

Carbon-CAP

China workshop Report: 'Addressing Consumption-based Emissions: A Chinese Perspective'

10 November 2015

Introduction

The Carbon-CAP Stakeholder workshop took place in China, Beijing on the 10th of November. The agenda was informed by presentations from the project output and Chinese research relating to the same topics. The workshop had four sessions exploring the global drivers of change in carbon emissions, behavioural improvement options to tackle demand-side emissions, policy instruments for addressing consumption-related emissions, and policy scenarios for consumption-based accounting. The workshop was organised by Climate Strategies in collaboration with ICTSD and The Climate Group China at the Institute of Policy and Management of the Chinese Academy of Sciences. Its purpose was to engage Chinese stakeholders from academia, the government and industry to discuss the opportunities and barriers for consumption-based accounting and policies and its implications for China. The summary below attempts to group the workshop by session and key topics, therefore in some parts of it do not present a chronological order of the discussion.

Global drivers in carbon emissions from a consumption perspective

The first session was co-chaired by Li Junfeng from the National Centre for Climate Strategy and International Cooperation and also Advisor to the Chinese Government and Arnold Tukker from TNO. John Barrett from the University of Leeds presented the evidence that exists relating to the constant increase in consumption-based emissions in many developed countries. Per-capita consumption emissions in non-OECD countries are relatively low compared to OECD countries. He argued that some of the emissions should be accounted for where the economic benefits of production occur, but usually these are further down in the value chain, while the majority of emissions occur at the other end. Consumption-based accounting makes a connection between the production and consumption side along the entire value chain and can present economic opportunities. The UK for example claims reductions in its territorial emissions, although evidence shows that the consumption related ones are significantly higher and increasing with time. For emissions embodied in trade, the variation in emissions in the UK is very prominent while in China it is the opposite. John argued that depending on how we account for emissions, this changes the picture of responsibility and raises questions about the policy responses.

This session also focused on materials, which are the main carriers of industrial energy, releasing emissions from large imports of technologies, textiles, food etc. There are strong links between product-use and consumption of materials to satisfy demand in developed countries. Consumption-based accounting is not

only linked to trade and embedded emissions: it also shows the link between materials, their use and emissions.

It was noted several times that policies should not to reduce emissions at the cost of increasing them elsewhere. Pushing green initiatives/policies in one country, should not encourage carbon leakage.

Barrett suggested an opportunity to take consumption-based emissions into account by adjusting the existing reduction target (i.e. achieving it in a shorter time frame which would make it more ambitious). Reducing both production and consumption emissions would mean that we could draw responsibility for consumption into the country level targets. Carbon trading and pricing could be factored into the equation to tackle larger emitters and avoiding any complex bureaucratic systems. [Jiang Kejun](#) from the Energy Research Institute and IPCC WGIII lead author, argued that the UK 80% emission reduction by 2040 instead of 2050 is ambitious and could involve greater costs.

This session also explored ways of reducing emissions from consumption, for example via product life time optimization, reducing food waste, public sector improvement on use of products, opening the way for new domestic policy options.

Chinese participants further highlighted the slight scepticism around the possibility of making China shift its production accounting to accounting for consumption. Also the costs involved in making targets stricter could be a potential barrier. It was also pointed out that China has recently developed its standard for low carbon emissions in production processes, which would make it increasingly difficult to switch to a different system.

Application of consumption-based behavioural improvement options

In the second session co-chaired by [Li Junfeng](#) and [Andrzej Blachowicz](#) from Climate Strategies, [Valentina Prado](#) from the University of Leiden discussed the technical potential of improvement options for climate change mitigation in various production sectors. The presentation also covered how consumption-based policies could combat use-phase emission currently not addressed by our existing policies; and by taking a life cycle approach, these consumption based policies could target all the supply chain thus evaluating sources of emissions within and outside of the EU.

The analysis highlighted the greatest potential for the transport, buildings and food sectors. When looking at CO₂ savings of individual alternatives and the place of emissions – in and out of EU, we see that transportation related options have the most potential. Taking a country-specific perspective we see that countries with the largest populations (Great Britain, Germany and Poland) contribute the most to these savings while per capita, the effectiveness of each option is very different. This can inform policies that are reflective of differences between countries given that the most beneficial option is not the same for every country.

For these three sectors the emissions reduction potential was evident but the actual change of consumer behavior and adoption of new options could be a barrier. Karsten Neuhoff from DIW Berlin spoke about the barriers to pick-up rates of improvement options which can be targeted by different policies. With regard to building materials he stressed that there are various reasons why people stick to conventional materials. He

underlines that the free allowance allocation as leakage protection instrument in the EU ETS dilutes the carbon price signal for actors in the value chain and proposed complementing free allocation with a benchmarked consumption charge for carbon-intensive materials in order to re-instate the carbon price signal.

Questions from the Chinese participants emerged on how to structure a combination of policy instruments and complement them with leakage protection. They also stressed that in-country assessments of production processes are necessary. Jiang Kejun used as an example steel and cement, which are carbon intensive in their production but are not polluting products at the end of their life; Karsten Neuhoff agreed and argued that some plastic for example, which may have an emission-heavy end of their lifecycle, would necessitate complementing policies to address the corresponding environmental impact.

Jianseng Qu from the China Information Centre for Global Change Studies presented a case study on Chinese household emissions, showing evidence that these emissions have been growing for the past 5 years, although the average in the EU is much higher. Household emissions also differ between developing and developed country household emissions. In different countries household consumption takes up a different percentage depending on income levels, household behaviours, household location and size, and the rapid process of urbanisation.

Policy options for addressing carbon emissions at the consumption level-which implication for China

The third session was co-chaired by Karsten Neuhoff and Jiahua Pan, Director of the Chinese Academy of Social sciences. Jiahua Pan spoke about the effects of US and EU anti-dumping duties on the Chinese solar market, linking this to boarder carbon adjustment measures. He also highlighted the need to avoid double taxation and excessive costs that might be associated to consumption based policies. Michael Grubb, from University College London presented results from the assessment of potential consumption-side climate policy instruments. Sonja Hawkins from ICTSD spoke about the interactions between the proposed consumption-based policy instruments and international trade. She stressed the need to consider the implications for trade and the space that the WTO framework provides for many of the proposed instruments. She showed that some instruments would not cause trade distortions, while for those where distortions could arise, careful policy design and implementation can reduce such potential negative impacts. The policy instruments can also have positive impacts and create trade opportunities. Participants discussed the issue of “like products” in the context of embodied carbon, carbon labelling, and the questions to what extent the trade regime restricts or provides space for climate-related measures. Lin Ling from the China National Institute of Standardisation then gave a presentation on the greenhouse gas quantification and reporting methods in China.

An international outlook of consumption-based emissions

Annela Anger of Cambridge Econometrics presented a series of consumption –based policy scenarios highlighting the impact on national and international climate policies. Jiang Kejun presented a study on embodied carbon in consumer goods undertaken by Energy Research Institute in China. Teng Fei, Professor at Tsinghua University, commented on the lack of a consumption-based accounting inventory, calling for the need for an established framework to record emissions. He highlighted that agreeing on a standardised

(MRV) system in accounting will take time; in the meantime there needs to be concrete and transparent proposals for how this would function, which could start to put pressure on suppliers to employ cleaner production methods. He emphasised that it is worrying that OECD countries have not reduced their emissions over the past decade if consumption emissions are taken into account: this puts the decoupling of economic growth from emissions into question. In his opinion, despite existing uncertainties, consumption-based approaches can already offer important insights that we need to use. Consumer behaviour was also regarded as important in shaping policies. Also, studies on consumption vs. productions analysis highlighting the differences in emission reductions could give insight on the benefits of adopting complementary policy options.

Li Junfeng commented on China in light of the climate negotiations. He emphasized how China foresees its GDP to increase by 30% by 2020. The question remains on what implications this could have on consumption-based policies. He believed that there is more hope in the Paris COP than there was for Copenhagen but there are various constraints when trying to reach a deal and also implementing policies in a country following such agreements. This includes legal boundaries. He argued that the bottom-up approach for Paris could be useful to hold each country responsible for their targets and commitments. Even though there is potential for China to do more, he also mentioned that five years from now more and less costly technological advancements could be used to facilitate the process.

Changhua Wu, Director of the Climate Group China highlighted that the importance around Paris as well as the idea of a 'low carbon economy' are becoming present in public awareness in China. She argued that consumption-based accounting could be a useful tool in the UNFCCC context for China to show where emissions responsibilities lie.