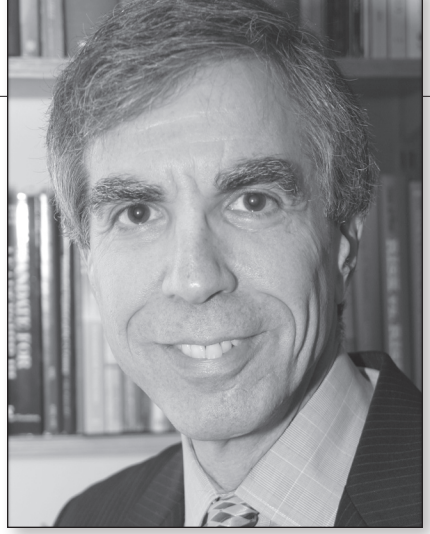

By Robert N. Stavins

# Linking Tradable Permit Systems

A major cap-and-trade system for greenhouse gas emissions is in place in the European Union. Similar systems are being considered in Australia, Canada, Japan, New Zealand, and the United States. A global emission reduction credit scheme, the Clean Development Mechanism, is gradually evolving. The possibility of linking these systems — where the government that maintains one system allows regulated entities to use allowances or credits from other systems to meet compliance obligations — is gaining attention. It appears likely that linking will emerge as a key part of the post-2012 international climate policy architecture.

With support from the International Emissions Trading Association and the Electric Power Research Institute, Judson Jaffe and I have analyzed the opportunities and challenges presented by linking tradable permit systems (available at www.ieta.org/ieta/www/pages/getfile.php?docID=2733). In December, we presented our findings at the 13th Conference of the Parties of the Framework Convention on Climate Change in Bali, Indonesia.

Tradable permit systems fall into two categories: cap-and-trade and emission reduction credits. Under cap-and-trade, or CAT, total emissions of regulated sources are capped and the sources are required to hold allowances equal to their emissions. Under a credit system, entities that voluntarily undertake emission reduction projects are awarded credits that can be sold to participants in CAT systems. By broadening markets for allowances and credits, linking increases the liquidity and improves the functioning of markets.

Linking can reduce the costs of the individual systems by making it possible to shift emission reductions across systems. Just as allowance trading within a system allows higher-cost emission reductions to be replaced by lower-cost reductions, trading across systems allows higher-cost reductions in one system to be replaced by lower-cost reductions in another.

Along with the savings it can offer, linking has other implications that warrant serious consideration. Under some circumstances, linked systems collectively will not achieve the same level of emission reductions as they would absent linking. This can result either from a link's impact on emissions under the linked systems, or from its impact on emissions "leakage" from those systems.

*Linking increases the liquidity and improves the functioning of markets*

Linking also has distributional impacts across and within systems. And linking can reduce the control that a country has over the impacts of its tradable permit system. In particular, when a domestic CAT system is linked with an external CAT system, decisions by the government overseeing the external system can influence the domestic system's allowance price, distributional impacts, and emissions.

Importantly, trading brought about by unrestricted links between CAT systems will lead to the automatic propagation of certain design elements, including: offset provisions and linkages with other systems; banking and borrowing; and safety-valve provisions. If these provisions, sometimes characterized as cost-containment measures, are present in one of the linked systems, they will automatically be made available to participants in the other.

In the near-term, some links will be more attractive and easier to establish than others. Given the design-element propagation implications of two-way links between CAT systems, to facilitate such links it may be necessary to harmonize some elements. And in some cases, it may be necessary to establish broader international agreements governing aspects of the design of linked CAT systems beyond mutual recognition of allowances.

Whereas some two-way links between CAT systems may thus take more time to establish, in the near-term one-way links between CAT and credit systems likely will be more attractive. A one-way link with a credit system may offer a CAT system greater cost savings than a two-way link with another CAT system. Also, one-way links can only reduce allowance prices in the CAT system, giving a government greater control than if it established a two-way link with another CAT system. The additionality problem — whether reductions of similar size would have taken place anyway — is an important concern associated with such links, but it can be managed, to some degree, through the criteria established for awarding or recognizing credits.

If emerging CAT systems link with a common credit system, such as the Clean Development Mechanism, this will create indirect links among the CAT systems. Through these indirect links, such one-way linkages can achieve some and perhaps much of the near-term cost savings and risk diversification that direct two-way links among CAT systems would achieve. And they can do this without requiring the same foundation that likely would be needed to establish direct two-way links, such as harmonization of cost-containment measures.

**Robert N. Stavins** *is the Albert Pratt Professor of Business and Government at the John F. Kennedy School of Government, Harvard University, and Director of the Harvard Environmental Economics Program. He can be reached at robert_stavins@harvard.edu.*