

China Emissions Trading Schemes (Beijing, Guangdong, Hubei, Shanghai, Shenzhen, and Tianjin) (Extract from World Bank Report 2014)

The National Development and Reform Commission (NDRC) announced its plan to develop seven official ETS pilot programs (Beijing, Shanghai, Tianjin, Chongqing, Guangdong, Hubei and Shenzhen) in 2011. This plan began to deliver from 2013. By April 2014, six of the seven pilot schemes started trading (see Table 7), with the remaining one – Chongqing – due to start in 2014. Carbon markets are now officially open for business in China. The total 2013 allocations of these six pilots combined amounts to 1,115 MtCO₂e, making China the second largest carbon market in the world, after the EU ETS. Guangdong ETS, the largest of the Chinese ETS pilots, itself covers 388 MtCO₂e in 2013, similar to the size of France's emissions in 2012.

Each of the pilots has unique characteristics; the way in which the carbon markets play out will help policy makers learn lessons that can be applied in the national context. The next section discusses some of the notable features of the pilots schemes.

Shenzhen was the first of the Chinese ETS pilots to start operating and therefore has the longest price history (see figure 2). Shenzhen's industrial base includes light manufacturing e.g. semiconductor and car part production. Therefore to create a market with enough emissions to enable liquidity, Shenzhen has to cover 635 enterprises. As the only pilot with Special Economic Zone (SEZ) status, Shenzhen had the legislative ability to pass a bill to support ETS implementation.



Shanghai is China's financial centre and, as such, the region has announced plans to explore innovative financial tools that boost liquidity in the scheme. Shanghai is a city with some heavy industry and light industry, and so the scheme covers a broad array of sectors, including aviation and ports. Shanghai hosts a large number of multinational companies, many of which have already experienced ETS compliance in other parts of the world, which may help engagement with industrial participants.

Beijing is the capital, with a high profile. As such many of the lessons learned in this pilot will feed directly into the national scheme. Prior to the 2008 Olympic Games heavy industries including power, steel and cement were forced to move out of Beijing, increasing the energy use and the emissions of the neighbouring regions (Tianjin and Hebei). Therefore, Beijing's ETS covers a reduced power sector, and not all those that service the city.

Guangdong is one of the industrial powerhouses in southern China and has the EYS with the largest volume of emissions covered. Guangdong is also the first pilot to incorporate auctioning into the design of their scheme. Current rules mandate participants to purchase a minimum of 3% of their total allowance in the primary markets at a reserve price of CNY60 (US\$10).

Tianjin is a port city with a strong industrial base. Tianjin is part of the Beijing-Tianjin-Hebei area experiencing severe air pollution. To cut emissions, Tianjin's ETS covers a number of key industries (power and heat, iron and steel, chemical, petrochemicals and oil and gas exploration), raising serious concerns over competitiveness.

Hubei is located at the heart of central China, a transport hub with a faster than average economic growth rate. Iron and steel production accounts for a significant proportion of emissions. Hubei's ETS covers 12 sectors, including

pharmaceutical and food and beverage, which other pilots do not cover. Hubei includes innovations in auctioning and allocation.

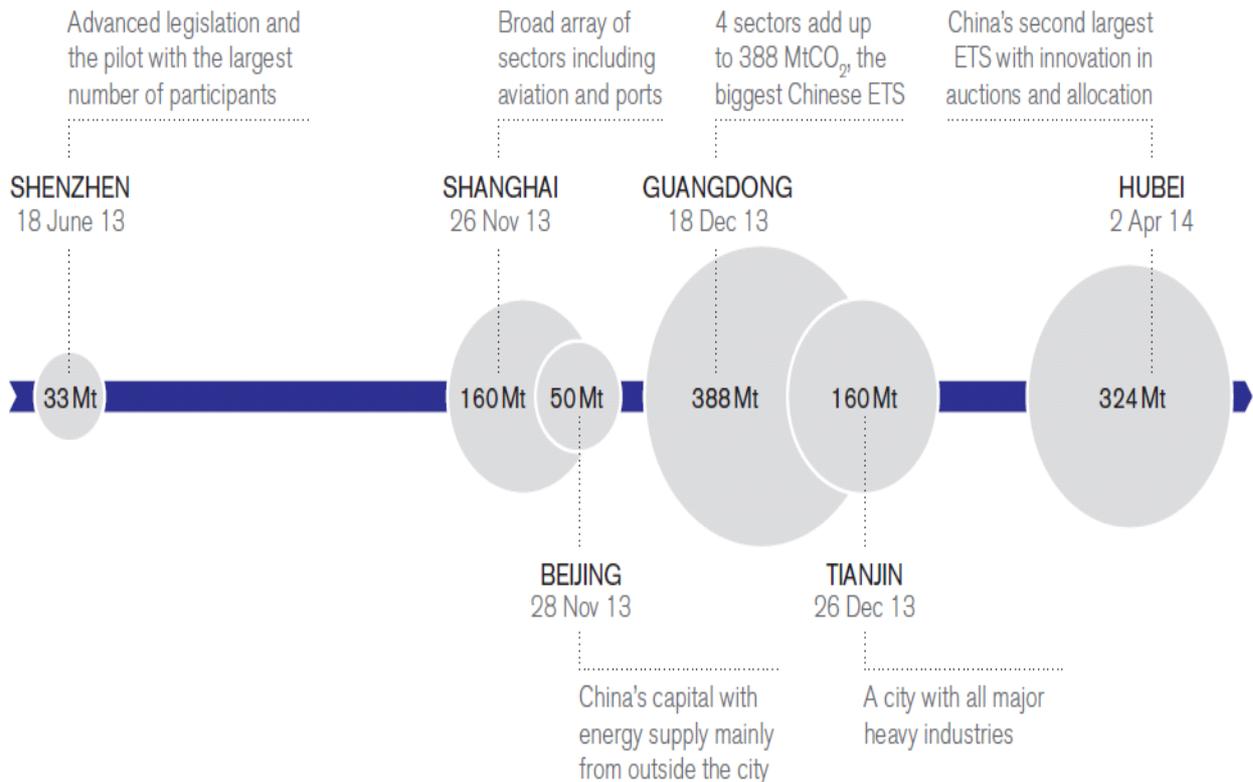


Figure 1. Characteristics of the Chinese ETS pilots in operation.

Notable progress on scheme design has been made since the start of 2013. All pilots have published their ETS Implementation Plans, the key document defining the specific design aspects. Some pilots have released Carbon Emission Allowance Allocation Plans and ETS Pilot Management Methods. However many of the details remain to be further clarified or are not publicly available, and it is expected that this will take place during the coming year.

Scope Most pilots have an absolute cap, Shenzhen has an intensity-based cap. Overall, therefore, the pilots have a growing cap, in line with China's 40–45% carbon intensity reduction target by 2020.

Allocation approaches Most pilots use historical intensity or emissions-based free allocation. Guangdong is the first pilot to use auctioning. Dynamic allocation is included in the ETS Implementation Plans for Shenzhen, Tianjin, and Shanghai Allocation for the power sector is similar across pilots, based on benchmarks of different generation technologies and installation capacities.

Use of offsets By April 2014, CCER methodologies based on CDM methodologies published. About projects have been approved by the NDRC.

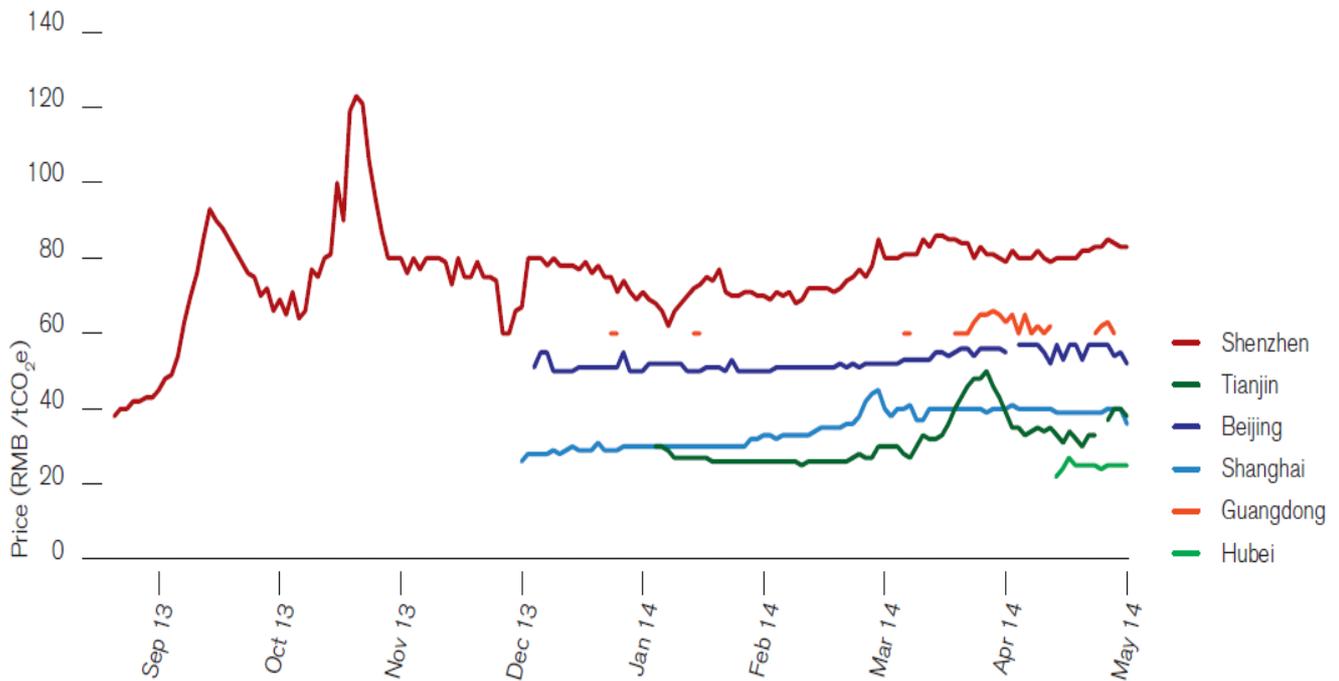
Price stabilization mechanism Shenzhen, Guangdong and Hubei have set aside reserve allowances to manage price fluctuations.

Performance and effectiveness Carbon prices in the pilots to date range from approximately CNY120/tCO₂e (US\$20) in Shenzhen, to CNY22/tCO₂e (US\$3.6) in Hubei (see Figure 2)

MRV and registry GHG accounting methodologies released for 10 sectors.¹⁷⁸ Guidance also provided for monitoring of emissions in smaller installations.

Linking to other schemes Potential to link Hubei with Guangdong but no official progress or details.

Looking ahead The first pilot phase is planned to end in June 2016 and should provide lessons for the national ETS. No clarity yet on how the pilots and national ETS will relate to each other.



Source: combined information Crystal carbon, website of Chinese emissions exchanges, as of April 18, 2014.

Figure 2. Prices to date in the Chinese ETS pilots

Emerging Emissions Trading Schemes in China (National and Chongqing)

The national China ETS is expected to start during the 13th Five Year Plan (2016–2020). Some preparation has already begun, with more details expected by the end of 2014. In the meantime, the seventh ETS pilot program in Chongqing is expected to start in 2014.



Reference: World Bank (2014) State and Trends of Carbon Pricing. World Bank Group.

<http://www->

wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/27

[/000456286_20140527095323/Rendered/PDF/882840AR0Carbo040Box385](http://wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/27/000456286_20140527095323/Rendered/PDF/882840AR0Carbo040Box385)

[232B00OUO090.pdf](http://wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/27/000456286_20140527095323/Rendered/PDF/882840AR0Carbo040Box385232B00OUO090.pdf)