EMISSIONS TRADING SYSTEM

CHINA’S MOVE TO A LOW-CARBON ECONOMY

This article addresses one of the most far-reaching global anti-pollution measures seen: China’s nationwide carbon emissions trading system, to be launched in 2017, that will be the largest in the world. China’s ETS will expand the scope of worldwide GHG emissions covered by such systems from 9 percent to 16 percent.

China and Carbon Trading: An In-Depth Look at the 2017 Launch of the World’s Largest Carbon Trading Program

Ma Jun, currently the director of one of China’s most well-known environmental non-governmental organizations, observed in a 2012 BBC interview that: “China leads the world in energy consumption, carbon emissions and the release of major air and water pollutants, and the environmental impact is felt both regionally and globally.”

By a large margin, China is the world’s largest emitter of greenhouse gases (GHGs), with emissions rising from less than 1.5 billion metric tons in 1980 to more than 9 billion in 2015. These GHG emission are accompanied by a host of other compounds and particulates, which have cloaked many Chinese cities in smog. The human toll of air pollution could be costing China as much as 13 percent of its gross domestic product, according to the New Climate Economy. Perhaps as a consequence, China also now is home to some of the most ambitious anti-pollution measures seen around the globe.

China has increasingly sought to implement an effective transition toward a green and low-carbon economy. In addition to domestic environmental concerns, there are geopolitical drivers for this transition: China will hold the Group of 20 presidency in 2016, and in the follow-on to the 21st Conference of the Parties in Paris in December 2015 (COP-21), nations across the world are aiming to significantly mitigate their impact on the climate. Article 6 of the Paris Agreement, for example, specifically discusses the voluntary implementation of carbon-trading initiatives as a strategy to combat climate change. For China, establishing a carbon-trading market is just one of many green strategies in its policy toolbox to meet the country’s ambitious climate change targets.

China’s emissions trading system (ETS) has been in the works for some time. In 2010, five years before the COP-21 and the G-20 presidency, China announced the creation of seven regional pilot carbon-trading programs. Interim regulations governing voluntary emissions trading were issued in 2012, and Shenzhen became the first jurisdiction to launch its pilot program in 2013. Shanghai, Beijing, Guangdong and Tianjin followed later that year and Hubei and Chongqing in 2014. Then, in September 2015, Chinese President Xi Jinping...
announced in a joint statement with U.S. President Barack Obama that China would launch a national carbon-trading market in 2017 (an exact date is still to be confirmed) covering multiple sectors and industries and modeled on existing trading market systems functioning successfully in the European Union and North America.

This development, and accordingly this article, should be of interest to businesspeople, investors and environmental lawyers seeking more details on China’s carbon markets and expanding green economy.

II. What Are Cap-and-Trade Programs?

The application of cap-and-trade programs for emissions can be traced back to the 1990 amendments to Title IV of the U.S. Clean Air Act, which created the acid rain program. The concept was codified in the 1997 Kyoto Protocol at the urging of the U.S. delegation, and ultimately resulted in the EU launching its own program in 2005, called the emission trading system (EU ETS). With a cap of approximately 2 billion metric tons of carbon dioxide equivalent (MTCO2e), the EU ETS remains today the largest cap-and-trade program globally. Other cap-and-trade programs currently in operation include the Alberta program (2007), the Regional Greenhouse Gas Initiative in the Northeastern U.S. (2009) and the California and Quebec program (2013)—soon to include Ontario.

In a cap-and-trade program, a “cap” sets a limit on the emissions of GHGs of certain industry sectors (typically the power sector, but also the manufacturing, cement, refining and transportation sectors in economy-wide programs). The cap is then reduced over time, to lower the overall GHG emissions and achieve climate goals. Companies operating in sectors covered by the cap must report their GHG emissions and obtain and retire allowances to cover such reported emissions. Typically, companies may obtain allowances through free allocations or though purchases at auctions or on the secondary market, including exchanges. In general, one allowance is defined as the authorization to emit one MTCO2e.

A cap-and-trade program is an economic instrument that allows the market to internalize the cost of emitting carbon, thereby resulting in a more efficient allocation of resources. And experience has shown that cap-and-trade programs are economically cost-effective relative to traditional command-and-control approaches in achieving the same or greater environmental benefit, according to the Review of Environmental Economics and Policy. Carbon taxes are another economic instrument that could be used to internalize the costs of carbon emissions, but a tax does not guarantee that the emissions will not exceed a certain limit and the tax’s fixed rate could unnecessarily burden an economy during a recession.

III. History and Future of China’s ETS.

In its 2011–2015 Five-Year Plan, China announced the creation of seven regional, pilot ETS programs in five cities (Beijing, Chongqing, Shanghai, Shenzhen and Tianjin) and two provinces (Guangdong and Hubei). The first such program opened in the middle of 2013 and the last in June 2014. Not to be left out, the cities of Hangzhou, Qingdao, Shenyang and Jining have voluntarily proposed their own emissions trading programs, though only Hangzhou’s is currently operating. These pilot programs exclusively cover carbon dioxide emissions.

Following on from President Xi’s announcement of the China ETS (i.e., a national trading program) in January, the National Development and Reform Commission (NDRC), China’s central economic planning agency, issued several guidance documents relating to the launch. The documents, officially released only in Chinese, provide the basis for our current understanding of the China ETS implementation. As we will see, however, market participants will likely demand more detail in a number of specific areas as we move closer to the projected implementation date.

One thing is clear, though: This will be the largest GHG cap-and-trade program in the world by notional size, covering multiple industry sectors across a huge geographic area. The NDRC stated in Paris that 10,000 companies emitting around 4 billion tons of MTCO2e will be brought under the China ETS. This is approximately twice as many tons of GHGs as those regulated in the EU ETS, the Carbon Pulse reports. In combination, the provincial pilot programs themselves have carbon emission quotas that are surpassed only by the EU ETS. The China ETS also will likely become the most important hub in a growing network of carbon markets in the Asia-Pacific region.

IV. The Structure of the China ETS.

Unlike the pilot programs, the proposed draft regulations for the national China ETS will cover seven types of GHGs: carbon dioxide (CO2); methane (CH4); nitrous oxide (N2O); hydrofluorocarbons (HFCs); perfluorinated chemicals (PFCs); sulphur hexafluoride (SF6); and nitrogen trifluoride (NF3). This scope may be adjusted by the NDRC at any time, however. There will be two traded products: the Emissions Reduction Quota (ERQ) and the China Certified Emissions Reduction (CCER).

ERQs are allocated to the entities subject to the cap of the China ETS and can be traded by covered entities or other market participants. Each ERQ confers to its owner the right to some number of any GHG covered by the China ETS. The NDRC will determine the number of ERQs under the overall cap, as well as the allocation of ERQs to each provincial and directly administered city government based on historical GHG emissions data, economic growth, and the industry and energy structure of each jurisdiction. Each provincial-level government will then allocate its ERQs to the regulated entities within the government’s jurisdiction. Allocations will be made to covered firms on both a free and charged basis, with the charged basis to play an increasingly important role over time.

In the pilot programs, some provinces defined the program’s scope by reference solely to emissions (for instance, Beijing required entities with annual carbon dioxide emissions of more than 10,000 tons to comply), and some by additional reference to industry sector to set the emissions level (Shanghai, in contrast, set different threshold levels for the petrochemical and aviation industries). President Xi’s 2015 announcement stated that the China ETS initially will apply to power generation, iron and steel industries, chemical firms, building materials, cement and paper-making industries, and...
nonferrous metals manufacturing. The ETS is intended to cover nearly 4 billion MTCO₂e of GHG emissions, nearly 40 percent of the country’s total emissions, carbon market expert Hongliang Chai says.

CCERs represent one MTCO₂e of GHG emissions reduced or sequestered outside of the cap, including (potentially) outside China. CCERs are thus the China ETS equivalent of offsets (in North America) or Certified Emission Reductions (in the EU ETS and under the Clean Development Mechanism). Companies covered by the China ETS will be permitted to use CCERs to cover their emissions, although there will likely be a limit on the proportion of compliance obligations that can be satisfied with CCER. The presence of CCERs in the marketplace can reduce the risk of price spikes when demand is high and provide flexibility for companies in industries that face greater challenges in reducing emissions.

Both companies and individuals will be permitted to participate in carbon trading, and this open market will help establish the price of the compliance instruments.

Each regulated entity is required to prepare an emissions monitoring plan for the upcoming year, which is to be filed with the NDRC, and also prepare an emissions report for the previous year’s emissions, which a qualified third-party verifier must validate in the form of a verification report. Sanctions for failing to submit the required documentation by the deadlines have not yet been announced, but in the Beijing pilot program, fines were levied at a set value of approximately 5,000 British pounds ($7,200) plus a multiple of the carbon price current at the time of the offense.

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V. What Will Happen Between Now and 2017?

China has not yet announced the exact date on which the China ETS will go live in 2017. The EU-China ETS Project, under which the EU can provide technical know-how and training to China, however, is due to be completed by Jan. 19, 2017, and there are suggestions the China ETS will launch in the summer of 2017. In the meantime, further clarification on several important issues is necessary. Most important, what will be the size of the overall cap? With regard to the third-party verification process, who will be able to verify an entity’s emissions? How will the verifiers be chosen and by whom?

The NDRC has indicated that 83 entities have been accredited to verify GHG emissions data in the pilot program, but more than 80 percent of that number are small, regional companies that likely will not be able to handle the needs of a large company operating across the country.

Further, what sanctions will be implemented for failing to meet reporting requirements? What percentage of emissions can be offset through CCER? A high percentage could encourage entities to buy their way to meeting their allowances through sponsoring external projects rather than reducing their own energy usage; a low percentage limits the usefulness of offsets in preventing runaway prices. How will local governments consider early action when assigning ERQ allocations? If allocations are based on the prior year’s GHG emissions, for instance, forward-looking firms that have proactively reduced emissions on their own will be punished for their trouble while emitters with low GHG efficiency will enjoy plenty of breathing room. Crucially, the price at which ERQs earmarked for paid distribution will be sold has not been announced. In short, there remains a significant amount of granular detail that needs to be addressed in the China ETS as currently proposed. Whatever the details of the final regulations, enforcement will remain a critical challenge.

VI. What Has Been Learned From the Pilot Programs?

The China ETS system will be the first built “from the ground up” based on the experience of pilot programs. This model appears to have had some success, with regulators adapting their approach based on the experience of other programs.

For example, secondary trading of emissions allowances represented only 10 percent of the market in Guangdong in the program’s first year. Participation began to rise after regulators allowed institutional investors to bid for allowances in the primary market, following the example of Hubei province, the first pilot program to do so. Since then, all of the pilot programs have opened to institutional investors, and the city of Shenzhen even allows foreign investors to participate. Shenzhen’s pilot is unique in that it is subject to the ETS managed by Guangdong province (in which Shenzhen is located), and may perhaps provide a model for linkages between the China ETS and other ETS programs.

Approaches to enforcement have varied as well. Shanghai’s penalties for non-compliance are not particularly strict compared to the other pilots, but the Shanghai pilot nonetheless achieved 100 percent compliance from all regulated entities in 2014, perhaps in part due to a policy of noting non-compliance in the regulated entities’ credit records. (China has been denying credit to environmental violators since 2007 under a “green credit” program.) Beijing, which fines non-compliant entities at between three and five times the market price of each shortfall allowance, achieved 97.1 percent compliance in 2014, Australian National University reports. Wang Yang, director of the Beijing Environment Exchange (the Beijing pilot program) argues that “[the pilot program has] put pressure, to some extent, on companies to reduce their emissions [...] it’s helped Beijing to beat its targets for total carbon emissions.”

Critics have argued that more statistical data must be made available regarding the number of permits the provincial governments have been allotting, how much carbon businesses are actually emitting and how the pricing mechanism works. Trading volume is not particularly high in the pilot programs, and lack of transparency is likely one factor. Without such data, accurately assessing and then implementing a fair market value for the cost of carbon—vitally important to a properly functioning trading market—is difficult.

VII. Transitioning From Pilot Programs to a Single Nationalized ETS.

Transitioning from more limited, provincial programs to a national ETS will be perhaps the biggest challenge going forward, in part because the pilot pro-
grams were implemented with key variations based on the economy and size of each province.

For example, Beijing and Shenzhen have relatively small industrial emissions and a larger service economy compared to more industrial areas like Hebei or Chongqing. Rapid progress in curbing emissions for the former may be easier than for the latter. These regional differences were accommodated for in the pilot programs because emissions were not traded nationally. With the implementation of a national program, however, these geographic nuances must fall away. Accordingly, ascertaining a reduction in the cap level that does not prejudice more industrial areas but still acts as a significant encouragement to reduce emissions across the country will be a challenge.

Whether provincial governments will be left with any authority to define their own rules for quotas and allowances also remains unclear. Under the present pilot programs, for example, some provinces give preference to CCER projects such as household methane reduction, whereas other provinces exclude these projects. Beijing and Guangdong require that half or more of the CCER credits used in the system must be generated within the city/province itself. If provincial governments will no longer have any authority on this issue, then how will CCER falling in these categories be reallocated? In response to draft regulations the NDRC has promulgated, Guangdong province argued that provincial governments should be allowed to set up rules for monitoring, reporting and verifying emissions.

The NDRC, however, has apparently rejected this approach according to a revised draft of the regulations. Some commentators, such as Tsinghua University’s Duan Maosheng, have predicted that emitters will be able to apply to “bank” some of the credits they accumulated in the pilot program and transfer them to the China ETS, ChinaCarbon says in a March report. This has not yet been confirmed, however.

Of the seven pilots, commentators have concluded that the Hubei program is by far the most liquid. The Hubei Emissions Exchange accounts for more than 40 percent of the revenue accumulated. On April 27, the Hubei Emissions Exchange was the first exchange to launch forward contracts for carbon allowances, with other pilot programs to likely follow on thereafter. Forward contracts add liquidity to the market and provide hedging options. As a consequence of this exchange’s success, we may see in due course the China ETS drawing heavily on the Hubei pilot as the base model for the transition to a single national program.

VIII. Looking Forward.

Reducing GHG emissions is a global challenge, and the China ETS is a fascinating and hugely important national measure that could have ripple effects across the world. Indeed, the China ETS could become the country’s flagship environmental policy. By July 2015, China had already demonstrated savings of 38 million MTCO2e through its pilot programs, an amount surpassed only by the EU ETS to date, according to the China Environment Forum at the Woodrow Wilson Center.

The China ETS has the potential to drive scaling-up of climate action through carbon markets by incentivizing other countries and encouraging international cooperation (for example, the formation of Asian carbon market “clubs”). The rest of the world should take notice not just because of China’s ETS program; the China ETS will work hand-in-hand with a number of other environmental initiatives in China to increase the country’s impact on the GHG reduction and green economy stage. China has launched pilot programs seeking to re-vamp the nation’s environmental laws by increasing environmental accountability for industry and government authorities. China’s investment in clean energy outpaces that of the U.S., the U.K. and France combined, according to Climate Desk. China continues to be the leading manufacturer of wind and solar power technology.

In particular, in announcing the most recent Five-Year Plan, which runs between 2016 and 2020, China reiterated its commitment to the China ETS and placed environmental issues at the forefront of the country’s development for the next five years. Chinese Premier Li Keqiang called for low-carbon growth and an energy revolution, and the China Business Law Journal has commented that “with the new plan, China’s energy industry is facing a bout of intensive adjustment and change.”

In the coming months, governments, industry and commentators will be watching with keen interest how the China ETS implementation develops. Investors want to see transparency. Multinationals based in China want to understand how the China ETS will impact their assets and business operations, particularly those that have already made efforts to reduce their emissions.

Governments will look to see how effectively such a large country can implement an emissions trading program. Developing countries will be keenly developing CCER projects to access the new monies available to invest. And China, we can expect, will be looking toward Europe and borrowing further from the successes, and learning from the failures, of the EU ETS. Like the country itself, the China ETS is too big and important for the global business community to ignore.

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