

Beijing's Pilot Emission Trading System

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Climate Change is one of the most alarming issues the world is facing in this era. To combat this crisis, a market mechanism for carbon emission trading is widely-used globally. According to the latest *Emissions Trading Worldwide Status Report* released by the International Carbon Action Partnership, 21 Emission Trading Systems of different scales have been implemented in 29 jurisdictions around the world by April 2020, together covering 9% of global GHG emissions and one-sixth of the global population.¹

As one of the seven pilots in China, Beijing launched its Emission Trading System (ETS) in November 2013, with the support of its policy module “1+1+N”.² Moving into its seventh year of operation, the Beijing ETS now has over 900 liable entities, covering about 45% of the jurisdiction’s total emissions.³ 29.07 million tons of emissions allowances have been traded on the Beijing ETS, accounting for a total value of CNY 1.049 billion (USD146,860 million).⁴

According to the explanation provided by the Center for Climate and Energy Solutions in 2011, emissions trading (also known as cap and trade) is a market-based approach to reducing the emissions of pollutants by providing economic incentives. A central authority allocates permits that allow a specific amount of pollutant discharge over a set time period to entities; whereas polluters are obliged to manage the amount of pollution within the given emission quotas. Entities that would like to increase their emissions must purchase additional quotas from those willing to sell.

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1. ICAP, 2020b
 2. The framework, regulations and market data of the Beijing ETS presented in this case study were mainly referenced from the Annual Reports of Beijing Carbon Market 2014-2018 jointly published by China Beijing Environment Exchange (CBEEEX) and the Beijing Green Finance Association (BETA).
 3. ICAP, 2020a
 4. CBEEEX & BETA, 2019

Key Take-aways

China's Former Representative to UNFCCC negotiations Xie Zhenhua announced in 2018 that, thanks to the carbon trading scheme, China has reached its 2020 carbon emission target three years ahead of schedule.⁵ This case study summarizes a few key points regarding the experience of the Beijing ETS:

- Policy framework design is the foundation of a stable carbon market. Through its “1+1+N” policy module, over 30 supporting documents have been released by Beijing to supplement its emission trading system.
- A broad and encompassing definition of stakeholders - such as the inclusion of eligible individuals and credible entities - could help to grow liquidity and improve market efficiency.
- An MRV framework that includes third-party verifications and spotchecks by government-assigned experts could help to ensure the accuracy and authenticity of emission data.
- Well-designed penalties and enforcement approaches for noncompliance could enable the market to function smoothly and effectively.
- Prioritizing sectors with the highest emissions intensity could help to maximize the trading system's impacts - the Beijing ETS covers about 45% of the city's total emissions.
- Emissions inventories with the best available activity and statistical data can provide a robust foundation for cap-setting, which should be considered along with the jurisdiction's business-as-usual emission scenario, as well as its emission reduction targets.
- Methods of allowance allocation vary between sectors, and by providing flexibility on time of receiving allocations to regulated entities, it helps to avoid excessive surplus allowances in the market.

- Fixed sector benchmarking can incentivize firms to seek for energy-saving solutions.
- By promoting better performances on emissions intensity and energy efficiency, the Beijing ETS has enabled a range of co-benefits of climate change mitigation and environmental protection.

Emissions Trading Market in China

As one of the largest emitters in the world, China is on its way towards reduced carbon emissions without hindering economic development. In its Intended Nationally Determined Contributions Report - *Enhanced Actions on Climate Change* - submitted to the United Framework Convention on Climate Change (UNFCCC) in 2015, China pledged to put a peak on its growing carbon dioxide (CO₂) emissions by 2030 or earlier, and lower CO₂ emissions per unit of GDP by 60%- 65% from 2005 levels also by 2030.⁶

Through the “*Decision of the State Council on Accelerating the Cultivation and Development of Strategic Emerging Industry*” released in October 2010, the Government of China officially announced its intention to develop a carbon market scheme, and later reiterated the determination of accelerating low carbon application and research, as well as establishing a domestic carbon emission trading market in the country's 12th Five-Year Plan for Economic and Social Development (2011-2015).

With the objective to gradually establish a national carbon trading market and achieving the country's goal of controlling GHG emissions, in late 2011, China's National Development and Reform Commission approved 2 provinces (Guangdong and Hubei) and 5 cities (Beijing, Chongqing, Shanghai, Shenzhen, and Tianjin) as ETS pilots, with Shenzhen being the first pilot to launch in June 2013. The 7 local governments together account for around 25% of China's annual GDP and represent the wide variety of economic development conditions within the country.⁷

5. UNFCCC, 2018

6. The full report is available at <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/China%20First/China%27s%20First%20NDC%20Submission.pdf>

7. Luo, 2017

The main purposes of establishing ETSs in China are to:⁸

- 1) contribute to effective control and reduction of carbon emissions;
- 2) achieve green and low carbon development;
- 3) mitigate haze pollution and emission of other pollutants for better air quality; and to
- 4) develop new financial mechanisms for the market.

As one of the ETS pilots and the capital city of China, the development of the Beijing ETS could be a significant component in the country's multi-level carbon markets.⁹

The first official carbon trading scheme in China was launched 19 December 2017, with a sole focus on the country's power generation industry. At the time, the National Development and Reform Commission of China has made it clear that the mechanism was only the beginning of establishing carbon trading mechanisms in the country. The reason to prioritize the power generation sector was that it is the largest GHG contributor in China. In fact, with more than 1,700 power companies and 3 billion tons of GHG emissions in total regulated by the scheme, China now has the largest carbon market in the world.¹⁵

Legal framework and Policies behind the Beijing ETS

Legislations and Regulations

The Beijing ETS is supported by a policy mechanism called “1+1+N”. The first “1” refers to the policy document “Decision on Implementing CO₂ ETS in Beijing” released by the Standing Committee of Beijing Municipal People's Congress on 27 December 2013. The document has the highest legal effect among all legislations related to the operation of the Beijing ETS, and was designed to (a) *formulate an institutional structure and penalties*; (b) *define the roles of multi-stakeholders by their responsibilities and the rights they are entitled to*; and to (c) *authorize*

the municipal government to take management measures during the pilot operation period.

The second “1” refers to the policy document “*Interim Measures for the Management of Emissions Trading in Beijing*” published by the Government of Beijing Municipality on 28 May 2014, aiming to (a) *verify the principal instructions of the city's entire carbon trading process*; (b) *clarify the rights and duties of each governmental department*; and to (c) *provide operational supervision to the market.*

Finally, the “N” refers to all supporting laws and regulations set up to elaborate the measures mentioned above. By 2019, over 30 policy and technical support documents, as well as guidelines on **trading, allowance allocation, verification, penalty, trans-region cooperation, and emissions intensity** have been released to complement the policy framework, establishment and operation of the Beijing ETS.

Initiatives and Platform Establishment

Beijing launched its ETS in November 2013, with its Development and Reform Commission authorized to lead the coordination and supervision of its operation, along with the support of the bureaus of Statistics, Finance, Landscape and Forestry, and the Commission of Economy and Information Technology. However, following the governance structural reform in China, from 2019 onwards, the leading supervision role of the Beijing ETS has been shifted to the Beijing Municipal Ecology and Environment Bureau (BEE).

Appointed as the official trading platform of the Beijing pilot ETS, China Beijing Environmental Exchange (CBEE) was given the mandate to provide a just, fair and transparent platform where participants' rights and trading discipline are guaranteed. The main responsibility of CBEE is to ensure the stability of the allowance, the capital and high liquidity of the market. It is also required to issue real-time transaction vouchers to prove trades between entities, keep transaction records and regularly publicize transaction information with reasonable service charging.

8. CBEE & BETA, 2018; “Purposes of Carbon Trading”, 2019

9. CBEE & BETA, 2019 10. ICAP, 2020a; GIZ, 2018

Mechanism of the Beijing ETS

Coverage and Allowance Allocation

The list of regulated entities and the allocation of allowances have gone through stages of modification as the Beijing ETS develops. Before 2019, the Beijing Development and Reform Commission had been taking the lead in distributing the allowances following the “moderately tight” principle by providing regulated entities with flexibility regarding the timing of receiving allocations, which helps avoiding excessive surplus allowances in the market. In addition, the city can set aside up to 5% of its total allowances for regular and irregular auctions to ensure market stability.

Allocations in the Beijing ETS are mostly free, based on historical emissions - referred to as **grandparenting** or **grandfathering** - or on **fixed sector benchmarks**.¹⁰ Allowances for existing firms in the service and other industries are grandparented based on individual entity’s historical emissions or emission intensity in the baseline years.

New entrants and the energy sector, on the other hand, are allocated with allowances calculated using the benchmarking approach. Rather than directly referencing to individual entity’s historical emissions, the level of assistance each entity can receive is determined by the benchmark emissions intensity of technologies with

the highest energy efficiency performance in the sector. This creates an incentive for covered entities to seek for energy-efficiency upgrades and/or renovations of technologies and supplies in the long term.

Reflecting the change of policies, the development of the Beijing ETS can be divided into two phases summarized as follows:

Phase I. 2013 - 2015

During the initial period of the Beijing ETS, entities identified to be regulated in Beijing were mainly stationary sources, including heating sector, electricity generators, cement production, petroleum chemicals production, as well as other manufacturing and service industries. Any company or industry with over 10,000 tCO₂/year emitted directly or indirectly are enlisted as a regulated entity under the Beijing ETS. Allowances are distributed based on emissions or emissions intensity in the baseline years. Starting from 2014, individuals meeting the stated requirements are also eligible to register as market trading entities in the ETS and participate in trading.

Phase II. 2016 - present

Since 2016, the Beijing ETS expanded to cover all stationary and mobile sources in the jurisdiction. The public transport supply and industry was therefore also included in this phase. Industrial and non-industrial companies and entities



Figure 1. Trading Entities in the Beijing ETS

10. ICAP, 2020a; GIZ, 2018

in the covered sectors with 5,000 tCO₂/year emitted directly or indirectly are enlisted as a regulated entity. As a result of this expansion, the number of liable entities went up to 947 in the same year.

In addition, all legal entities with energy consumption over 2,000 tons of standard coal equivalent (tce) are obliged to report their annual emissions, despite not being entitled to free allocation. As of 2019, 634 companies have mandatory reporting obligation but no surrender obligations.¹¹

Moreover, from 2017 onwards, all institutions and entities in Beijing can register in the ETS as non-regulated entities and participate in trading as long as they conform to the stated requirements.

Following the expansion, the participants of the Beijing ETS now includes regulated entities, mandatory reporting entities, as well as individuals and other institutions, entities and actors. Figure 1 presents a summary of the standards and requirements of different trading entities in the Beijing ETS.

MRV and Enforcement Approach

To supervise market operation of the carbon market, Beijing established an MRV - Monitoring, Reporting and Verification - system for its ETS. The mechanism includes issuing guidelines on emission accounting and reporting, market supervision, verification process and administrative measures for third-party verifiers. In 2017, 35 third-party verification institutions with 467 inspectors reported engagements in the process, covering all six targeted industries.

In addition, spot checks on the submitted verification reports are also conducted by independent experts or other verifiers appointed by the government, as a means to ensure that the quality of the reports and that the third-party verifiers are retaining impartiality while conducting the verification. Figure 2 illustrates the general process of the Beijing ETS MRV cycle.

Together with the MRV system, the enforcement of penalties for non-compliance is also supporting the effective operation of the carbon market in Beijing. Misreporting or failing to provide emissions and relevant data, or verification reports are subject to penalties of up to CNY 50,000 (USD 70,000).¹²

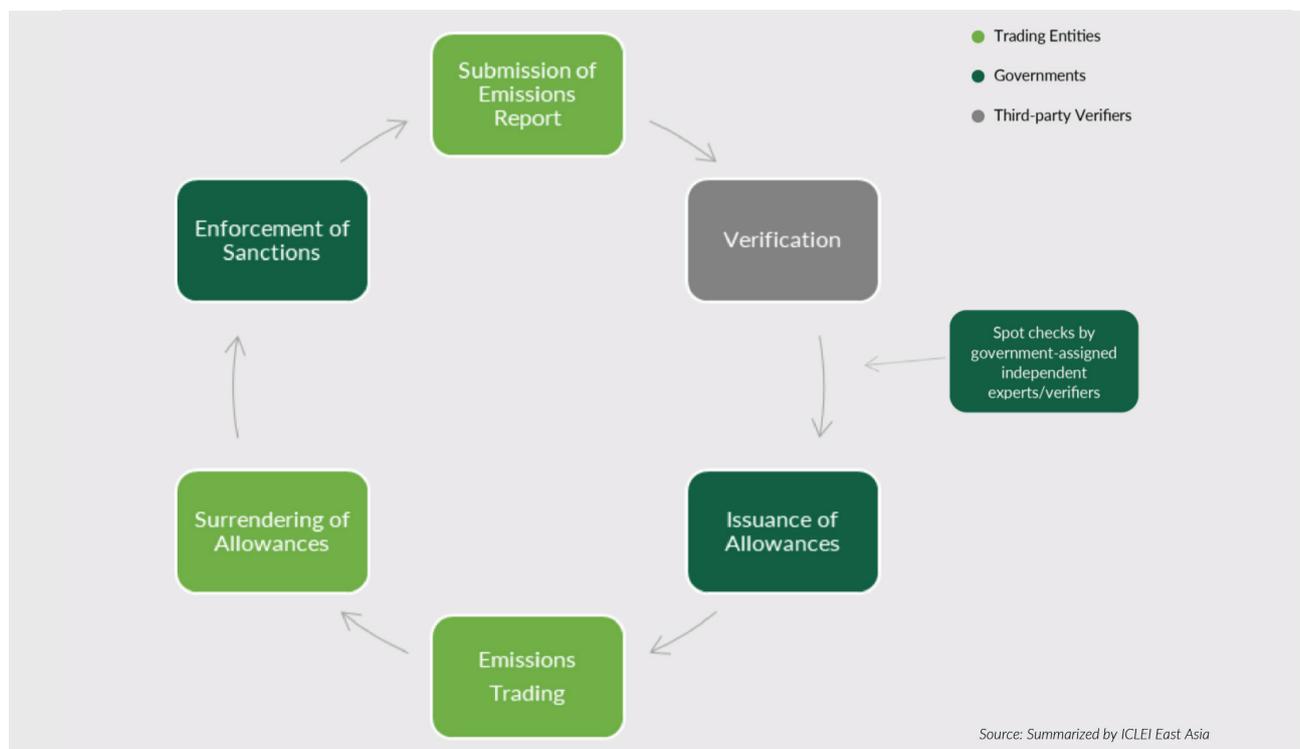


Figure 2. The Beijing ETS MRV Cycle

11. BMEEB, 2020

12. This case study adopts the currency exchange rate on 10 June 2020 with CNY 1 = USD 0.14, provided by Exchange Rates UK. Retrieved from https://www.exchangerates.org.uk/USD-CNY-10_06_2020-exchange-rate-history.html

Entities emitting in excess of their allowances will face a fine per unit of 3-5 times the market average allowance price in the previous six months. In addition, the names of non-compliant entities and third-party verifiers can be published and kept as a record in the National Enterprise Credit Information Publicity System, which could have impacts on their future capital financing.

Trading Schemes

All regulated entities are required to register in the trading platform managed by CBEEEX, and can engage in emissions trading with the carbon offset credits allocated to their accounts.

Currently, the Beijing ETS allows for the use of two emissions trading schemes, namely the **Beijing Emissions Allowance (BEA)** and **project-based offsets** (Figure 3). BEA refers to the emission allowances allocated to each regulated entity by the jurisdiction. Allowances are issued in units of tCO₂.

Project-based carbon offset units, on the other hand, can be generated via Chinese Certified Emission Reductions (CCER), energy conservation projects, forestry carbon sink projects, and motor vehicles voluntary emission-reduction programs validated by the National Development and Reform Commission. However, the use of offset credits generated from CCER in the Beijing ETS is limited to 5% of the annual allocation for each regulated entity, and the use of CCER credits generated from projects outside

the jurisdiction is limited to 2.5%. Project-based carbon offsets are issued in units of tCO₂e.

Trading of the allowances can be proceeded through online trading or over-the-counter transactions. **Online emissions trading** orders can be made in three types:¹³

- 1) **All-or-none (AON) orders:** exchanges between a single buyer and a single seller that must be executed in its entirety, or not executed at all.
- 2) **Sweep-to-fill orders:** market orders that are split into numerous parts and filled by taking all liquidity at the best possible price.
- 3) **Limit orders:** exchanges that can only be executed at a specified - or better - price where partial fills are allowed, and may involve multiple parties.

Over-the-counter (OTC) trades are executed directly between two parties based on signed agreements, and transaction of emissions units should be carried out at CBEEEX. When connected transactions are conducted between two or more trading entities, or a single transaction of allowance exceeding 10,000 tCO₂, the transactions are obliged to be proceeded via OCT trading.

A price warning system is also established as a part of the market stability mechanism, where trading entities can auction extra allowances if the weighted average price is above CNY 150 (USD 21.00) for 10 consecutive trading days, and buy-back allowances from the market if the price falls below CNY 20 (USD 2.80).

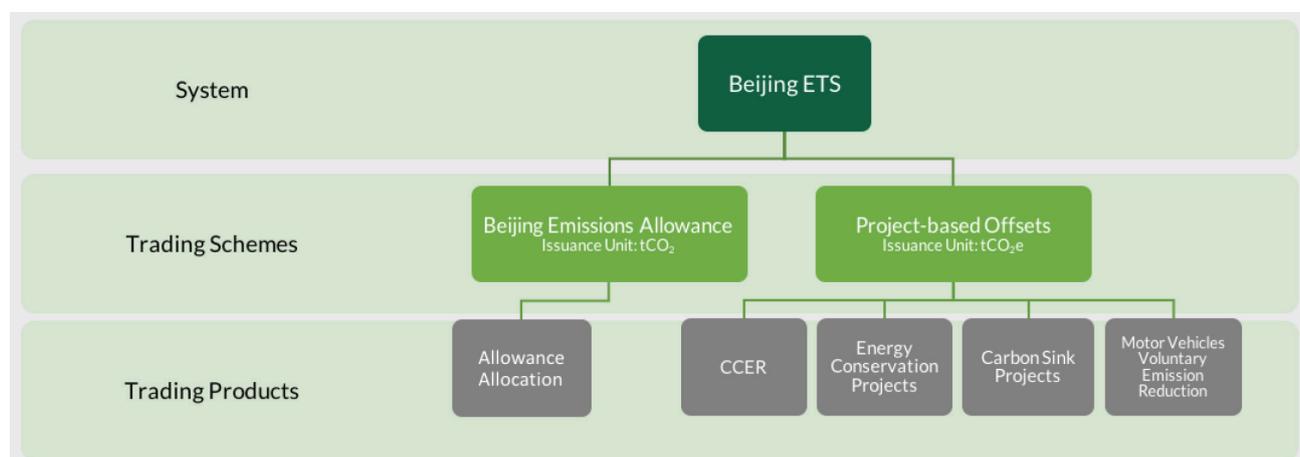


Figure 3. Structure of the Beijing ETS

13. CBEEEX & BETA, 2019

Achievements

Since the carbon market officially launched in Beijing on 28 November 2013, trading activities have been steadily increasing both in terms of volume and value under BEA (Figure 4). As of 31 December 2018, 29.07 million tons of emissions allowances have been traded on the Beijing ETS, which accounts for a total value of CNY 1.049 billion (USD146,860 million), with online trading and OTC transactions representing around 36% and 64% of the total volume respectively. By the end of 2018, over 960 entities in Beijing have registered themselves in the carbon market with a total of 360 entities and individuals having participated in actual trading activities. Data used in this section came from the Annual Reports of Beijing Carbon Market 2014-2018 by CBEEEX and BETA.

Trades regarding the emission units generated through CCER, on the other hand, vary depending on the numbers of projects validated. Between 2015 and 2018, a total of 22,141,182 tons CCERs were traded in Beijing, with a total value

of more than CNY 144 million (USD 20.16 million). Considering the emission units generated via CCER may have different trading conditions and applicability, the majority of their trading took place through OTC transactions. Wind power, biomass energy, biogas utilization, solar CCER projects.

Similarly, trades regarding the emission units generated from forestry carbon sink projects also vary depending on the number of projects validated. By the end of 2018, forest projects in Beijing have been issued with offsets including the *Shunyi Forestry Carbon Sequestration Project (Phase 1)*, the *Chengde City Fengning County Qiansongba Forestry Carbon Sequestration Project (Phase 1)*, the *Beijing Fangshan District and Badaling Carbon Sequestration Afforestation Project*, and the *Saihanba Mechanical Forest Farm Afforestation and Carbon Sequestration Project*. According to the *Annual Reports of Beijing Carbon Market* released jointly released by CBEEEX and BETA, a total of 164,826 tCO₂e were traded in Beijing between 2014 and 2018.

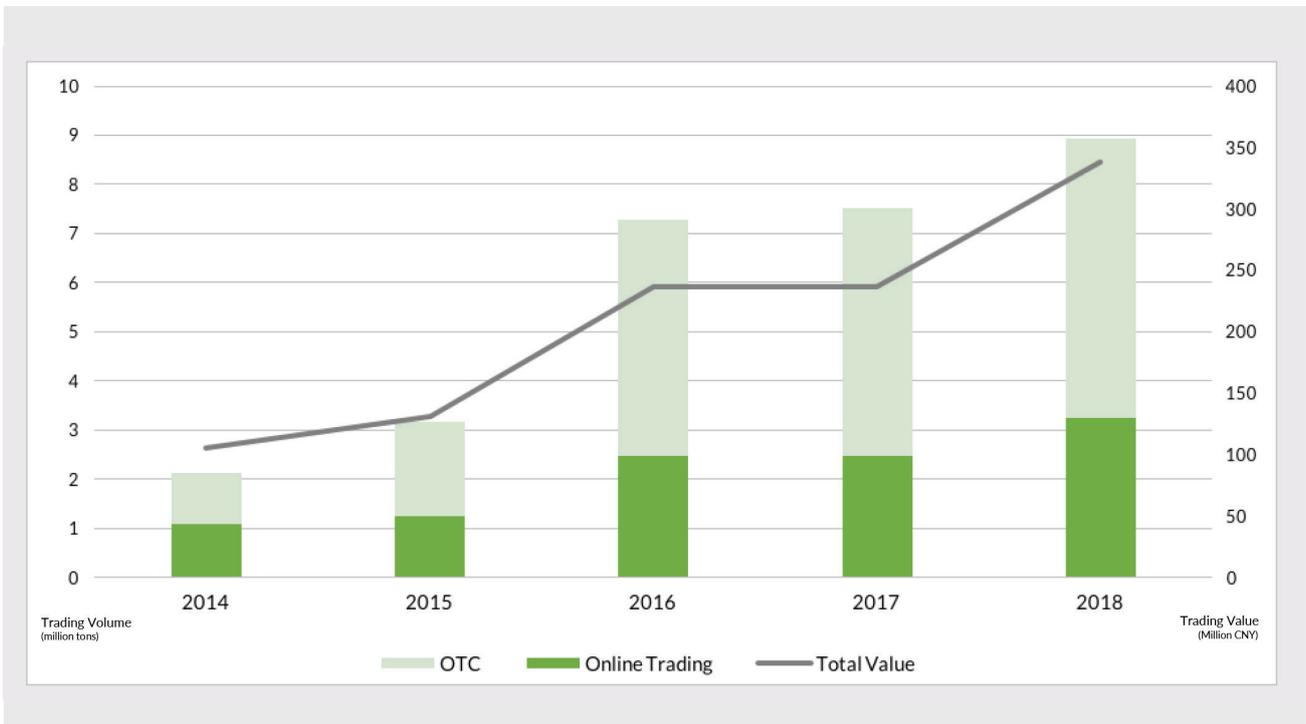


Figure 4. 2014-2019 Beijing Carbon Market Performance - BEA

Table 1. 2015-2018 Beijing Carbon Market Performance – CCER

	Online Trading		OCT Trading		Total Trading	
	Volume (tons)	Value (CNY)	Volume (tons)	Value (CNY)	Volume (tons)	Value (CNY)
2015	7,788	167,688	5,117,181	24,554,288	5,124,969	24,721,976
2016	23,828	361,370	8,253,277	60,002,384.00	8,277,105	60,363,754
2017	94,226	1,431,344.00	6,998,909	48,792,204.88	7,093,135	50,223,548.88
2018	71,180	655,270.40	1,574,793	8,488,514.42	1,645,973	9,143,784.82
Total	197,022 (1%)	2,615,672.40	1,574,793 (99%)	21,944,160	22,141,182	144,453,063.70

Source: CBEEEX & BETA, Annual Report of Beijing Carbon Market 2015-2019

Table 2. 2014-2018 Beijing Carbon Market Performance – Forestry Carbon Sink Projects

	Trading Volume(tons)
2014	3,550
2015	69,065
2016	2,530
2017	2,530
2018	87,151
Total	164,826

Source: CBEEEX & BETA, Annual Reports of Beijing Carbon Market 2014-2018

Capacity Building on the Beijing ETS

Trading Entities

The management of carbon assets is increasingly gaining its importance as a new form of assets among regulated entities in the market, along with capital, real and intangible assets. Good management can allow industries to lower operational costs, increase revenue, and improve their competitiveness in the field of sustainable development. On the contrary, failure in management could lead to depreciation of carbon assets, increase in operational costs and lowered market competitiveness.

To ensure an active and robust carbon market, annual meetings are being hosted among the regulator, regulated entities and mandatory reporting entities. Training and capacity building opportunities on emissions monitoring, calculation, verification, as well as allocation methodologies have also been provided. Through this process, more and more entities are starting to foresee the importance of transitioning towards low carbon productions, and are more willing to

take a further step into renovation and remodeling for energy efficiency.

Local Governments

China adopts a hybrid (top-down and bottom-up) approach on climate governance, and has demonstrated great ambitions in combating climate change by ratifying the Paris Agreement and issuing its Intended Nationally Determined Commitments. With the targets set by the central government, local governments in China are obligated to participate in the process.

Local governments taking the bottom-up approach play a leading role in an ETS by initiating legislations and regulations for the system. In the case of Beijing ETS, the Municipality has appointed a specific bureau in leading its establishment and operation.

Communications between local governments are also essential, as they allows local authorities to exchange and share their best practices related to ETS. In this regard, Beijing, as one of the pilot cities in China, has been willing to share its experience with other local governments. For instance, in 2018, Beijing provided a capacity building training to Hebei province on establishing and operating an ETS. CBEEEX has also set up special funds to provide capacity building opportunities for cities and regions that are yet to establish a carbon trading pilot system, such as Jiaozuo and Changzhou.

Capacity Building for Individuals

CBEEEX is one of the few institutions who are focusing on ETC capacity building programs for individuals. Since early 2014, CBEEEX has been co-hosting monthly training on Carbon Asset

Management and GHG Emissions Calculation & Verification with the Education and Training Center of China's Ministry of Human Resources and Social Security. Participants will be updated with the latest policies and regulations related to the carbon market and emissions trading processes. Individuals from China are eligible to apply for the qualification courses and become authorized trainers. As of June 2019, over 100 training events have been conducted by CBE-EX. Relevant new career paths and job positions have also emerged consequently.

Lessons Learned

Contributions of the Beijing ETS

The Beijing ETS has successfully triggered regulated entities to take measures and reduce GHG emissions through technological renovation and upgrading, which contributed to reducing Beijing's total emissions and expenditure on carbon reduction. Through ETS mechanism, Beijing has managed to reduce its total emission and expenditure spent on carbon reduction. Moving into its seventh year of operation, the Beijing ETS has made critical contribution to the achievement of the target to lower the CO₂ emissions per CNY 10,000 of GDP by 20.5% in 2020 compared to 2015, as set in the 13th Five-year Plan following the national requirement.

In addition to reducing GHG emissions, a number of other contributions the Beijing ETS can bring about are as follows:

Co-benefit measures for air quality control and green development. Beijing carbon markets are equipped with the advantages of incentive and flexibility that could effectively promote energy transition and air pollution management. The Beijing ETS played a critical role in bringing down the proportion of heavy polluting and energy intensive industries, and advancing the Municipality's competitiveness in the field of green and high quality development in the region.

Promotion of the national ETS. The successful experience of the Beijing ETS has been channeled into the launch and the incremental development of China's national ETS. In particular, Beijing has contributed in terms of capacity building for non-pilot areas, as well as providing

Access to the right tools would allow cities and regions to develop their emission inventories with high quality data and efficiency. The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) jointly developed by the ICLEI-Local Governments for Sustainability, the World Resource Institute and the C40 Cities Climate Leadership Group, provides a framework for accounting and reporting city-wide GHG emissions. The GPC seeks to help cities developing a comprehensive and robust GHG inventory to support climate action planning, following the principles of relevance, completeness, consistency, transparency and accuracy, and further utilize the results for pre-feasibility studies and policy design before initiating their carbon ETSs.

support on financing, trading platform establishment and management of carbon assets.

For the next step, Beijing intends to put more efforts on the administration perspective of its ETS for improvement. For example, some entities in the service industry do not have high emission rates, yet, are faced with high costs of market management. The Municipality is now looking into further elaborate the policies on the service industry, and modify the standards defined in their supporting policy documents.

Policy Recommendations

The extensive experiences and measures of the Beijing ETS has its referential values for other cities who would like to establish a local ETS.

Cities should pay special attention to their historical GHG inventories early in the process of ETS development. A robust foundation of high quality historical emissions data would allow the regulator to calculate its business-as-usual emissions, determine objectives for the ETS, and identify the key sectors to cover. For example, pre-feasibility studies and policies can be made upon inventories.

Industries emitting the most can be the starting point of an ETS, as a way to maximize its

effectiveness. In the case of Beijing, 70% of its annual emissions come from the tertiary industry, and the pilot ETS, therefore, covers universities, public transport and medical institutions, etc. As of 2020, the Beijing ETS has covered around 45% of the city's total emissions.¹⁴

When it comes to the establishment of the system, it is important for local governments to ensure their policy framework is comprehensive and consistent. The blueprint of the carbon market laid out by Beijing's "1+1+N" policy mechanism has provided a solid foundation for the operation of its ETS.

Meanwhile, extra efforts on establishing a comprehensive and well-functioning system, and stabilizing the market has been made by Beijing. The Beijing ETS consists: GHG emission reporting & registration system and online trading platform; third-party verification; emission allowance verification and issuance; as well as emissions trading and market liquidity.

Allowance allocation is a critical determinant of its distributional impacts and a key to an efficient ETS. The objectives and design features of allowance allocation should meet balance of transparency, acceptability, operability, fairness, efficiency, liquidity and stability of the market. Allocation methods vary depending on its objectives and can vary across sectors. In response to the regulated entities who are wrestling with an insufficient amount of allowances and have made appeals for extra units, the Beijing Municipality has been nose-diving into the allocation mechanism for optimization.

Ensuring market liquidity may be challenging. The limited allowance supply and the lack of awareness and knowledge on carbon asset management among the regulated entities were some major challenges regarding market liquidity the Beijing ETS encountered in its initial operational years. However, as the scale of the system continued to expand, with more sectors and entities covered, as well as the participation of individuals, the market liquidity has largely im-

proved. In fact, carbon asset has started to gain its importance as a form of investment and financial product for individuals and non-covered entities. Especially, entities that are not yet covered in the ETS could accumulate experiences for better performance in the future as they participate voluntarily.

Monitoring, supervision and enforcement of penalties should be conducted appropriately and impartially. A well-established ETS can be an effective measure for emission reduction and climate change mitigation, and relevant incentive measures and sanctions could increase its compliance rate. In the case of Beijing ETS, regulated entities failing to comply with the allowance or submit emissions and/or verification reports on time will face penalties. In addition, records of non compliance and negligence will be kept on the entity's profile in the country's national credibility system, which may have impacts on its future capital financing.

Inclusive, innovative and multi-stakeholder engagement are success factors of the Beijing ETS. Beijing has taken a lead in promulgating the management method for carbon emission offsetting. In addition to trading of allowances, entities can also generate emission units through participating in verified voluntary emission reductions programs and/or implementing energy-conservation renovation and forestry carbon sink projects. This has provided space for a wide variety of innovative projects and initiatives to be carried out on the ground, contributing to GHG emission reductions in the city.

Local governments play a leading role in the establishment and operation of ETS. Local governments are directly engaged in the process of policy design, implementation and supervision of the market operation. Through providing guidance and capacity building to covered entities, local governments can ensure that all entities are on the right track and are aware of their responsibilities. They can also share their experiences and learn from the best practices of peers.

14. ICAP, 2020a

15. UNFCCC, 2017

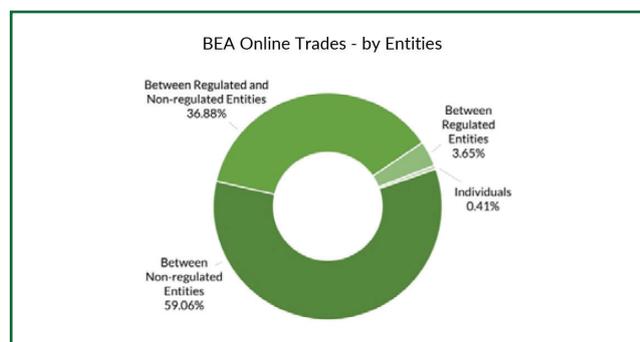
16. CBEX & BETA, 2019

Snapshot of Beijing's Carbon Market in 2018

Due to COVID-19, CBEEEX is yet to publish its 2019 Annual Report. A snapshot of the Annual Report of Beijing Carbon Market 2018 is presented below.¹⁶

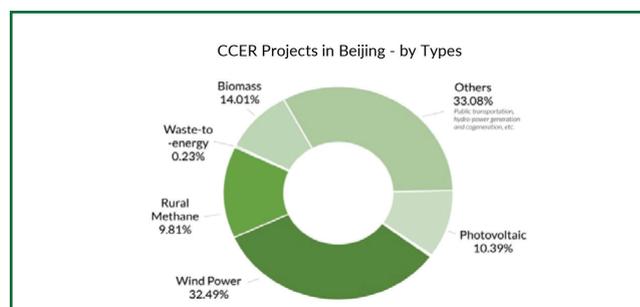
2018 Beijing Emissions Allowance

Trading Days	243 days
Total Trading Value	CNY 338,210,096.88 ≈USD 47,349,413.56
Total Trading Volume	8,941,083 tons Online: 36.27% OCT: 63.72%
Average Price of Online Trading	CNY 57.98 /ton ≈USD 8.12/ton



2018 CCEP Projects in Beijing

Total Number of Projects	30 Projects
Total Trading Value	CNY 9,143,784.82 ≈USD 1,280,129.87
Total Trading Volume	1,645,973 tons Online: 4.32% OCT: 95.68%
Average Price of Online Trading	CNY 9.21 /ton ≈USD 1.29/ton
Average Price of OCT	CNY 5.39 /ton ≈USD 0.75/ton



2018 Forestry Carbon Sink Projects

Total Projects	4 Projects
Total Trading Volume	87,151 tons
Total trading value	CNY 1.97 Million ≈USD 0.28 million
Number of Trades	23 trades

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16. CBEEEX & BETA, 2019

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ICLEI - Local Governments for Sustainability is a global network of more than 1,750 local and regional governments committed to sustainable urban development. Active in 100+ countries, we influence sustainability policy and drive local action for low emission, nature-based, equitable, resilient and circular development. Our Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

Hosted by the Seoul Metropolitan Government, the ICLEI East Asia Secretariat supports East Asian Members in the Greater China Region, Japan, Korea and Mongolia. ICLEI East Asia has developed local and regional programs and exchange platforms to accelerate sustainable and low carbon development in the region. In further extending our support to Chinese cities' sustainable and environmentally friendly development, ICLEI East Asia opened the Beijing Office in 2018.