Low carbon society workshop, 14th February 2008
Group 4 – barriers and opportunities – approaches to sensitive LCS sectors
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The Stern Review on the Economics of Climate Change provided a clear case for urgent and strong action on climate change, by demonstrating that the costs of taking action would be significantly lower than the costs of climate change left unabated.

However, a key barrier to action on climate change and making the transition to a low-carbon, climate resilient economy is the effect of imposing constraints on emissions – whether by emissions trading, carbon taxation or regulation – on sectors that are highly-carbon or energy intensive and highly internationalised in developed countries before such action is taken in developing countries. Might these sectors face such high costs that they relocate to areas where emissions constraints are less stringent? The Stern Review found that these negative competitiveness effects would be limited to a very few, identifiable sectors, and even when identified, the potential for carbon leakage was limited further by the effect of other cost differentials. Recent pan-European work by "climate strategies" has reinforced these findings. However, more evidence for non-EU countries is needed.

On the other hand, new markets are expected to be created by taking action on climate change. The Stern Review suggested that investment in low-carbon electricity sources could be worth over $500bn a year by 2050. Bringing in credible and early policies can create these new opportunities –with the right signals, firms can move ahead to capture markets and flourish.

Therefore, the question for international policy is what tools can help balance these barriers and opportunities? Three alternatives are usually proposed to address competitiveness and carbon leakage concerns. The first brings in wider participation than purely nationally-based policy – e.g. through sectoral approaches/ agreements, the second penalises firms outside current nationally-based policies – e.g. through border adjustment mechanisms (BAMs), and the third provides exemptions to general climate policies – e.g. lower carbon taxes, or free allocation under emissions trading[1].

BAMs have some short-term logic: they make operators from all countries price carbon equally; could be interpreted as an attempt by countries to reduce the carbon footprint of their entire basket of consumption; and could be applied to particular vulnerable sectors. But they can severely challenge future cooperation by being seen to punish other countries, and would not really be considered to be a long-term, first-best solution to climate change, especially as they may not lead to a reduction of global emissions (they act as a tax and could be set at an inappropriate level).

On the other hand, free allocations, though they don't necessarily distort the carbon price signal from emissions trading schemes, are inefficient as they do not have any long-term impact on the conditions that lead to carbon leakage, and auctioned revenues can have more productive applications in the rest of the economy.

In comparison to penalties and exemptions, a sector-based approach that, *inter alia*, covers installations in the large energy-intensive sectors from all or major-emitting countries could represent a positive way forward. But, to be most cost-effective compared to the alternatives, they will need to be robust enough to send comparably strong signals to industries globally (as those in the EU) and consistent with existing policies such as binding national caps and emissions trading. They can also be tailored to make the most of wider opportunities (e.g. if they give a clear signal through stringent caps, this will encourage early innovation across sectors) and they can be designed to upscale and target technology transfer to developing countries. Progress on such approaches can be made within and outside of wider international agreement, and countries and industries are already considering how to implement them.

The world will need to work strongly and quickly on sectoral approaches if these potential merits – especially as an alternative to other two proposals – are to become a reality. But doing so will ensure the world is seen to be doing something to create a level playing field – to help in this transition to a low-carbon, climate-resilient economy.

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[1] Though the economic implications of exemptions to carbon taxes and auctioning under emissions trading are quite different.