

MIT analysis shows how cap-and-trade plans can cut greenhouse emissions

November 13 2008

Researchers at MIT's Center for Energy and Environmental Policy Research have produced a report concerning key design issues of proposed "cap-and-trade" programs that are under consideration in the United States as a way of curbing greenhouse gas emissions. The first contribution of the three-part study found that, based on an examination of the European Union's system and of similar U.S. programs for other emissions, such a program can indeed be effective in reducing emissions without having a significant economic impact.

"The European experience confirms much of what has been learned from similar U.S. systems for other emissions, namely, that cap-and-trade systems can be constructed, that markets emerge to facilitate trading, that emissions are reduced efficiently, and that the effects on affected industries are less than predicted," said A. Denny Ellerman, the study's lead author and a senior lecturer in the MIT Sloan School of Management.

The study found that the most controversial aspect of the European program was how to allocate the permitted emissions levels to different producers. Initial free allocation of allowances, they found, was the necessary price for gaining political acceptance, as it has been in U.S. systems. Over time, the clearly established trend in the E.U. is to phase out the free allocation of permits in favor of auctioning them.

The second part of the report looked at mechanisms that can be used to control the costs that will be imposed on power producers as a result of

implementing a cap-and-trade system. Several alternatives were analyzed, including such things as a "safety valve," banking and borrowing of allowances, and renewable portfolio standards. Rather than a single best choice, the study found that different mechanisms work best for addressing uncertainties associated with long-term, short-term and start-up costs.

The report's third section examined the relationship between state and federal regulations on greenhouse gas emissions. With no federal policy now in place, many states are moving forward with their own initiatives, which range from commitments to reduce greenhouse gases to a regional, multi-state cap-and-trade program slated to begin in 2009.

While federal legislation is expected in the next few years, it is unclear how it will define the relationship between a federal cap-and-trade program and other state or regional initiatives. The report analyzes the economic and environmental impacts of the range of possible interactions between the federal program and state or regional programs.

Differences in the abatement costs among states can create economic inefficiencies that make achievement of the climate goal more costly than it need be. This inefficiency can be avoided by either federal preemption of duplicative state programs, the authors found, or by a "carve out" of more demanding state programs from the federal cap with linkage.

Source: Massachusetts Institute of Technology

Citation: MIT analysis shows how cap-and-trade plans can cut greenhouse emissions (2008, November 13) retrieved 20 April 2024 from <https://phys.org/news/2008-11-mit-analysis-cap-and-trade-greenhouse-emissions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.