



IF WALMART WERE IN CHARGE

Sourcing CO₂ Emissions Reductions at Least Cost

Raymond J. Kopp gathers shopping lessons for the U.S. government from a price-cutting pro.

Seemingly everyone has an opinion of Walmart, and quite often these opinions diverge. But just about everyone would agree that Walmart sources its products in a manner that permits it to sell them at very low prices. The primary reason is that Walmart is itself a great shopper—for any given product, the company looks globally for the best price and encourages suppliers to compete with one another.

In late 2009, the United States pledged to the international community that it would substantially reduce its carbon dioxide (CO₂) and other greenhouse gas emissions by 2020, and the president restated this goal in the 2011 *Economic Report of the President*. Now that U.S. policymakers are

in the market for CO₂ reductions, it would behoove them to take some shopping lessons from Walmart.

Always Shop for the Best Price

Although the U.S. Senate did not follow the House of Representatives in 2009 in passing comprehensive climate legislation to reduce CO₂ emissions, the U.S. Environmental Protection Agency (EPA) is moving ahead with the regulation of CO₂ under authority contained in the Clean Air Act (CAA). Despite its 2009 rejection of an overarching climate policy, the Senate now is considering energy legislation in the form of a clean energy standard that would reduce emissions (primarily from the electric utility

sector) by requiring a growing percentage of the nation's electricity to be generated from zero or low CO₂-emitting electricity generation technologies.

Each of these actions—regulatory and legislative—is essentially equivalent to buying reductions in CO₂ emissions, and the price being paid is the cost CO₂ emit-

legislation—the American Clean Energy and Security (ACES) Act of 2009. In one analysis, EIA allowed reductions in emissions to take place wherever they were least expensive, whereas in a second case, reductions could take place only within the United States.

A comparison of the results is striking. As Figure 1 portrays, the cost of complying with

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ters (and eventually the general public who purchase and use energy) must pay to comply with these new regulations and standards. And either way, the more cheaply emitters can comply with the regulations, the lower will be the energy price increases faced by U.S. households and businesses, and the greater will be the growth of the U.S. economy and jobs.

The Importance of Supplier Flexibility

The effect of a reduction in a ton of CO₂ emissions on the global climate system is the same no matter where that reduction takes place, whether from a power plant in Ohio or across the border in Mexico. The irrelevance of the emissions location gives rise to an important feature of well-designed climate policy—*supplier flexibility*. A policy with supplier flexibility is one that enables reductions in CO₂ emissions to take place where they are the least expensive.

In the marketplace for CO₂ reductions, the cost of the reduction can vary a great deal, so shopping for the least-cost option can have a significant effect on energy prices, economic growth, and employment. For example, the Energy Information Administration (EIA) conducted a series of economic analyses of the House-passed climate

the requirements of the ACES Act in 2020 for the last ton of CO₂ reduced would have been \$52 if all reductions had to take place in the United States, compared to \$31.75 (a savings of more than \$20) when emitters of CO₂ could shop the global market for reductions. EIA estimated the cost savings gained through global shopping to be worth \$19 billion in 2020 in terms of enhanced U.S. gross domestic product.

These cost savings are not the result of arcane and dubious economic analyses but rather common sense known to every American consumer—you can find a deal if you shop around.

The Importance of Source Flexibility

Just as it does not matter where CO₂ emissions are reduced, it does not matter how they are reduced. The effect is the same whether a ton of reductions is from a U.S. power plant or a fleet of automobiles. The result is *source flexibility*. Well-designed policies incorporating source flexibility consider all sources of emissions as candidates for reductions and then choose those sources with the lowest cost.

The importance of source flexibility in controlling the cost of CO₂ reductions is best exemplified by the releases of CO₂

Figure 1. Cost of Reducing Emissions with and without Supplier Flexibility

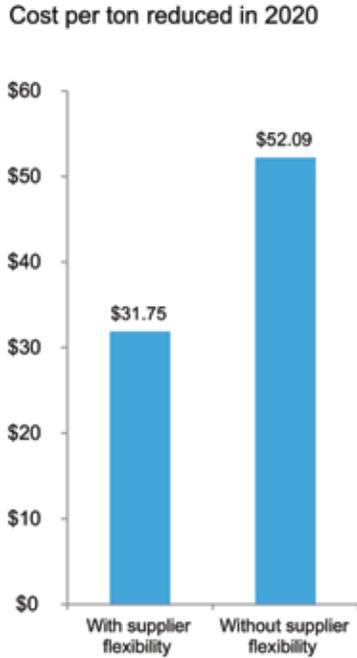
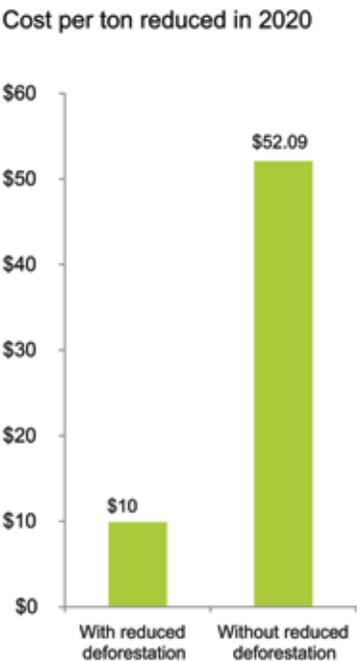


Figure 2. Cost of Reducing Emissions with and without Source Flexibility



from the clearing of tropical rain forests for agriculture and timber production. Using conservative assumptions, a recent RFF study by Erin Myers Madeira and colleagues finds that 100–125 million tons of these deforestation-related CO₂ emissions can be reduced annually at \$10 per ton. Figure 2 compares the cost of CO₂ reductions from reduced deforestation in tropical countries to the estimates provided by EIA of reducing CO₂ emissions solely in the United States. The deforestation costs are one-fifth the domestic U.S. cost—like buying a \$1,000 plasma TV for \$200.

Empowering the Shoppers

The greater the reductions we demand from our energy sector, the greater will be the cost—an economic fact of life. The way to contain the cost within reasonable bounds is to exercise supplier and source flexibility, and by far the best way to do that is to purchase emissions reductions generated through reductions in tropical deforestation.

Regulation of CO₂ emissions is now the law of the land in the United States under the CAA. As it traditionally has been applied, it generally lacks source and supplier flexibility; however, legal scholars and CAA experts are split in their opinions regarding EPA’s flexibility under the act. Some argue that EPA might have flexibility in its interpretation of the CAA and could provide regulated entities with the ability to purchase CO₂ reductions from overseas forestry projects.

As Congress continues to develop policies to promote clean energy within the United States, it has the ability to empower CO₂ emitters to reduce their emissions at the least cost globally. Clean energy standards, such as those proposed by the president and under discussion within Congress, would require increasingly greater portions of U.S. electricity to be generated from

Beyond Price

In addition to cost-effectiveness, reducing tropical deforestation is a preferred emissions reduction policy for three reasons:

- » An estimated 18–25 percent of annual global greenhouse gas emissions come from deforestation, so reduced deforestation offers a way to substantially cut emissions.
- » Although it takes a very long lead time and huge sums of capital to transform our energy infrastructure, policies to reduce deforestation can be implemented quickly, and emissions reductions can be achieved just as fast. Although we are investing in new, low-carbon energy systems to reap carbon dioxide reductions in the future, we can thus meet our immediate emissions reduction commitments now by investing in policies to reduce deforestation.
- » Tropical forests are home to the bulk of the world’s biodiversity. Reducing tropical deforestation not only reduces carbon dioxide emissions and protects the global climate, but it carries with it the side benefit of maintaining plant and animal habitat.

sources that emit low amounts of CO₂. Such standards could easily accommodate supplier and source flexibility by allowing the purchase of CO₂ reductions from overseas forestry projects in lieu of investments in prohibitively expensive low-carbon energy projects.

Perhaps most importantly, the fiscal policy debate now under way in Washington quite likely could result in fundamental U.S. federal tax reform. It is a well-known economic fact that lowering distortionary taxes (such as payroll taxes) has tremendous benefits in terms of enhanced economic growth and job creation. Putting a price on CO₂ emissions and using the resulting revenue to lower labor taxes on a neutral dollar-for-dollar basis would both enhance growth and reduce CO₂ emissions. Building in a tax credit system based on CO₂ reductions from reduced tropical deforestation would lower revenues a bit but enhance the economic efficiency of the CO₂ pricing policy.

CO₂ regulatory regimes are available in many flavors. To get the most environmental protection for every dollar spent, the regimes need to be flexible in where and how emissions reductions are achieved. Currently, the least-cost reductions come from reduced rates of deforestation in tropical countries. If Walmart were in charge, that’s where it would be shopping. ●

FURTHER READING

- Air Resources Board. 2011. *Compliance Offset Protocol for U.S. Forest Projects*. Sacramento, CA: California Environmental Protection Agency.
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