon credits, Singapore could develop a number of Article 6 NCS pilot projects. This could build on the experiences of countries like Switzerland⁶ and Sweden⁷ who are already tendering for Article 6 projects. The level of maturity of the Article 6.2 text achieved at COP25 (and the relative failure regarding Article 6.4) adds justification to this approach.

There are a number of countries in South East Asia who may be obvious partners to open discussions with, such as Indonesia, Thailand, Vietnam and Cambodia. All these countries are part of Japan's Joint Crediting Mechanism (JCM), which is a present-day example of how Article 6.2 could function in the future. Credits are generated from a variety of emission reduction and removal projects, and those credits are then used towards the NDCs of both Japan and the host countries.

In particular, Indonesia may be a good partner as its NDC⁸ welcomes bilateral, regional and international cooperation under Article 6 for NDC implementation. Indonesia also has a bilateral agreement with Norway to receive climate finance to reduce deforestation and it has considerable experience with

⁵ Carbon Market Year in Review. Refinitiv, 22 January 2020

⁶ Second call for proposals: 5 activities selected. [Klik Foundation](#), March 2020.

⁷ Call for proposals – Article 6 Cooperation. [Swedish Energy Agency](#). December 2019

⁸ First Nationally Determined Contribution Republic of Indonesia. Available [here](#)

REDD+. For instance, it is host to the first REDD+ project under the JCM and it is currently revising elements of its national REDD+ programme and carbon rights provisions, therefore making it a good time for Singapore to initiate discussions.

In Latin America, the Pacific Alliance countries of Chile, Colombia, Mexico and Peru could be obvious partners to open discussions with as they all have some form of carbon crediting experience. For example, Colombia and Mexico have already partnered with Switzerland as part of its ITMO procurement programme and Chile and Mexico are partner countries of Japan's JCM.

Singapore could also consider partnering with a country like Australia or the UK to import forestry credits such as Woodland Carbon Units (WCUs). This would be considered unconventional but may be attractive for several reasons:

- Both the UK and Singapore already have the institutional capacity to accurately account for the transfer of units.
- The UK is a long-standing supporter of carbon markets and demonstrated the world's first large scale application of GHG emissions trading when it introduced the UK ETS in 2002
- A huge measure of success for the upcoming Presidency of COP26 would be if the UK is able to guide the Article 6 discussions to an agreement and complete the Paris Agreement rulebook. Consequently, the UK is likely to be open to innovative ideas to help prototype the process

3. Public-Private NCS Fund

Building on the pilot project concept, Singapore could create a public-private fund to purchase international NCS credits in larger volumes. The Singapore Government could sign bilateral agreements with several countries under Article 6.2, thereby forming a network of Partners and creating multiple and more secure supply lines.

The fund could be capitalised with a mixture of public and private finance, with Singapore based companies invited to contribute. Donors would be allocated credits in proportion to their contribution to the fund. This may prove a popular option for the rapidly growing number of companies who have made large-scale voluntary commitments to net zero and who consider NCS to be an important component of their strategies. These companies are keen to deploy significant capital into NCS, and by creating this type of structure, Singapore can provide the platform for companies to take the lead. The fund could be structured to incentivise private sector participation whilst providing financial guarantees to exporter countries. For example, within the Fund, the Government could act as an offtaker of last resort, thereby helping to de-risk private investment both in the exporter countries and with private buyers.

In the design of this fund, Singapore can learn from other similar structures such as the World Bank's Forest Carbon Partnership Facility and Japan's experience with the JCM, who have signed bilateral agreements with 17 partner countries as part of the establishment of the mechanism.

4. Carbon Market Platform

To drive private sector activity in emissions trading, Singapore could create a carbon market platform which could serve several purposes:

- **A point of sale:** Credits being imported into Singapore from Options 1 and 2 listed above could be sold through this platform. This could create an easy route-to-market for private sector companies wanting to buy high quality credits which have been correspondingly adjusted.
- **Clearing House:** This could register and track units that are CORSIA compliant, or correspondingly adjusted under Article 6. Countries could export CORSIA compliant credits to Singapore and make a corresponding adjustment. Singapore could then hold their units until they're exported and sold to an airline, at which point another corresponding adjustment would take place. To mitigate the risk of any shortfalls in corresponding adjustments from exporting countries, Singapore could also operate a buffer system. Units from this buffer could be cancelled in the event of a shortfall in corresponding adjustments. This may help attract countries to trade CORSIA units through Singapore by de-risking the transaction process. The requirement for a facility such as this is likely to grow for CORSIA's first phase (2024 – 2026) when post 2020 credits will be needed for compliance which will require corresponding adjustments.
- **An international voluntary account:** This could act as a repository for credits that have been bought for voluntary purposes. When units are transferred under Article 6, they need to be debited from the host country's account and then credited in the buyer's country account. However, if they are being bought for voluntary purposes, there is no country account to 'credit' them into. Therefore, Singapore could create a facility to act as the 'credit' account of the double entry bookkeeping necessary to maintain environmental integrity in Article 6. This would provide a transparent platform to track the retirement of Article 6 units which have been bought for voluntary purposes but correspondingly adjusted at source. The units in this account would therefore represent climate ambition that is additional to any Government targets and would allow buyers to make strong claims of voluntary action.

A carbon market platform performing some of the functions described above would provide the necessary infrastructure to help position Singapore for carbon markets of the future. These could include CORSIA, voluntary markets or a market-based mechanism that the IMO will consider to help deliver its goal to cut shipping emissions by at least 50% by 2050.

Being one of the major shipping hubs in the world, Singapore is uniquely placed to bring its trading capabilities to bear on the challenge of helping the maritime sector decarbonise through market-based mechanisms. Shipping is a major source of global emissions, and to-date has seen relatively little progress in decarbonising, so it is likely to be the next global sector where activity is ramped up.

REGIONAL BUSINESS INTEREST

There is significant interest business interest in Singapore to develop private sector opportunities to invest in NCS. In the last 12 months, many companies have voluntarily made large scale commitments to reduce emissions or reach net zero, and NCS is often an important component of their strategies. This includes Temasek, BP, Shell and Singapore Airlines amongst others.

Pavilion Energy – Singapore's biggest buyer of liquefied natural gas (LNG) – recently issued the world's first tender for LNG with a carbon neutral goal. They are requiring sellers of LNG to quantify GHG emissions associated with each cargo produced, transported and imported into Singapore, and are encouraging bidders to offset those emissions by including carbon credits as part of the sale. Their CEO

has stated that he expects this approach to become the industry norm and is keen to see the development of a trading hub to serve this growing market demand.

IETA RECOMMENDATIONS

None of the options outlined above are mutually exclusive and all could be initiated at different points in time. IETA recommends that Singapore should consider an expansion of its carbon tax to include international NCS credits as soon as possible. It should then aim to transition the tax into an internationally linked ETS by the middle of the decade.

These dates should then act as a trigger to put in place the mechanisms needed to import high-quality units to Singapore via Article 6. This should include NCS pilot projects under Article 6.2 and work towards creating the necessary bilateral agreements could start now. For the purpose of this initiative, we would like to see agreements with other countries on our priority list, notably Mexico and Colombia. The UK could also be also be considered as a country to import credits from. Although this may be unconventional, they may be open to innovative ideas to help prototype the Article 6 concepts and inject some innovation into the discussion given their experience with carbon markets, their upcoming Presidency of COP26 and their desire to bring the Article 6 negotiations to an agreement.