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POLICY SUMMARY

Inclusion of Consumption of carbon intensive material in emissions trading

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Background:

A project led jointly by Climate Strategies and DIW Berlin has been exploring whether inclusion of domestic sales of selected energy intensive commodities (e.g. steel) in domestic emission trading schemes is an effective and feasible approach towards restoring the carbon price signal in these sectors, without damaging competitiveness. It has been delivered by a multidisciplinary, international team of researchers from a number of institutions, representing various fields (EU law and institutions, climate policy and economics, energy market and infrastructure policy and economics).

Findings:

Emission trading was designed two decades ago as a platform focused on large scale installations. The focus of debate and analysis rested on emission reductions from these installations through efficiency improvements and fuel shifting.

The Paris Agreement on climate change agreed in December 2015 requires a new industrial strategy leading to innovations and investments into large scale emission reductions. This requires a broader portfolio of mitigation actions with innovative production processes, new materials and more intelligent and efficient use of materials.

Emission trading can provide the economic incentives and financial resources for this strategy if its reach extends beyond the producers and also users of materials in industry, commerce and final households can participate and benefit.

Using the politically agreed emission budget as a starting point, the emission trading platform needs to allow for efficient sharing of this overall budget amongst industrial producers and consumers.

- Material producers are responsible for inefficiency of production of materials: If their emissions are above those of best available technology, they need to acquire allowances. They can benefit if they beat this benchmark with break-through technologies by selling spare allowances.
- Consumers are responsible for emissions caused by their demand for materials: every additional tonne triggers the primary production of this material. Consumers need to pay for the emissions linked to the production of this primary material with best available technology. Consumers can save with more efficient use of materials, or use of lower carbon materials.

This simple principle is already implemented for the power sector in Europe. Power generation in liberalised markets passes on the cost of CO2 certificates to power prices and thus creates incentives and opportunities for consumers. In regulated power markets, like Korea or China, power generation cannot pass on this cost, and consumers are excluded. Therefore their emission trading systems include the consumption of electricity to allow all actors to participate.

For carbon intensive materials, however, a reform is important and necessary. Steel and cement alone account for 38% of industrial emissions, followed by plastics and aluminum. As materials are traded internationally, European producers can only pass a fraction of carbon costs to product prices. Such pass-through is desirable, because it gives industry, commerce and consumers the incentives for efficient material use and innovative lower-carbon materials. Too much pass-through increases however the risk of "carbon leakage", i.e. industries relocating to other parts of the world where there is no emissions trading system or carbon price.

To date, volume and provisions of free allowance allocation have been designed to retain some incentives for efficient material use and substitutes, while avoiding carbon leakage risks. The allocation provisions also determine whether firms incur costs or extra profits from emission trading. These subtle trade-offs explain why allocation has been subject to fierce lobbying and continuous debates since the introduction of emission trading. This undermines the credibility of the scheme and distracts from the development of a shared perspective and implementation of suitable policy mix for transformation.

All these challenges can be avoided with an explicit platform involving consumers of carbon intensive materials, replicating the Chinese and Korean examples for their power sector. Consumers are liable for a consumption charge set at same level as the free allocation to primary producers. The revenues from the charge would then be gathered in national trust funds, providing resources for public co-funding of technology demonstration and early commercialisation of low carbon solutions.

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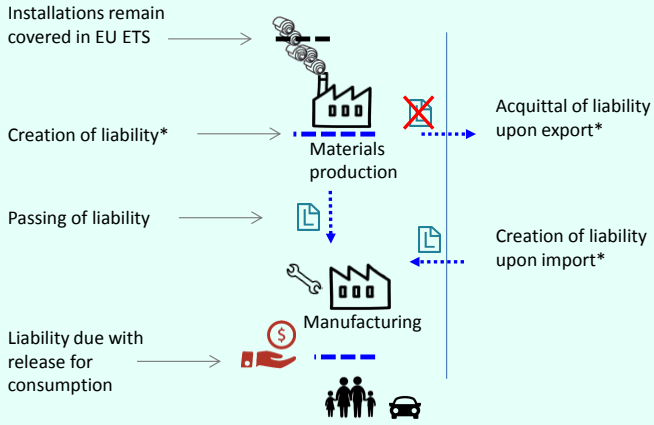

* Based on weight of material times benchmark for material (e.g. steel, clinker)

As the consumption charge targets consumption decisions, the design of free allocation provisions for the ETS only needs to ensure leakage protection. In fact, it has to prevent carbon price pass-through to avoid double charging of consumers. This simplifies allocation to materials producers to the full benchmark of best available technology and recent production volumes.

Implementation details:

Analysis of the cement, steel and pulp and paper sector revealed that to date progress on innovation and investment towards climate action has been very limited. This has been the starting point for our analysis of reform options for emission trading to create incentives for intermediate and final consumers, cost allocation for break-through technologies, and resources that suffice to fund breakthrough technologies.

Benchmarks are the basis for the sharing of responsibility between material producers and users. They are widely applied in Europe and Asia. Stakeholder consultations held in Seoul and Bejing as part of this project identified opportunities for international cooperation.

Administration of the extension of emission trading towards consumers requires additional efforts for public and private actors. These can be limited by (i) building on existing reporting and monitoring mechanisms (ii) reduced compliance requirements reflecting limited fraud opportunities of a mechanism that does foresee payments (iii) harmonized implementation across Europe (iv) de-minimis rules that limit coverage to 20% of product flows that comprise 85% of carbon embedded in materials.

The approach is on the good side of WTO law, as imported materials are not subject to charges in excess of those applied to equivalent domestic materials. The review of international experiences also points to similar initiatives in other regions and confirmed the shared interest to advance regional policies that support producers and consumers in tackling carbon emissions. At the European level the extension of the EU ETS based on the same carbon price, benchmark and principles for use of revenue gathered in national trust funds could be anchored in the ETS Directive.

Complementing project deliverables

Work Package 1 – Report on the Pulp and Paper Sector

Roth, S., L. Zetterberg, W. AcWorth, H-L Kangas, K. Neuhoff and V. Zipperer (2016). "The Pulp and Paper Report - Sector analysis for the Climate Strategies Project on Inclusion of Consumption in Carbon Pricing", Climate Strategies Overview Paper, May 2016.

Work Package 2 – Quantification of the carbon content in different trade categories

Pauliuk, S., K. Neuhoff, A. Owen and R. Wood (2016). Quantifying Impacts of Consumption Based Charge for Carbon Intensive Materials on Products. DIW Discussion Paper 1570.

Work Package 3 – International Comparison of Carbon Pricing Mechanisms

Munnings, C., Y. G. Kim, O. Sartor, K. Neuhoff, and W. Acworth (2016). "Experience with Pricing Carbon Consumption", RFF Discussion Paper (*forthcoming*).

Work Package 4 – Administrative implications of IoC

Ismer, R., M. Haussner, K. Neuhoff, W. AcWorth (2016). Inclusion of Consumption into Emissions Trading Systems: Legal Design and Practical Administration. Climate Strategies Overview Paper, May 2016

Work Package 5 – Legal Analysis in the context of EU Law

Ismer, R., & Haussner, M. (2015). "Inclusion of Consumption into the EU ETS: The Legal Basis under European Union Law". *Review of European, Comparative & International Environmental Law*.

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