**Session 28: International carbon flows: Sustainability, trade and climate change**

**Sub-theme II: Trade in natural resources**

**Moderator**

Dr Graham Sinden, Senior Strategy Manager, the Carbon Trust, United Kingdom

**Speakers**

Ms Doaa Abdel Motaal, Counsellor, Office of the Director-General, WTO

Ms Diane Simiu, Head of the Carbon Markets Division, Directorate General for Energy and Climate/Ministry for Ecology, Sustainable Development, Transport and Housing, France

Mr Thierry Berthoud, Managing Director, Energy and Climate, World Business Council for Sustainable Development (WBCSD)

Mr Vicente Yu, Programme Coordinator, Global Governance for Development, South Centre

**Organized by**

The Carbon Trust

**Report written by**

Dr Graham Sinden, Senior Strategy Manager, the Carbon Trust

Tuesday, 20 September 2011 – 16.15-18.15

**Abstract**

Current approaches to greenhouse gas (GHG) emissions reduction are based on the assumption that emissions are the responsibility of the producers. However, an alternative view is that the responsibility for GHG emissions lies not with the producer, but with the final consumer of the products. This point of view could open up new opportunities for developing policies and activities to minimize supply chain GHG emissions. In addition, there is increasing interest in the implications of embodied carbon flows on domestic environmental policy.

**1. Presentations by the panellists**

*(a) Dr Graham Sinden, Senior Strategy Manager, the Carbon Trust*

Dr Sinden began by introducing the topic. The world currently views CO2 emissions from a production perspective, meaning that responsibility for emissions lies with the country that produced the emissions. This is the approach taken by most national emissions assessment processes, and by international frameworks such as the Kyoto Protocol, the UN Framework Convention on Climate Change, and the European Union Emissions Trading System (EU ETS). However, by taking a consumption perspective, responsibility for emissions arising from the manufacture of products is allocated to the countries that ultimately consume the goods and services.

Dr Sinden went on to say that the link between these two viewpoints is the trade in goods and services that occurs between countries, and the carbon intensity of that trade. The emissions that occur during production are “embodied” in goods and services that are traded internationally. Around 25 per cent of global CO2 emissions arise from the flow of goods and services across international borders for consumption in a different region.

For some countries and regions, the viewpoint chosen can a significant difference to measurement of its national emissions. For the United Kingdom, an assessment of emissions based on consumption is 34 per cent higher than when based on production, while a consumption view of EU emissions is around 23 per cent higher than the production view on which the EU ETS is based. Other countries tend to be net exporters of emissions embodied in trade: the net export of emissions from China is equal to around 23 per cent of the annual emissions produced within China. Overall, there is a tendency for developed countries to be net importers of emissions and for developing countries to be exporters.

In a world of universal emissions pricing, these flows might not cause concern. Indeed, they may even be beneficial, as trade patterns would in part reflect the different emissions intensities of production in different regions, particularly for emissions-intensive goods. However, the world does not currently have a universal emissions pricing system, and for regions such as the EU that are seeking to reduce emissions through pricing mechanisms, current production-based approaches to emissions assessment limit their ability to address emissions. Because of this, additional mechanisms are being considered. In the absence of a “global deal” on emissions pricing, the practicality of such responses and their impact on emissions are likely to be a focus for the evolution of emissions pricing schemes.

*(b) Ms Doaa Abdel Motaal, Counsellor, Office of the Director-General, WTO*

Ms Motaal argued that every once in a while, in any debate, new evidence emerges to challenge our thinking, and it can even provoke a turning point in the debate. This is the point that the debate on trade and climate change has reached with the new evidence presented by Peters and Hertwich (Peters, G.P. and Hertwich, E.G., 2008. *CO2 Embodied in International Trade With Implications for Global Climate Policy.*  42 Environ Sci Technol,  p1401-1407) and Caldeira and Davis (Caldeira, K. and Davis, S., 2011. *Accounting for Carbon Dioxide Emissions: A Matter of Time*. PNAS Early Edition, available at [www.pnas.org/](http://www.pnas.org/)). By looking at emissions consumed rather than emissions produced, these authors discover that the developed world has actually increased its emissions in the past couple of decades instead of reducing them.

Ms Motaal explained that this research demonstrates that the reductions called for by the Kyoto Protocol have found themselves negated by the emissions that the developed world has imported from other regions. While unilateral trade measures in the developed world have been held back, so far, on the grounds that no evidence has yet emerged of carbon leakage, the evidence advanced by Hertwich, Peters and others demonstrates that the world may have engaged in no more than a process of "emissions offshoring". This evidence needed to be brought to the attention of trade negotiators, and to be contextualized in the realm of the ongoing trade and climate change debate. It could very well change the discourse on the need for border adjustment measures, with such measures becoming necessary to secure the integrity of the emissions reductions that the developed world makes – a change in the discourse which Ms Motaal argued that the developing world needs to heed.

Ms Motaal concluded that, while there may never be a perfect methodology for measuring the emissions embodied in imports, a way must be found to apply border measures if this is the only way to secure meaningful action on climate change.

*(c) Ms Diane Simiu, Head of the Carbon Markets Division, Directorate General for Energy and Climate/Ministry for Ecology, Sustainable Development, Transport and Housing, France*

The European Union Emissions Trading System seeks to reduce greenhouse gas emissions by applying a cost of CO2 for domestic emitters. In the absence of comparable efforts by other countries, this focus on domestic emissions risks undermining the environmental benefits arising from a reduction in European emissions, as it does not account for the emissions in goods imported into Europe. The additional costs for domestic European producers may also lead to the relocation of some production to other countries where emissions pricing is absent.

The EU Emissions Trading System Directive provides the possibility of introducing a Carbon Inclusion Mechanism (CIM). Its aim is to prevent carbon leakage by ensuring that installations located within the EU remain on an equal footing with those in third-party countries, thereby preserving the environmental integrity of EU efforts. The CIM proposed by France is based on the principle that the importer surrenders a volume of allowances equivalent to that which a European manufacturer has to acquire on the market for the same quantity of product. If no information is available on the carbon intensity of an imported product, a default approach could be adopted, whereby the amount of allowances to be surrendered by the importer would be the same as that which the average European producer would have had to purchase on the market. Importers would have to provide proof that products sold in Europe are more carbon-efficient that the European average and would then only surrender a volume of allowances proportional to the differences between their specific emissions and the European benchmark.

At EU borders, customs services can process the CIM using the information entered in the Single Administrative Document (SAD), the harmonized customs declaration common to all member states. The CIM would not require importers to complete any additional customs formalities.

Satisfactory sectoral agreements are the best way to avoid carbon leakage. If it is not possible to conclude such agreements, or if a country refuses to participate in them, then the CIM will aim to preserve the environmental integrity of the EU’s emission reduction efforts by creating incentives for importers to reduce their carbon intensity, while ensuring equal treatment between EU producers and importers. It may not be appropriate for all sectors, but can fit alongside other tools to combat carbon leakage.

*(d) Mr Thierry Berthoud, Managing Director, Energy and Climate, World Business Council for Sustainable Development (WBCSD)*

If the same price was applied globally to CO2 emissions, international carbon flow could simply be part of the flow of raw materials and goods traded, without creating a trade distortion. The most common representation of a carbon price is the market price of carbon in systems such as the EU ETS. The main global mechanisms leading to an explicit carbon price are cap and trade regime, carbon taxes, baseline and credit approaches, and project mechanisms. Implicit carbon prices derive from alternative energy standards, emission performance standards, efficiency standards, and social commitments to reduce emissions. Within countries, and from country to country, all these mechanisms interact with each other.

Markets also play a key role in homogenizing the price of carbon. However, it appears that, over time, the various national policy approaches are likely to create a global price on carbon. Some argue that the disparity in carbon prices in the various parts of the world is creating international trade distortions. If so, recourse could be made to existing tools such as anti-dumping provisions. However, developing specific means to regulate the flow of GHG emissions embedded in the flow of raw materials, manufactured products and services is likely to add a new layer of constraints which will significantly distort the free trade of goods.

A global level playing field for carbon should not be based on new trade barriers but on the proactive will of policy-makers to put in place the policy frameworks to allow competitive markets to deliver goods as well as CO2 reductions at the economic optimum.

*(e) Mr Vicente Yu, Programme Coordinator, Global Governance for Development, South Centre*

Using consumption-based emissions accounting could be a more accurate and fairer way of determining the responsibility for greenhouse gas emissions globally, as at the root of the issue lie the current unsustainable levels of consumption of carbon-embedded goods globally and the ways of distributing this consumption among countries. A consumption-based framework shows that the consumption in developed countries of carbon-embedded products is a major drivers of increased emissions in developing countries, which manufacture these products for export to developed countries. The stabilization or decrease of emissions produced within developed countries can be correlated quite closely to the increase of exported emissions from developing countries, implying an outsourcing of emissions from developed to developing countries.

In order to address the trend of globally rising emissions, developed countries need to reduce their carbon consumption. However, this could have adverse implications for developing countries that depend on exports to developed countries. More research needs to be undertaken on these adverse implications; to address them, international cooperation arrangements would be necessary to support a shift in developing countries, away from producing carbon-intensive products for export to developed countries, and towards more diversified production using less carbon-intensive processes to cater to domestic and regional consumption.

**2. Questions from the audience**

Q: Is it fair for producers in developing countries to bear the burden for emissions associated with manufacturing products consumed in industrialized countries?

A: By allowing European producers and importers to pass through the cost of carbon allowances in the price of their products, it is European consumers that pay for the environmental externalities with the manufacture of all the goods they consume, whether the goods are produced in Europe or elsewhere.

Q: Is the verifier role dominated by Western businesses?

A: There are a number of large companies in this space, but many of these have operations in developing countries associated with the Clean Development Mechanism.

Q: How is border pricing for complex finished goods implemented?

A: As the EU ETS does not attach a price to the production of complex goods, their importation at the border could be outside the scope of a border mechanism. However, domestic European producers of complex goods would still experience a carbon price for the European raw materials and electricity they use.

Q: Are there any studies on the long-term effects of such border measures on the producers of these traded goods, such as China?

A: The long-term effects depend on the product, the sector, and how important this sector is to the exporting country. There are studies that have looked into this question for specific sectors such as steel.

Q: Could an international carbon price compensate for a lack of commitment by countries to reducing emissions?

A: Today there are many carbon prices, arising through direct carbon pricing, policy, regulation and non-carbon taxes. A wide range of actions can contribute to carbon pricing.

Q: Does the carbon flows concept fairly represent the exported emissions from a country?

A: The data presented here provide a carbon value added perspective – they represent the emissions produced and consumed in each country, including in intermediate countries.

Q: We need to change how we live our lives, and how we can live our lives with less emissions: the accounting question only addresses the second issue.

A: Correct accounting is necessary to ensure that the action being taken is actually delivering emissions reduction: without a consumption accounting perspective, it is not possible to determine the overall impact of national actions.

**3. Conclusions**

The session covered a wide range of issues associated with embodied emissions in trade, including the significance of international flows of emissions between producer and consumer countries, and the policy and pricing issues related to addressing global and country-level emissions that this raises. Border adjustment measures were a focus of the discussion, and while they were generally not viewed as an optimal solution to addressing different emissions pricing approaches, in the absence of a global approach they are likely to be considered further. At the same time, it was argued that some wider regulatory actions create an implied cost of emissions.