THE BOTTOM LINE ON...

Answers to frequently asked questions about climate and energy policy **Issue 9**

WORLD RESOURCES INSTITUTE

INTERNATIONAL TRADE

By encouraging clean technology deployment and imposing new costs on commonly traded commodities, climate policy would have significant impacts on international trade flows. This document answers basic questions about climate policy and its implications for the international trade of goods.

How will climate policy impact American trade competitiveness?

Over the coming decade, countries around the world will adopt a variety of climate policies to impose costs for greenhouse gas (GHG) emissions. Since these policies will vary in form and stringency, the costs they impose on manufacturers will not be uniform across all nations.

Although a global patchwork of climate policies could disadvantage specific American industries, policy leadership would provide the U.S. economy with an early signal for rising fossil fuel costs and supply constraints, potentially improving future competitiveness of domestic industries. A global, carbon-constrained future will demand a shift to low-carbon energy technologies and business models. Past experience in renewable energy and efficient vehicle technologies has seen companies profit from strong regulatory environments at home to build competitive advantage abroad. Uncertain domestic policy will not serve companies well in the medium to long term, as other countries will build markets for low-carbon products and services. Such concerns have led many major companies to call for strong mandatory U.S. climate policy.

Nevertheless, specific industries in countries likely to experience relatively higher compliance costs are concerned that they will be placed at a disadvantage to competitors in countries with relatively lower compliance costs. They argue that aggressive climate policy could contribute significantly to factors that lead to the "offshoring" of jobs and relocation of industry to countries with lower standards and production costs.

Could the relocation of industries lead to a global rise in emissions?

If global supply chains shift manufacturing from countries with stringent policies to lower cost countries, global emissions would rise through a process commonly referred to as emissions "leakage." While U.S. climate policy would reduce domestic emissions, the net environmental effectiveness of the policy may be undermined if emission sources simply migrate to countries without absolute caps. In order to prevent this, environmentalists have frequently supported the international harmonization of environmental standards and enforcement to minimize differences in compliance costs across nations.

Which industries will be most sensitive to differentiated international approaches to climate policy?

The degree to which a particular industry is adversely impacted by higher relative costs of compliance with climate policy depends on three variables:

- *Energy intensity of production*: The impact of rising energy prices on a given industry is determined, in part, by how significant energy is as a share of total production costs. For relatively energy-intensive industries like steel and cement, energy purchases account for between 10 and 20 percent of total costs. In contrast, energy accounts for less than 1 percent of total costs for transportation equipment and electronics manufacturing.
- *Potential for efficiency improvements or fuel switching*: An industry's ability to improve GHG efficiency of production through technological improvements or fuel-switching determines the extent to which increased energy prices translate into higher overall production costs.
- *Availability of substitutes*: The availability of substitutes—either the same good from a foreign producer or a different but interchangeable good from any producer—minimizes a firm's ability to pass along costs to consumers and makes it more sensitive to increased production costs.

In general, these metrics indicate that the most adversely impacted sectors include paper, chemicals, nonferrous and ferrous metals, and nonmetallic mineral products (e.g. glass and cement).

What could the economic impacts be?

Most economic analysis indicates that, in the absence of mechanisms to address relative differences in compliance costs (see page 2), vulnerable industries would face some pressure to relocate to nations with less stringent climate policies. Resources for the Future, an independent research organization, is undertaking an effort to quantify the impact of U.S. climate policy on output from these industries through modeling and econometric analysis. Two initial studies, using different approaches, find that imposing a $10 per ton charge for CO_2 in the United States (but not in other countries) would result in a 0.5 to 6 percent decline in domestic output from these industries.

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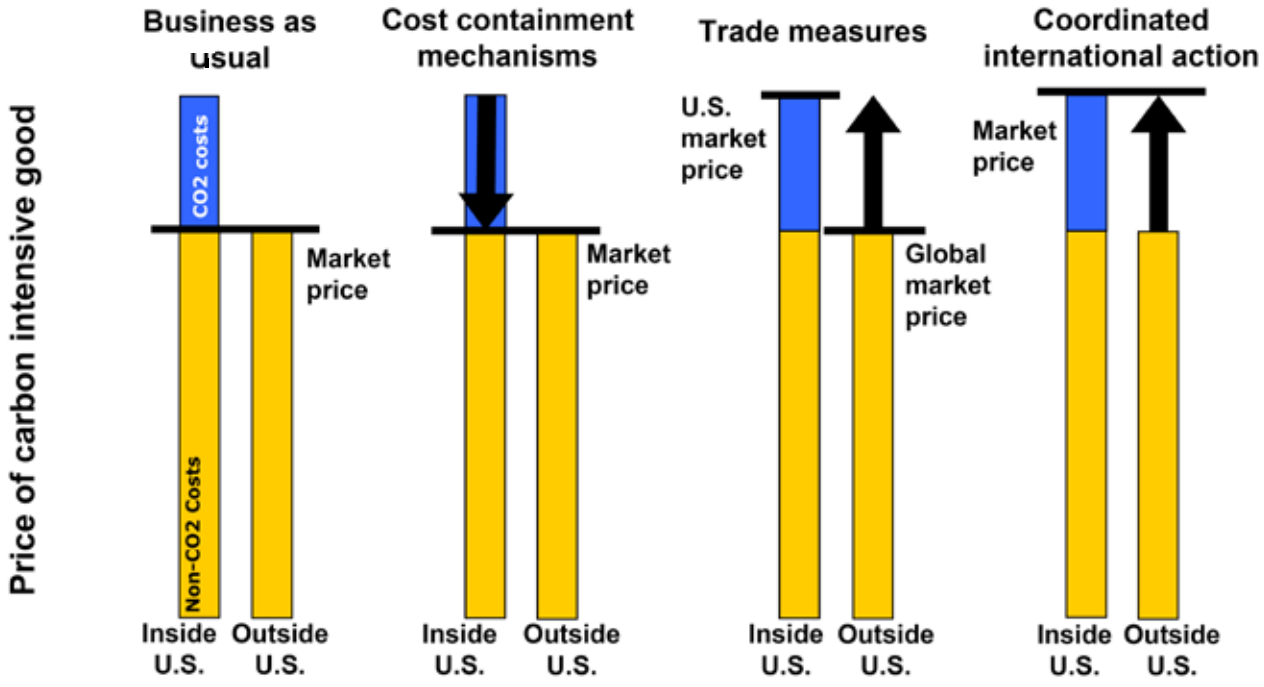
What policies could help harmonize compliance costs across nations?

The principal policy options currently under consideration to promote the international harmonization of compliance costs for carbon-intensive industries can be divided into three types:

- *Cost containment mechanisms* aim to reduce the pressure on carbon-intensive industries by limiting the cost of complying with climate legislation. The most direct methods proposed have sought to use allowance allocations (see Issue 1 of WRI's *Bottom Line* series) to reimburse exposed sectors for the costs of complying with the legislation. Although such policies could shield industries from newfound competitiveness concerns, they must be carefully structured to maintain incentives for emissions mitigation and avoid overcompensation.
- *Trade measures* do not limit costs on domestic producers, but instead apply similar costs to competing companies in other countries through the treatment of imports. Although this policy mechanism found support in the 110th Congress, potentially significant flaws have been overlooked. For example, border price adjustments of imports would negatively impact downstream manufacturers such as the automobile industry by increasing costs of raw materials. Furthermore, these policies would do little to protect important export markets, since adjustments would only apply to the U.S. market. Finally, trade measures may damage important international negotiations to create a multilateral agreement to address climate change (see Additional References).
- *Coordinated international actions* seek to reduce the pressure on carbon-intensive industries by encouraging major trading partners to impose similar costs on their companies directly. Although widely seen by environmentalists and economists as an optimal mechanism for addressing competitiveness concerns, perfect coordination is unlikely in the immediate future, so some other mechanism may be necessary for a transitional period.

Additional References

- WRI's U.S. Climate Policy Resources: http://www.wri.org/climate/usclimate
- WRI / Peterson Institute: *Leveling the Carbon Playing Field: International Competition and US Climate Policy Design* http://www.wri.org/publication/leveling-the-carbon-playing-field
- WRI / Peterson Institute: *Policy Options for Addressing Competitiveness Concerns* (forthcoming)
- Carbon Trust: *EU ETS Impacts on Profitability and Trade: A Sector by Sector Analysis* http://www.carbontrust.co.uk/publications
- Resources for the Future: *Competitiveness Impacts of Carbon Dioxide Pricing Policies on Manufacturing* http://www.rff.org/rff/Publications/upload/31811_1.pdf



Adapted from "Cutting Carbon in Europe", April 31, 2008 presentation by Michael Grubb and Thomas Counsell

Figure 1. Potential "leveling" mechanisms to promote international harmonization of compliance costs.

This series is a product of WRI's climate and business engagement projects including the Green Power Market Development Group and the U.S. Climate Business Group. Through these projects, WRI works with leading companies to pioneer low-carbon business strategies and advance markets for renewable energy.