Linkage of Tradable Permit Systems in International Climate Policy Architecture

by **Judson Jaffe** and **Robert N. Stavins**

Overview

Tradable permit systems are emerging as a preferred policy tool for reducing greenhouse gas emissions. Because linking tradable permit systems can reduce compliance costs and improve market liquidity, there is great interest in doing so. This paper examines the benefits and concerns associated with linkage and analyzes the near-term and long-term role that linkage may play in a future international climate policy architecture.

Discussion

There are two types of tradable permits systems: cap-and-trade systems, in which a government issues allowances that firms must obtain to emit greenhouse gases, and emission-reduction-credit systems, in which firms can earn credits by voluntarily reducing emissions. The opportunity to trade allowances or credits within a tradable permit system introduces flexibility and economic incentives that can minimize emission reduction costs within that system. However, absent linkages between systems, some emission reductions required in one system may be more costly than reduction opportunities that remain untapped in another system, leaving cost-saving opportunities unrealized.

Due to the increasingly likely prospect of a world with multiple greenhouse gas tradable permit systems, attention has turned to the questions of whether and how to link these systems. Direct linkages occur when a system's regulatory authority allows firms to use allowances or credits from another system for compliance purposes in its own system. In turn, direct linkages can lead to indirect linkages. For example, cap-and-trade systems can become indirectly linked with one another if each establishes a direct link with a common emission-reduction-credit system, such as the Clean Development Mechanism (CDM).

Key Findings & Recommendations

▹ *Linkages can significantly reduce the cost of achieving global emission targets and can offer other important benefits.* Allowance or credit trading across systems can generate cost savings by allowing higher-cost reductions in one system to be replaced by lower-cost reductions in another system. Linkages can also reduce allowance price volatility by improving market liquidity and can allow for "common but differentiated responsibilities" across systems without increasing the cost of achieving global emission targets.

▹ *At the same time, some linkages can raise legitimate concerns.* For example, direct linkages with other cap-and-trade systems can reduce a country's control over allowance prices in its own system and can lead to automatic propagation of cost-containment measures – banking, borrowing, and safety-valves – from one system to another. Also, linkages with emission-reduction-credit systems may reduce the environmental effectiveness of a cap-and-trade system if the credit system credits emission reductions that are not truly additional.

▹ *In the near term, indirect linkages among cap-and-trade systems through the CDM or some other global emission-reduction-credit system may be most promising.* Direct linkages between cap-and-trade systems may require advanced harmonization of key system design elements because of the automatic propagation of cost-containment measures and other consequences of such linkages. By contrast, indirect linkages between cap-and-trade systems through a common credit system may not require such harmonization. As a result, in the near term, such indirect linkages may be easier to establish than some direct linkages.

▹ *In the near term, linkage may grow in importance as a core element of a bottom-up, de facto international policy architecture.* The European Union Emissions Trading Scheme has already established direct links with systems in neighboring countries, and the Clean Development Mechanism has emerged as a potential hub for indirect links among cap-and-trade systems worldwide. As new cap-and-trade systems appear in countries such as Australia, Canada, and the United States, the network of direct and indirect links will likely continue to spread.

▹ *In the longer term, linkage could play several roles.* A set of linkages, combined with unilateral emissions reduction commitments by many nations, could function as a stand-alone climate architecture. Such a system would be cost-effective, but might lack coordinating mechanisms necessary to achieve meaningful long-term environmental performance. Another possibility is that a collection of bottom-up links may evolve into a comprehensive, top-down agreement. In this scenario, linkages would provide short-term cost savings while serving as a natural starting point in negotiations leading to a top-down agreement. That agreement might continue to use linkage as a means of reducing abatement costs and improving market liquidity.

▹ *A post-2012 international climate agreement could include several elements that would facilitate future linkages.* Such an agreement could establish an agreed trajectory of emission caps or allowance prices, specify harmonized cost-containment measures, and establish a process for making future adjustments to key design elements. It could also create an international clearinghouse for transaction records and allowance auctions, provide for the ongoing operation of the CDM, and build capacity in developing countries. Such an agreement should avoid features that may adversely affect the performance of linkages, such as by encouraging strategic behavior or imposing "supplementarity" restrictions, which require countries to achieve some specified percentage of emissions reductions domestically.

CONCLUSION

In the near term, indirect linkages of cap-and-trade systems via a common emission-reduction-credit system could achieve meaningful cost savings and risk diversification without the need for much harmonization between systems. In the longer term, international negotiations could establish shared environmental and economic expectations that would serve as the basis for a broad set of direct links among cap-and-trade systems. This progression could promote near-term goals of participation and cost-effectiveness while helping to build the foundation for a more comprehensive future agreement.

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ABOUT THE HARVARD PROJECT ON INTERNATIONAL CLIMATE AGREEMENTS

The goal of the Harvard Project on International Climate Agreements is to help identify key design elements of a scientifically sound, economically rational, and politically pragmatic post-2012 international policy architecture for global climate change. It draws upon leading thinkers from academia, private industry, government, and non-governmental organizations from around the world to construct a small set of promising policy frameworks and then disseminate and discuss the design elements and frameworks with decision-makers. The Project is co-directed by Robert N. Stavins, Albert Pratt Professor of Business and Government, John F. Kennedy School of Government, Harvard University, and Joseph E. Aldy, Fellow, Resources for the Future. Major funding for the Harvard Project on International Climate Agreements is provided by a generous grant from the Climate Change Initiative of the Doris Duke Charitable Foundation.

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