

## BACKGROUND NOTE

# Carbon Finance

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## CARBON FINANCE

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Mobilizing sufficient finance is critical if the countries of Asia and the Pacific are to mitigate and adapt to the impacts of climate change effectively. According to the Intergovernmental Panel on Climate Change (IPCC), the investment required for the world to stay within a 1.5°C warming scenario ranges from \$1.6 trillion to \$3.8 trillion in low-carbon energy and infrastructure annually out to 2050, with an average of \$3 trillion–\$3.5 trillion annually (IPCC 2018). According to the calculations of the Climate Policy Initiative (CPI), annual global climate finance flows reached \$597 billion on average in the 2017/18 biennial, falling far short of the total required (CPI 2019). More than 40% of these flows were concentrated in the Asia and Pacific region, with a roughly equal split between public and private sources.

Carbon finance can play a key role in closing the existing funding gap, while transitioning the Asia and Pacific region onto a zero-carbon footing by 2050. A carbon price seeks to address the external costs of carbon emissions caused through their effect on global warming. Simply put, a carbon price increases the cost of carbon dioxide (CO<sub>2</sub>) emissions over time and shifts the cost of the damage caused back onto the heaviest polluters. If set at an adequately high level, carbon prices will make carbon-intensive energy sources, such as coal, unprofitable. As shown in the 2019 Fiscal Monitor of the International Monetary Fund (IMF), meaningful carbon taxes—the IMF suggests \$75 per ton of CO<sub>2</sub>—are a powerful tool to reduce carbon emissions and generate additional environmental benefits, including a lower mortality from air pollution (IMF 2019).

There are two main types of carbon pricing: carbon taxes and emissions trading systems (ETS). Carbon taxes are directly imposed by governments and set a price on carbon either by taxing the carbon content of fossil fuels or by specifying a tax rate for the CO<sub>2</sub> emitted in their combustion. Emissions trading creates a market in which participants trade allowances (expressed in metric tons of CO<sub>2</sub> equivalent) under an overall emissions cap which is reduced over time. The supply and demand for such allowances then determines a market price for CO<sub>2</sub>. Either instrument mobilizes the private sector by creating incentives to reduce CO<sub>2</sub> emissions and switch to climate-friendly

energy sources. Both instruments can also generate public revenue for countries to reinvest in climate mitigation and adaptation measures. Carbon tax revenues could be redistributed to support low-income households or communities that are affected particularly hard by the low carbon transition or the physical effects of climate change. As pointed out by Derviș and Strauss (2020), the current relatively low oil prices provide a good opportunity to levy or increase carbon taxes at a reduced political cost.

### **Carbon Finance Around the World**

A number of jurisdictions around the world have been using carbon pricing instruments for several years, including 25 countries covered by a carbon tax and 39 covered by an ETS (World Bank 2020). The largest and most prominent ETS is the European Union's Emissions Trading System (EU ETS), which was launched in 2005, a month before the entry into force of the Kyoto Protocol. However, carbon prices, whether through taxation or emissions trading, have thus far remained too low to induce a more rapid reduction in CO<sub>2</sub> emissions in line with the goals of the Paris Agreement on Climate Change.

After years of depressed prices because of over-allocation and excessive surplus permits, emission allowances under the EU ETS recovered to above €30 in mid-2020 (a 12-year high) but have since dropped again because of the continued negative economic impact of the coronavirus disease (COVID-19) pandemic. A 2017 report by the High-Level Commission on Carbon Prices (2017) concluded that achievement of the 2°C target set out in the Paris Agreement would require a global carbon price of \$50–\$100 per tCO<sub>2</sub> by 2030. Consequently, international financial institutions such as the IMF have called for greater stringency in carbon pricing and a carbon price floor among the most heavily emitting countries (IMF 2019).

Article 6 of the Paris Agreement spells out a mechanism for the creation of an international carbon market, enabling countries that are struggling to meet their nationally determined contributions to purchase emissions reductions elsewhere. However, while international carbon markets could provide a cost-effective way to reduce emissions and increase ambition, many issues around the operationalization of Article 6 remain unresolved, with critics pointing to a potential repeat of double counting and problems of additionality which undercut the Clean Development Mechanism

(Evans and Gabbatiss 2019). The Clean Development Mechanism allows emission-reduction projects in developing countries to earn certified emission-reduction credits.

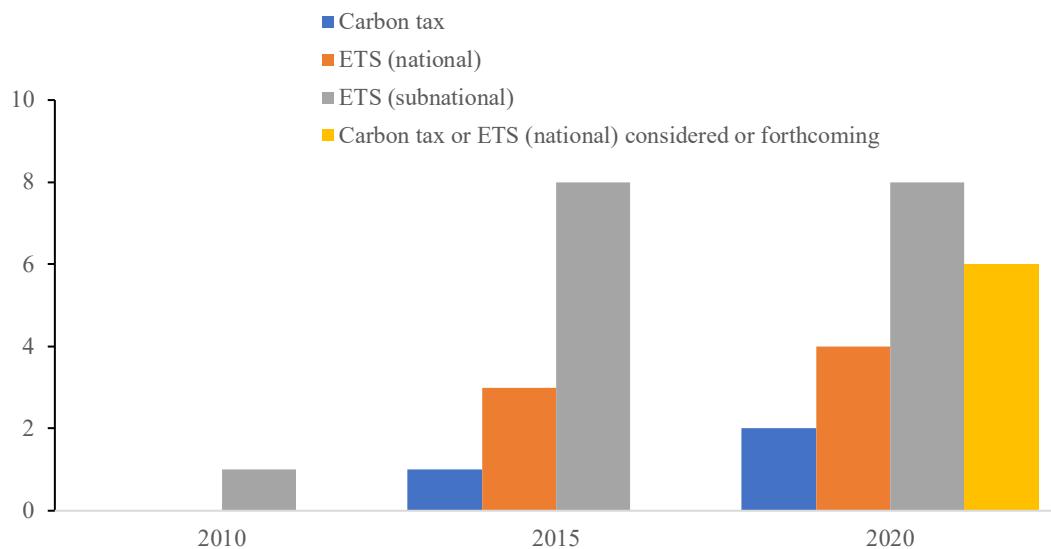
### **State of Play in the Asia and Pacific Region**

The use of carbon finance instruments in the Asia and Pacific region has been patchy. Apart from Japan and Singapore, no country in the region currently has a carbon tax in place. However, the Republic of Korea (ROK), Australia, New Zealand, and Kazakhstan operate national ETSs, and there are subnational systems in place in Japan (Tokyo) and the People's Republic of China (PRC), which has been trialling emissions trading in seven pilot carbon markets. While the PRC has already scheduled the launch of a nationwide ETS, Japan, Viet Nam, and Indonesia are still in the planning stages of their own national ETSs. In addition, a number of companies across the region have voluntarily embedded internal carbon prices into their business strategies to better factor in the impacts of their decisions on climate change.

The ROK's Emissions Trading Scheme (KETS) was launched in 2015 as the second largest system in the world after the EU ETS. Beset by early problems such as low market liquidity because of uncertainty-induced excessive banking of allowances, the KETS underwent reforms, including progressively lower emissions caps and the gradual reduction of free allowance allocation in favor of more auctioning (ADB 2018). With allowances trading at an average 2019 price of about \$25 (ICAP 2020a), further changes are needed if the KETS is to make a more significant contribution to reducing the ROK's CO<sub>2</sub> emissions. Allowances in the PRC's pilot markets trade even lower, with an average 2019 price in Beijing of roughly \$11 (ICAP 2020b).

While carbon prices in the Asia and Pacific region are not currently high enough to incentivize a speedy low-carbon transition in line with the Paris Agreement, carbon pricing instruments remain important tools in the toolbox of regional policymakers. As more and more countries pursue carbon tax and trading policies, the issue of effectively linking and harmonizing existing systems becomes more important. Internationally, the European Union's plans for a carbon border tax could severely impact companies across the Asia and Pacific region, further strengthening the case for meaningful carbon pricing policies (Aylor et al. 2020).

**Figure: Growth of Carbon Pricing Instruments in the Asia and Pacific Region,  
2010–2020**



ETS = emissions trading systems.

Note: Carbon taxes have been implemented by Japan and Singapore. ETS have been implemented by Australia; Japan (Tokyo); Kazakhstan; New Zealand; the People's Republic of China pilot cities/provinces (Beijing, Chongqing, Guangdong, Hubei, Shanghai, Shenzhen, and Tianjin); and the Republic of Korea. Carbon taxes or ETSs are under consideration or scheduled for implementation in Indonesia; Japan; the People's Republic of China (nationwide); Taipei, China; Thailand; and Viet Nam.

Source: Compiled by authors.

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