



# China Carbon Forum | 中国碳论坛

*An independent platform to foster trust and cooperation among China's stakeholders for climate action*

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## Stabilizing Carbon Markets: Lessons learned and applicability for China's promising carbon markets

### Executive Summary

China's carbon market is developing quickly, and China is on its way to establishing the world's largest carbon market. For China's carbon market to be effective, stable carbon prices with a rising forward curve are necessary. An international reserve, which supports a strong and rising carbon price, could be of significant benefit to China, both as a demander of credits in the future, and also as a supplier given the stranded assets currently under the CDM. On March 5th 2014, China Carbon Forum, in cooperation with the Climate Markets & Investment Association, and Association for Sustainable and Responsible Investment in Asia launched the Brookings Institution and Climate Advisers' innovative Carbon Market Reserves Report in Beijing. The event successfully shared the report's main messages, lessons learned and heard feedback from China's climate stakeholders on the future development of domestic and global carbon markets.

*The following is an edited synthesis of discussion that took place at the event among panelists (around 1.5 hours) and open Q&A with participants (45mins). As per convention, individual's comments are not attributed.*

### Record of Discussion

While carbon markets are spreading around the world (in 2015 3 billion (bn) people and the majority of the global economy will be covered), the global carbon market is dysfunctional, with CDM prices just 7% of market value in 2011, creating uncertainty about future viability. Absent new policies, global carbon markets will suffer from lack of confidence and volatility.

**There are two key arguments for ensuring a stable carbon price.** 1) Extreme uncertainty undermines a potential stream of FDI in clean energy and technology. CDM has generated billions of

dollars for business and investment in developing countries; and 2) Experience in the global carbon market, especially CDM, has led to domestic climate action. Model projects and regulatory capacity allow host countries to make more robust pledges. An international carbon market reserve is one possible solution, short of harmonizing all the disparate carbon markets. **The global carbon market is one of the few markets that doesn't have some kind of reserve or price stabilization policy.**

To test whether a limited global carbon market reserve could be useful in the post-2020 period, the Brookings study modeled the impact of a reserve on carbon market prices from 2020-2030. The model assumed a need to hold around 600 million (mn) credits (about 1% of the global carbon market's projected size in 2020), and assumed 2012 CER volatility. **The report found that the total value of a reserve was US\$14bn.**

**Because CER prices are low there is an opportunity to act now.** There are about 500mn CERs in the market today worth less than US\$1, or 1bn CERs by 2015, implying that a reserve could be populated for at most \$600mn. Waiting could mean paying 2020 CER prices, which are likely to be much higher (e.g. EU estimates 2020 prices to be about €16). **This would make it ten times more expensive to establish a reserve in 2020 than it would today.** If \$600mn couldn't be raised, a \$100mn down payment would go some way towards a reserve, saving about \$1bn compared to the cost in 2020. Capitalizing the reserve now makes financial sense, representing a greater ROI.

**A larger reserve would be more expensive to populate, but would buy the international community more time.** In more than 50% of the simulations where the model didn't work, it was because it didn't have enough money to maintain the price floor and ceiling function.

**There are three reasons why an international reserve is of interest to Chinese policy makers and business.** 1) China may participate in new areas of the international carbon market. As a future demander of credits, China should allow international post-2020 credits for compliance, potentially generated in the G77 or LDCs. If China looks to contain costs through an international market, a stable carbon price would be essential. A stabilization reserve, such as in many Chinese pilot ETSs can help. A reserve that helped maintain a price floor and ceiling could also help provide a minimum price for Chinese offsets; 2) G77 countries would benefit from FDI that would flow due to a stable global market; and 3) Stranded Chinese CDM projects could benefit from this proposal. 10%

offset allowance cap in many of the pilot schemes will absorb some of these assets, but probably not all. An international reserve could help.

There was agreement among panelists that **the earlier an international reserve is established, the earlier China could benefit from it.** Likewise, that establishing an ETS earlier means claiming a share in the global carbon market.

**The current mode of trading in China's pilots varies.** In Shenzhen, non-compliance entities are eligible to participate in trading, in Beijing they have to obtain approval to participate, and in Shanghai and Guangdong they are not eligible to trade. These differences reflect pilot regions' perceptions of risk. Local government leadership is very important in China, and the success of the pilots is very much dependent on the leadership of that region. Administration is sometimes ahead of other mechanisms in China, perhaps due to the limited development of free market thus far.

**From China's perspective, current ETS priorities include:** 1. Legal framework to determine the coverage of companies; 2. Durable and cost effective methodology; 3. Capacity for entities to include carbon revenue in their financial reporting; and 4. Regulation of exchanges. **China's plan to build capacity in all these areas was clearly noted.**

**The panel noted that the UNFCCC's attempt to establish an international reserve had been unsuccessful.** As a result, the proposal moved to the World Bank, which is working on how to establish a reserve given that UNFCCC endorsement is not currently politically possible. In addition to The World Bank, Sweden, Norway and others are trying to capture some of the principles that a reserve would deliver. There's already \$100-\$300mn of investment between those countries. The World Bank with IFC and other stakeholders are trying to bring it together in a way that makes sense and it's a matter of when and how, rather than if this happens. So despite the current difficulty in securing public funds, a reserve can build on existing donor interest in trying to support these stranded assets. Much of this money will come from developed countries, but there are also reasons why emerging economies have interest in a stable international carbon market to contain costs for their own companies if they allow international credits in to their domestic mechanisms.

**Developing a domestic reserve puts less demand on public funds** because it only requires a percentage of allocations used for establishment, with no need to mobilize additional money. It is also possible to, at auction, use allowances that weren't bought to populate a reserve. In the international market, public money will be required in order to pursue the proposed reserve.

**The panel noted the complementarity between an international reserve and emerging ETSs that include a reserve for price stability, including Chinese pilots.** Guangdong has a system with 10% (30mn tones) dedicated to a reserve. However it's not yet clear how that will work, i.e. the mechanism, trigger and legal compliance. In Shanghai, the reserve proportion has not been announced, but local experts are investigating how it would work. Specifically, the Shanghai emissions inventory involves a dual bottom-up and top-down approach. For top-down, the DRC looks at economy-wide emissions and sectoral emissions under the cap. For bottom-up, the DRC looks at company emission inventories. The discrepancy margin between the top-down and bottom-up approach may serve as a reserve quantity, especially after the first compliance period. For Tianjin, local experts indicate that between 0-10% would act as a reserve for managing price volatility. For Shenzhen, the reserve proportion is about 2%. The Shenzhen ETS has emulated the Californian tiered approach to contain price inflation.

**The panel was cautious but optimistic for these adjustment reserves to play an important role in stabilizing carbon prices in China.** Prior experience of commodity reserves in China is mixed, e.g. the cotton reserve policy, which was stopped by NDRC, so it is important to get the legal framework and transparency right for a carbon reserve. Market players and policymakers have to be on the same page. A local carbon reserve could help address price volatility in the short term and in achieving the early goals, keeping in mind China's unique and developing financial market.

**The panel was encouraged with developments in China.** Although only on a pilot scale the potential market is huge (already second largest in the world). Experimentation and learning by doing over the next three years is expected until policies become more consistent. Because both the regulator and companies have to observe, build, and learn, the first step is a transparent assessment of GHG inventories and action up the carbon chain, which requires investment, time and capacity building. The market requires not only participants and actors, but also an ecosystem of compliance mechanisms, which will be realized over the next few years. **An estimated 500,000 people with carbon market knowledge will be required.** It will take time to establish the human resources at the capped entities, the consulting firms around them, the verification agencies, the exchanges, and the regulator at the top, having a view by 2016 of what China's national system should look like.

**To date, the Chinese pilot schemes have experienced low liquidity and trading levels.** However, the panel suggested this would improve with time. In the UK ETS, where the EU

system had its beginning, had no liquidity. However, much liquidity is off exchange between market participants. **That type of liquidity requires capacity building.** Given time, the liability, risk and obligations on the part of energy intensive companies in China, the liquidity will come and its transparency will increase. Linking markets would also increase liquidity e.g. California and Quebec.

**The panel would like to see hedging in China's carbon markets, and companies managing carbon risk.** China's financial infrastructure needs to enable derivatives trading. A derivatives market is important not for speculation, but to help utilities manage assets, and China needs it as soon as possible. Considering that the Chinese pilots are still in their first compliance period, it will take time to build liquidity. In the future, Chinese companies will need assistance to manage their carbon assets so that secondary trading works like the EU (i.e. hedging risk). Given California's ETS experience, and given capacity, the Guangdong could see 100mn contracts in 2 years.

**The panel would like to see the carbon cash market, futures market, and financial instruments converge.** Other financial markets are opening up internationally. The Chinese share market currently has opened to US\$80bn worth of foreign capital, and international pension funds can now participate by buying shares in the market. **That legal framework can be easily applied to a carbon market** so that foreign firms can build on their own capital and risk analysis to provide liquidity to help counterparts in China.

**Experience shows that success requires a sustained price signal to drive clean tech investment and behavior of companies under the cap.** This in turn requires an open and transparent system, with data available in real time to all market participants so they can observe the forward price. While it may seem that achievement of an environmental goal alone is a sign of success, this is only one indicator. The purpose of the market is to help companies achieve their goal at lowest cost. This requires institutional liquidity, sophisticated capacity both at the emitters and the financial institutions, as well as international collaboration. If, as a regulator, a strong forward price curve is achieved, then companies will behave accordingly and the scheme will deliver its intended result. If a strong forward price curve is not achieved, participants will be confused, negating the key technology impact and emission reductions. The consequence will be economic rent that switches "from pocket to pocket".

BROOKINGS REPORT: <http://www.brookings.edu/research/papers/2013/12/international-carbon-market-volatility-purvis>