

Overview of Competitiveness Concerns in U.S. Cap-and-Trade Climate Policy Deliberations

1. What is purpose of a cap-and-trade climate policy?

A cap-and-trade policy establishes a market price for permission to pollute the atmosphere with 1 ton of carbon dioxide, or its equivalent in the form of another greenhouse gas. The explicit purpose of the policy is to establish a price signal for every producer and consumer of fossil fuels that communicates the full cost of reducing emissions to meet the limit of a cap on pollution that declines every year.

As a result, a price on carbon is *intended* to increase the cost of delivery for every service or product that uses fossil fuels, and similarly, to raise the cost of consumption of those goods and services. Under a declining cap that generates a rising carbon price, producers and consumers will eventually face a decision point at which it is more profitable to reduce greenhouse gas emissions than to pay for additional pollution allowances.

2. What concern does a cap-and-trade climate policy raise for “competitiveness”?

Some of goods are global commodities traded at prices that would not necessarily be affected by a U.S. carbon price. Examples include commodities for which prices are established through international trade and reported by the United Nations Conference on Trade and Development, the World Bank, and various private market intelligence firms.

Among them, manufacturers of energy-intensive goods will incur the largest proportional increase in the cost of production. If customers can easily substitute their supply with imported metals and raw materials, then domestic producers may not be able to pass on the additional cost of greenhouse gas permits. This challenges both the profitability of the domestic manufacturers and the purpose of the cap-and-trade policy.

3. How does the competitiveness challenge cause “leakage” of jobs and emissions?

With relatively lower profit margins, companies that manufacture these global commodities may choose to close facilities in the U.S. as customers substitute with foreign sources of supply. As a result, the country would lose jobs and the world would not gain any real reduction in greenhouse gas emissions, undermining the purpose of an effective climate policy.

In order to meet greenhouse gas reduction targets, either the energy-intensity of production or the rate of consumption must decline for *all* energy-intensive goods. “Leakage” of greenhouse gas emissions from under a U.S. cap can be detected if domestic production of energy-intensive global commodities declines faster than domestic consumption of those goods.

4. What types of goods are likely to be affected by competitiveness concerns?

The number is *relatively limited*. The final determination would involve a periodic regulatory review of statistics that characterize:

- energy intensity of production (e.g. energy costs as a proportion of shipment),
- extent of international competition (e.g. imports and exports as a share of domestic consumption),
- ability to pass additional costs to customers (e.g. relationship of domestic prices to global commodity prices), and
- potential for leakage (e.g. net increase in imports in response to higher energy prices).

The North American Industrial Classification System (NAICS) categorized all types of economic productivity under a set of production codes. Goods affected by competitiveness concerns would be *sub-categories* of:

- Paper Manufacturing (321)
- Chemical Manufacturing (325)
- Non-Metallic Mineral Product Manufacturing (327) [e.g. glass, cement]
- Primary Metal Manufacturing (331)

Each of these NAICS categories has multiple sub-categories, only a few of which might satisfy the criteria outlined above. Therefore, a formal regulatory and statistical analysis is required to identify specific manufacturing activity, identified by six-digits in the NAICS.

5. How large are the greenhouse gas emissions from these specific manufacturing facilities compared to nation's total?

Small. According to 2000 data for emissions sources, less than 8% of paper manufacturers, 15% of chemical manufacturers, 7% of non-metallic mineral manufacturers, and 28% of primary metals manufacturers would even be *subject* to regulation under a cap-and-trade climate policy.¹ In sum, the total emissions from all of these facilities was reported as *less than 7%* of the U.S. carbon dioxide emissions for that year – *and only a fraction* of these facilities produce goods that would meet the criteria listed above for products that could be affected by the competitiveness concern of unequal carbon prices.

¹ Source: West, T. and Pena, N. (2003) "Determining Thresholds for Mandatory Reporting of Greenhouse Gas Emissions," Environmental Science and Technology. Vol 37, No 6. Note: Most legislative proposals for a cap-and-trade climate policy establish the threshold for defining covered entities at 10,000 tons of CO2 per year.

6. Is there a political imperative to address the competitiveness concern in federal climate policy?

Yes, moderate Democrats in the Senate have identified it in a letter to Majority Leader Harry Reid as a priority issue for winning their vote to pass a federal climate policy. In the House of Representatives, the Energy & Commerce Committee has issued a white paper on the topic for public discussion, and it held a four hour hearing on possible remedies in March 2008. The political response to “leaking” jobs in response to a climate policy makes the issue highly sensitive.

7. Would the competitiveness concern be remedied if all major emitting countries took “comparable action”?

The basis of the competitiveness concern is an *unequal price on carbon* for competing energy-intensive manufacturers that operate in different countries. Some representatives of energy-intensive manufacturers have suggested that their industry should receive special treatment under a national cap-and-trade climate policy until major trading partners take “comparable action.” Consternation expressed by industry participants will only dissipate when all face a *comparable carbon price* as a factor in their cost of production.

8. What conditions could lead to a comparable carbon price for all international competitors among energy-intensive manufacturers of global commodities?

Recognizing the commitment to “differentiated responsibilities” expressed by all signatories to the United Nations Framework Convention on Climate Change, it is *highly unlikely* that all will agree to a common price on carbon for every nation’s entire economy anytime soon. However, the limited number of energy-intensive manufacturers and their concentration among major emitters raises the likelihood that a common carbon price could be established for each affected energy-intensive manufacturing industry through an *international sectoral agreement*.

Because stabilizing climate change will require effort and participation by every major source of emissions, companies seeking exceptional treatment under a national cap-and-trade climate policy must be willing to forge an international sector agreement to reduce greenhouse gas emissions. *To emphasize:* It is not sensible to seek exceptional treatment under a national economy-wide cap-and-trade climate policy due to exposure to international competition and then refuse to negotiate a global economy-wide greenhouse gas reduction policy for the sector.

9. In the *absence* of an international sectoral agreement, what interventions could level the field of competition for companies operating in countries with a carbon price?

- A. **Exemption.** All eligible energy-intensive manufacturers affected by the competitiveness concern would pay nothing for greenhouse gas pollution and face no requirements for emissions reduction.
- B. **Trade measures (border taxes, import allowance requirements).** Energy-intensive goods that are (a) subject to the competitiveness concern (see #4 above) *and* (b) sourced from countries that had not yet taken “comparable action” to the U.S. on climate change would be required to pay a fee equal to the current carbon price multiplied by the carbon emitted in the process of producing the imported goods.
- C. **Output-Based Rebates.** All eligible domestic energy-intensive manufacturers would receive a rebate for their cost of compliance with the cap-and-trade policy based on their actual volume of production and the industry best practice (or average) carbon intensity of production.

10. What challenges would border taxes face in addressing competitiveness concern?

Because U.S. firms are competing mostly with “cleaner” countries, trade measures may not provide intended economic relief to domestic industries adversely affected by U.S. climate change policy.² The United States imports carbon-intensive goods largely from Canada and the European Union - countries that emit less CO₂ than the U.S. China and India, the primary targets of U.S. trade measures, are not large suppliers of carbon-intensive exports to the United States.³

U.S. manufacturing firms that *consume* imported energy-intensive goods (such as steel for automobiles and appliances) are put at a disadvantage with their competitors. Imposing a shadow price of carbon on imported energy-intensive goods may raise the price of Chinese steel relative to U.S. steel, but it would lower the price of Chinese automobiles relative to U.S. automobiles.

Trade measures that penalize imports to the U.S. would do little to support competitive U.S. access to export markets, the main source of growth in global demand for carbon-intensive goods.

Imposing a carbon price on imported energy-intensive goods from some countries and not others could result in more imports from countries that have taken action on climate change, which

² All but the last paragraph in this section is sourced from a book on this topic: Houser, T. (2008) Leveling the Playing Field. Peterson Institute for International Economics: Washington, D.C.

³ In 2005, China accounted for less than 10 percent of US carbon-intensive imports except cement: 7 percent of steel imports; 3 percent of aluminum imports; 4 percent of paper imports; and 14 percent of cement imports. Also, while China accounted for 32 percent of global steel production, it exported only 8 percent of steel produced in 2005, and less than 1 percent was sold to the US market.

could then meet more of their own domestic demand with more imports from countries that have not. The profit from this arbitrage would enrich countries that have taken comparable action.

The proponents claim to have designed proposals that would be compliant with the World Trade Organization. If the provision is contested, however, the proceeding would be a source of friction that could escalate trade disputes, frustrate international climate negotiations, and delay a firm commitment from the U.S. to reduce greenhouse gas emissions.

11. Which interests have championed international trade measures?

American Electric Power (AEP) has been the primary proponent, and its CEO was the lead witness advancing the proposal to Congress in a hearing on competitiveness concerns.⁴ AEP's proposal has received support from the electric power sector's primary labor union, the International Brotherhood of Electrical Workers (IBEW), as well as three other union organizations: United Mineworkers of America; AFL-CIO; and the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers.

12. What is an Output Based Rebate?

As proposed in the Carbon Leakage Prevention Act (HR 7146), an output-based rebate would return to eligible energy-intensive manufacturers a payment directly proportional to the cost of carbon permits acquired to cover pollution generated in the production of energy-intensive goods subject to international trade.⁵ For each unit of output, the rebate for carbon allowance costs would include both direct emissions on-site and indirect emissions from electricity used on-site.

Output-based rebates resolve the contention that energy-intensive manufacturers are closing facilities in the U.S. as a result of a climate policy that puts them at a competitive disadvantage. Energy-intensive manufacturers may continue to choose to relocate in response to *other* competitive pressures, but an output-based rebate would ensure that a federal climate policy is not among of them.

Because some manufacturers will be able to pass on some additional costs to customers, output-based rebates do pose the potential to generate windfall profits for energy-intensive manufacturers and eliminate a carbon price signal intended to motivate investments in efficiency. The potential for windfall is eliminated with a rebate anchored to the *best-practice* energy-intensity for each eligible six-digit category in the North American Industry Classification System. An output-based rebate preserves the financial reward for those manufacturers that invest in efficient production, and it diminishes the competitive disadvantage with international competitors from all countries until international sectoral agreements are established.

⁴ Michael G. Morris, Chairman, President, and CEO, American Electric Power. Testimony before the Subcommittee on Energy and Air Quality of the Energy & Commerce Committee of the U.S. House of Representatives, March 2008.

⁵ Output-Based Rebates are defined in H.R. 7146 sponsored by Congressman Jay Inslee.

13. Which of the three main competitiveness approaches is applicable to interstate trade with states that accede to a regional cap-and-trade policy?

Due to the ease of substitution with out-of-state suppliers for many manufactured products in the national economy, interstate trade is far more sensitive than international trade to the competitiveness concern raised by a cap-and-trade policy. Similarly, the relative ease of relocation reduces the transaction cost of moving production to states without a price on carbon. Because energy-intensive manufacturers with geographic flexibility within the U.S. have *already* sought competitive advantage by moving to regions with low energy prices, adding a price on carbon may not motivate much further movement among energy-intensive manufacturers.

The ultimate remedy to the competitive disadvantage of energy-intensive manufacturers in states with a carbon price is the emergence of a national, economy-wide price on carbon. Until Congress enacts such legislation, however, energy-intensive manufacturers are participating in the development of regional cap-and-trade policies to establish a price for greenhouse gas pollution.

The Regional Greenhouse Gas Initiative opted to launch a cap-and-trade policy years ahead of any federal regime, and the members elected to isolate coverage of their cap-and-trade policy to the electric power sector. Though some generators may invest in less carbon-intensive power plants, they are not likely to leave a region with such tight supply margins, and the competitive wholesale market for electricity in the northeast region ensures that power companies will be able to pass their additional costs to consumers. However, Pennsylvania opted to remain an observer state in the RGGI process because of concerns that increases in the cost of electricity for its major energy-intensive manufacturers would cost the state jobs if competitive pressure from others in the Ohio River Valley outside the RGGI territory was too great.

The Western Climate Initiative is designing a cap-and-trade policy that would start on January 1, 2012 – the same start date indicated in all the legislative proposals for a federal cap-and-trade policy. Presuming Congress can enact such legislation, the WCI would have to determine whether to seek pre-emption of the federal policy, and if so, the differences in the terms between the WCI and federal regimes would determine whether manufacturers operating within WCI states would face any competitive disadvantage compared to manufacturers in other states.

Some manufacturers are concerned about their exposure in the year 2012 if (1) Congress fails to enact federal cap-and-trade legislation that establishes a uniform, economy-wide carbon price, or (2) Congress succeeds but the result is so weak that WCI members choose to operate as a separate regime.

Similar to energy-intensive manufacturers of global commodities, the main options are:

- A. Exemption
- B. Trade Measures
- C. Output-Based Rebates

Exemption would not be from the WCI cap-and-trade policy seems highly unlikely as the emission reduction targets are challenging and major industrial facilities will be expected to play

a major role. In addition, the electric power sector would continue to be covered under the WCI policy, so exemption would only partially address the concern.

Consumption-based accounting would track the carbon content of goods produced outside of the WCI territory but consumed within them. Each state would then have to take responsibility for its full carbon footprint, and there would be little incentive for companies to source carbon-intensive products from states outside of the WCI, shifting jobs to other states on the basis of carbon cost savings alone. Establishing public data sets that trace private sector trade in all goods that qualify for this type of protection could prove difficult on a practical and legal basis.

Output-based rebates would have far lower data requirements and involve less additional administrative expense to enforce. All entities in the industrial sector would still face a carbon price, but for those most vulnerable to interstate substitution for sources of supply outside the WCI territory, an output-based rebate based on the best practice energy-intensity of production for each eligible NAICS category would diminish any disadvantage *and* still drive investments in efficiency and innovation, yielding a competitive *advantage* over suppliers outside the WCI.