

Market-Based Clean Performance Standards as Building Blocks for Carbon Pricing

A Hamilton Project proposal by Carolyn Fischer of Resources for the Future uses market-based tradable performance standards to reduce industrial carbon emissions. Specifically, the proposal:

- **Sets carbon emissions benchmarks by sector** against which a firm's emissions are evaluated, sanctioning firms with emissions in excess of their sector's benchmark.
- **Provides tradable credits** to firms that reduce emissions below their sector's benchmark, which can be sold to other firms that face higher abatement costs.

Issue Overview

- **Reducing industrial carbon emissions is a critical element of combating climate change.** In 2017, industrial emissions accounted for 22 percent of total greenhouse gas emissions in the United States.
- **International trade can pose a challenge.** When goods production is emissions intensive, emissions reduction is costly, and goods can be imported from abroad, this can circumvent regulations, posing difficulties for industrial emissions reductions.
- **Sector-based, tradable performance standards** would employ market mechanisms to achieve substantial emissions abatement when an optimal carbon price is unavailable.

The Challenge

Reducing industrial greenhouse gas emissions is essential for making overall progress in mitigating the damages from climate change. Industrial emissions—especially energy-intensive manufacturing—account for nearly one quarter of all U.S. carbon emissions. Industrial sectors are therefore key players in the effort to address climate change.

Industrial decarbonization requires significant investment in low-carbon manufacturing technologies, which can disadvantage domestic firms relative to their unregulated, international competitors. This might mean that in the face of regulation production shifts to other countries, implying no reduction in carbon emissions, just domestic production. As clean electricity technologies are more widely accessible than the technologies required to decarbonize industrial processes, pricing carbon emissions from industrial manufacturers will not be effective without rewarding the development of the technology necessary to reduce emissions. To achieve meaningful reductions in carbon emissions, policymakers must therefore consider industrial firms' unique production challenges and avoid diversion of economic activity to unregulated foreign economies.

The Path Forward

In response to these challenges, Fischer proposes guidelines and describes the policy choices that must be made during implementation of tradable performance standards.

- 1. Selecting the policy target.** Policymakers have several options for pricing firms' carbon emissions output within the tradable performance standards framework:
 - *Set the price of carbon* through an output-refunded emissions tax. Unlike a carbon tax in which the government would collect all revenues from the tax, under this proposal firms that emit less than their sector's benchmark would receive payments from the government.
 - *Cap total carbon emissions* by sector and allocate tradable credits based on carbon output.
 - *Set emissions intensity*, targeting a firm's carbon emission rate relative to the intensity of a given production activity. Focusing on emissions intensity prioritizes innovations in new technologies and processes.
- 2. Choosing the sectors.** Sectors that are both energy-intensive and trade-exposed (EITE) are more limited in their ability to accommodate policies that raise carbon costs. Thus, EITE sectors are particularly good candidates for tradable performance standards as a mechanism to reduce emissions.
- 3. Setting the benchmarks.** The benchmarks against which firms' emissions are evaluated depend on several factors: the scope of emissions considered, the variability of benchmarks across sectors and between products within sectors, and the severity of emissions reductions demanded relative to current emission levels.

Tradable performance standards offer many advantageous features. Tradability gives firms an incentive to cut their emissions even below the benchmark, as this allows them to sell their awarded credits to other firms. Tailoring performance standard benchmarks by sector also encourages EITE sectors to join other sectors in decreasing emissions by mitigating the higher implementation costs that EITE sectors face.

Fischer argues that tradable performance standards represent a feasible strategy to reduce carbon emissions in critical industrial sectors. While sector-based tradable performance standards do not establish an economywide carbon price, they can facilitate the cross-sector coordination necessary to lay the groundwork for more comprehensive climate policies in the future.

About the Author

Carolyn Fischer is a senior fellow with Resources for the Future, and currently holds joint appointments as a professor of environmental economics at the Vrije Universiteit – Amsterdam and as a Canada 150 Research Chair in Climate Economics, Innovation and Policy at the University of Ottawa.