



WHITE PAPER ON CHINA'S NATIONAL ETS

Moving from the Sub-National to National Level



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EXECUTIVE SUMMARY

The People's Republic of China, as a developing country, is severely affected by the adverse impacts of climate change. Concurrently, its rapid industrialization contributes to a substantial portion of global greenhouse gas emissions. China's desire for sustainable development and global leadership in addressing climate change resulted in the ratification of the Paris Agreement in September 3, 2016. Thereby, in accordance with the Conference of the Parties (COP), China put forth their nationally determined commitments (NDC).

As part of their NDC, China has committed to peak carbon dioxide emissions by 2030, reduce their carbon intensity by 60-65% of their 2005 levels, to increase non-fossil fuel energy to around 20% of their overall energy mix, and to increase afforestation efforts¹.

The National Development and Reform Commission (NDRC) has developed a national emissions trading system (ETS) for China to promote adjustments in their industry and energy infrastructure. At COP23, China announced that they were ready to launch the national ETS before the end of 2017. While the national ETS is yet to launch, its design is the result of the best practices and experience of their 7 provincial and municipality pilot ETSs, which have been operating since 2013 as part of their 12th Five-Year Plan.

Proper implementation and policy measures are integral for China's ETS to be successful as the largest ETS in the world. The present paper aims to address several policy measures in the national ETS and provide policy recommendations based on research conducted on the 7 pilot ETSs. The recommendations that this paper will propose are to ensure an equal playing field and encourage competition among the national emission trading platform. **To realize these goals, it is recommended that the Chinese NDRC:**

- **Set national standards and regulations for MRV (monitoring, reporting, and verification), allocation of allowances, enforcement of compliance, and CCER use (Chinese certified emission reductions).**
 - **Adopt a robust, efficient, and transparent MRV.**
 - **Favor benchmarking as the method for allowance allocation over grandfathering.**
 - **Ensure homogeneity of CCER criteria among all the provinces and municipalities.**

INTRODUCTION

EMISSIONS TRADING SHOULD BE A CENTRAL OBJECTIVE TO EMISSION MITIGATION. THE TRANSITION TO A LOW-CARBON ECONOMY, THROUGH THE PHASE-OUT OF FOSSIL FUELS AS THE PRIMARY ENERGY SUPPLY, REQUIRES A MARKET-BASED APPROACH IN CHANGING INVESTMENT DECISIONS IN THE ENERGY SECTORⁱⁱ.

The emissions trading system (ETS), or cap-and-trade, represents a market-based approach to reduce carbon emissions. The ETS creates a market price for carbon emission allowances, based on the supply and demand of these allowances. Putting a price on carbon is intended to spur investments in clean energy technologies and to progressively move away from carbon-heavy fuel sources.

The ETS is fundamentally different from a carbon tax in how it aims to achieve emission reductions. An ETS cap the total allotted emission per compliance year and distributes emission allowances to carbon emitting entities while keeping the cap in mindⁱⁱⁱ. Entities who have a surplus of emission allowances can go to market and sell their extra allowances to those entities who require more emission allowances than they were allotted. In this way, entities can maintain compliance and are incentivized to invest in clean technologies. In the ETS, the cap is decreased annually, which guarantees certain emissions reductions. A carbon tax is a direct tax on the carbon content of a fuel source. Unlike the ETS, there is no pre-determined emissions reductionⁱⁱⁱ.

CAREFUL CONSIDERATION OF THE BEST PRACTICE MEASURES FROM THE PILOTS ETSS IS IMPORTANT. POLICY-MAKERS SHOULD BE AWARE THAT WITH NATIONAL COVERAGE, COMES LARGER ABSOLUTE EMISSIONS AND MORE VARIABILITY IN COMPLIANCE.

Central to the NDRC's design process of the national ETS are the experiences and relevant aspects of the 7 pilot ETSs. With the eventual implantation of a national ETS in mind, The National People's Congress announced, in their 12th FYP, the launch of 7 separate ETSs to test out the possible arrangements of the national system. The pilots consisted of regional and municipality run ETSs: Beijing, Shanghai, Tianjin, Chongqing, Shenzhen, Guangdong, and Hubei^{iv}. Altogether, the 7 pilots contributed to a carbon allowance of 1.2 billion tons CO₂/year, accounting for 11.4% of the national emissions in 2014^v.

The success of the pilot ETSs can be measured by the compliance results at the end of the annual compliance cycle. As of June 2016, four Chinese pilots reported near 100% compliance, two have yet to release results. Beijing's Development and Reform Commissions reported 85 non-compliant entities and have allowed extra time to make up for the differences.

The present paper aims to ensure proper design and implementation of the national ETS based on the best practices of the 7 pilots. It is believed that strict national guidelines and rules should be applied to every province and municipality to ensure the successful expansion from the sub-national to the national level.

MONITORING, REPORTING, AND VERIFICATION

Accurate monitoring, reporting, and verification (MRV) of organizational emissions is important to understanding the national emissions profile and the level of mitigation achieved through the market-based approach^{vi}. Additionally, effective MRV is essential to preventing double counting of allowance units, this upholds the integrity of the carbon units and the ETS. The seven pilots are different in their economic structure and dominant sectors; therefore, their policies are slightly different to reflect this difference^{vii}.

Emissions monitoring and reporting in the pilots can be conducted in one of two methods. Emissions can be quantified using either calculation-based or measurement-based methods^{viii}. The municipalities of Tianjin and Chongqing only allowed the calculation-based method. The measurement-based method allowed for direct measurements of emissions, but is not cost effective to implement^{viii}. The calculation method allowed reporting entities to use either measured or default emission factors to calculate their total emissions from their activity data^{viiiix}. The activity data that the pilots considered also differed based on what activity and sectors were appropriate to monitor in each municipality or province.

Verification of emissions for all 7 pilots was required for all entities, by a third-party verifier. The cost of the verification was burdened by the local Development and Reform Commissions (DRC). The verification process can be broken down into three stages: preparation stage, implementation stage, and reporting stage^{viii}. During the preparation stage, the verifier signs a contract with the entity and creates a verification team. Next, the verifier reviews the entities documents and performs a field examination. Finally, in the reporting stage, the report is sent for technical review and submitted to the DRC^{viii}. The importance of third-party verifiers is to uphold the integrity of the allowance units and to provide full transparency to the ETS.

The present paper recommends that China adopts a uniform, robust, and transparent MRV method where accredited independent verifiers can ensure the integrity of the carbon emissions. Additionally, it is recommended that companies do not have a choice of verifiers to utilize during the verification phase. Verifiers and companies should be matched based on the double-blind selection process to maintain full autonomy and impartiality.

ALLOCATION OF ALLOWANCES

The free allocation of allowances is the preferred method for distributing most of the emissions allowed by the absolute cap to the entities of the ETS. Free allocation can take two forms; allocation can be based on grandfathering or benchmarking emissions.

Grandfathering is the preferred method of the Chinese pilot ETSs. Free allocation based on grandfathering allocates allowances based on historical emissions data, often looking at a baseline year. To account for technological innovations and to bring the overall cap down annually, a reduction factor is applied to the historical baseline^x. The general advantage of utilizing grandfathering is evident when introducing an ETS, because of its simplicity and provides an early indicator of appropriate allowances. However, its disadvantages often outweigh the advantages. Grandfathering unfairly rewards those who had the highest emissions in the past with a larger amount of allowances than those who invested in cleaner technologies^{xi}. Additionally, grandfathering allocations can only work with those entities who existed before the launch of the ETS. New entities are disadvantaged in that they either don't have historical emissions data, or their emissions aren't representative of their projected growth. Grandfathering allocations can limit the growth of new, emerging entities.

Free allocation based on benchmarking is considered a fairer approach to grandfathering because it considers the future growth of the entity, offers more incentive for clean development, and offers the same baseline entry allowance for both existing and new entrants^x. Benchmarking allocates allowances based on a predefined emission performance standard per carbon content. Those companies, whose processes do not meet the performance standard are required to purchase more allowances from the ETS. Benchmarking rewards those entities who act to reduce emissions and can be used similarly for both existing and new entrants into the ETS^{xi}. The complexity of benchmark as an allocation method is a reason why many would argue for grandfathering to precede benchmarking. The complexity lies in the difficulty in defining a homogenous unit of activity which the benchmark, or emission performance standard, refers to. It is important to point out that because grandfathering was implemented in the pilot ETSs and activity data for the sectors recorded, that the transition to a benchmarking method should be the next step for the national ETS.

The present paper recommends that the national ETS implement benchmarking as the primary allocation method of allowances. While grandfathering is effective in getting entities to participate in the ETS, this allocation method is not necessary because it was already implemented in the 7 pilot ETSs. Repetition of this allocation method is unnecessary and will

be counterproductive in incentivizing entities to invest in cleaner technologies and reduce emissions.

CHINA CERTIFIED EMISSIONS REDUCTIONS (CCERS)

The 7 pilot ETSs included a provision for entities to earn Chinese Certified Emission Reductions (CCER) by engaging in emission reduction activities^{xii}. These emission offset credits can be used just as an allowance; it can be bought and sold on the ETS, as well as be used to meet compliance. Because the CCERs can be added to the ETS, the NDRC must consider this when setting the cap and allocating allowances. The total allowed CCER and allowances must not exceed the absolute cap. Each pilot ETS required the emission reduction activity to occur within their specific range of jurisdiction. This is because CCER activities have the co-benefits of improved air quality, increased economic activity, as well as a host of other environmental benefits.

Because the ETS's main function is to serve as a market-based mitigation strategy, the amount of CCERs allowed to be used for compliance purposes should be limited. Among the different pilot ETSs, CCERs were limited to anywhere from 5-10% of an entity's annual allocation^{xii}. This ensures that the majority of a company's investments go to reduce the emissions of their specific activity, instead of seeking emissions reductions elsewhere.

The province of Hubei's CCER compliance eligibility was 10% for new entrants and 15% for those engaged with the ETS from its launch^{xiii}. This provision for CCERs to be used towards compliance should be avoided at all costs. Opportunities for CCERs should be fair and equal to all entities in the ETS and should be clearly defined by the NDRC.

The present paper recommends that the NDRC should incorporate CCER's as an opportunity for entities to offset emissions and be used towards compliance if:

- **The NDRC clearly identifies and presents equal opportunities for entities to engage in emission offsetting activities**
- **The NDRC can ensure homogeneity of CCERs across all provinces and municipalities**
- **The NDRC ensures equal opportunities to both current and new entrants into the ETS to used CCERs towards their compliance.**
- **The NDRC carefully considers the % of allocation that CCER's can be used for compliance. This guarantees that companies invest in cleaner technologies that reduce the emissions of their specific activity.**

CONCLUSION

The People's Republic of China announced their intention to launch a national ETS to help realize their NDC while supporting the country's sustainable development. To continue supporting economic development, China has approached mitigation by committing to reduce their carbon intensity rather than absolute emissions. With the launch of the national ETS eminent, China must understand that the parameters implemented in the pilot ETSs were experimental. While the experiences of the ETSs should be considered, the NDRC must create a homogenous playing field for the provinces and municipalities by determining national standards and guidelines for MRV, allocation of allowances, and CCER usage.

With adopting a robust and transparent MRV, the NDRC need to take every precaution to ensure that the verification process contains no biases. The credibility of the emissions units is the foundation of what makes the ETS function as a market-based mechanism for mitigation. Homogenous guidelines over the MRV process will ensure that emissions aren't double counted and provide an accurate emissions record for their NDC.

The NDRC should implement and favor benchmarking, over grandfathering, as the method for free allowance allocation. This will ensure that they distribution of allowances is fair to both new entrants and those entities who have already invested in cleaner technologies. Forward-thinking entities should not be penalized with a lower allowance with respect to those entities who put no effort preceding the ETS. And finally, the national ETS should implement an allocation method that encourages companies to invest in cleaner technologies and to reduce the emissions of their individual activity unit.

Entities in the ETS should have access to a mechanism that allows them to earn CCERs through verified emission reduction activities. Not only do CCER's have the co-benefit of improved economic, social, and environmental benefits, they are extra emission units that can be brought into the ETS or used to attain compliance. Because the main goal of the ETS is mitigation, CCERs should be limited to a small percentage of an entities annual allowance. The NDRC should set a national standard so that all entities have an equal opportunity to use CCER's for compliance.

While the Chinese national ETS has learned through the experience of their pilot programs, they must also remember that international ETSs are willing to help smooth out any complications that may arise as a new ETS. The EU ETS has formed a strong partnership with China and is committed to supporting China establish their national ETS. China's national ETS will cover the largest amount of emission of all the other ETSs and will be a success if they are able to implement a standardized set of regulations and guidelines to ensure the integrity of the carbon market.

References

- ⁱ <http://www4.unfccc.int/ndcregistry/PublishedDocuments/China%20First/China%27s%20First%20NDC%20Submission.pdf>
- ⁱⁱ OECD. (2017) Investing in Climate, investing in Growth. OECD Publishing, Paris. [Http://www.oecd-ilibrary.org/economics/investing-in-climate-investing-in-growth](http://www.oecd-ilibrary.org/economics/investing-in-climate-investing-in-growth)
- ⁱⁱⁱ <http://www.worldbank.org/en/programs/pricing-carbon>
- ^{iv} <http://ets-china.org/emission-trading-schemes/ets-in-china/>
- ^v http://junjiezhong.org/files/2017_EEEP_ETS_Zhang.pdf
- ^{vi} https://wri.org/sites/default/files/MRV_101_0.pdf
- ^{vii} <http://www.iddri.org/Publications/Building-MRV-for-a-successful-emissions-trading-system-in-China>
- ^{viii} <http://documents.worldbank.org/curated/en/293701468242651732/pdf/951960NWP0Part00Box385315B00PUBLICO.pdf>
- ^{ix} http://www.ieta.org/resources/China/IETA%20White%20Paper/IETA%20White%20Paper%20China%20ETS_EN%20Version%20Oct%202016.pdf
- ^x <http://www.etg.uk.com/documents/Grandfathering%20and%20Benchmarking.pdf>
- ^{xi} <https://www.ecofys.com/files/files/ecofys-2014-industry-view-chinese-ets-allocations-english.pdf>
- ^{xii} [http://www.ey.com/Publication/vwLUAssets/EY-Understanding_Chinas_Emissions_Trading_Schemes_and_Emissions_Reporting/\\$FILE/EY-Understanding-Chinas-ETS-and-Emissions-Reporting.pdf](http://www.ey.com/Publication/vwLUAssets/EY-Understanding_Chinas_Emissions_Trading_Schemes_and_Emissions_Reporting/$FILE/EY-Understanding-Chinas-ETS-and-Emissions-Reporting.pdf)
- ^{xiii} [https://icapcarbonaction.com/en/?option=com_etsmap&task=export&format=pdf&layout=list&systems\[\]=58](https://icapcarbonaction.com/en/?option=com_etsmap&task=export&format=pdf&layout=list&systems[]=58)