

Structuring CDM to Induce All Regions to Participate in Kyoto

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A non-Annex I country's decision to support the Kyoto Protocol obviously depends on its current economic position. Specifically, oil-exporting countries would be harmed dramatically if the Annex I regions agree to reduce their GHG emissions because of the reduction in demand for their oil exports. On the other hand, non-Annex I energy-importing countries that produce and export significant amounts of energy-intensive goods could benefit greatly because of lower world oil prices and a comparative advantage in producing energy-intensive goods. This leads to the question: Are there ways to induce the energy-exporting Annex I countries to sign on while not removing the incentive for other non-Annex I countries to participate?

In this paper, we explore possible mechanisms to induce non-Annex I regions to participate in the Kyoto Protocol. We develop a CDM system to keep welfare in Annex I regions at least as high as it is under Annex I trading while maintaining welfare in non-Annex I regions at baseline levels. This analysis uses a new version of the multi-sector, multi-region trade (MS-MRT) model to analyze several scenarios for implementation of CDM, including a range of possibilities for how the flexibility mechanisms in the Protocol might be utilized. For realism, all CDM trades are subject to a transaction cost. In addition to this, we look at different tax rates on CDM trades and the distribution of these revenues among countries. A range of economic impacts on all countries, including emissions trading between non-Annex I and Annex I regions, carbon prices, leakage, and welfare under different assumptions about the CDM is examined. Comparing these results across countries highlights which countries are disproportionately effected and need to be compensated with CDM tax revenues. Specifically, we investigate whether there is a CDM tax and distribution system that would induce all non-Annex I countries to participate in a global carbon abatement program.